

Avaya Solution & Interoperability Test Lab

## Application Notes for Configuring Libatel SharpDial with Avaya Aura<sup>®</sup> Communication Manger R6.0.1 using Avaya H.323 Deskphones - Issue 1.0

#### Abstract

These Application Notes describe the configuration steps for provisioning Libatel's SharpDial Call Detail Recording Solution to successfully interoperate with Avaya Aura® Communication Manager R6.0.1 using Avaya H.323 deskphones. The SharpDial solution consists of a Call Detail Recording server based on the logging of outgoing, incoming, internal and missed calls data reported by the PBX, to manage captured data and generate reports. The monitoring of Call Detail Recording using SharpDial, a web-SQL based call accounting solution, gives a detailed account of all calls made and received by the Avaya Aura® Communication Manager R6.0.1.

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

SharpDial is a web-SQL based call accounting solution used to log outgoing, incoming, internal and missed calls data sent by the PBX, to manage captured data and generate reports. SharpDial connects to any PBX configured to send call detail record (CDR) on a Transmission Control Protocol (TCP) port (client or server), serial connector, through ftp or web services operations. When connected to Avaya Aura® Communication Manager no parser is needed. SharpDial Components are:

- 1. **Monitor Service:** SharpDial Monitoring service is responsible for starting and stopping all SharpDial services, also responsible for sending heartbeat and notification emails at configurable intervals to configured email addresses.
- 2. **Process0 Service:** Responsible for establishing connection with multi-site PBX and logging data in the process0 databases table.
- 3. **Engine Service:** Engine application, responsible for pricing all incoming, outgoing and internal calls.
- 4. **Parser (optional):** acting as a bridge, responsible for converting CDR data into standard format, recognized by the SharpDial engine.
- 5. License service: manage solution licence.
- 6. Administration and reporting interface: Web based interface used for updating the software's database and generating reports.

## 2. General Test Approach and Test Results

The test environment comprises of an Avaya Aura® Communication Manager connect to a simulated PSTN in order to generate Call Detail Recording (CDR) information for incoming and outgoing calls. The information captured consists of call information originating and terminating on Avaya 96xx Series deskphones with H.323 firmware. The information on calls made and received is presented in a reporting structure by a web interface on the SharpDial server.

## 2.1. Compliance Test Cases

This section contains a summary of test cases carried out to validate the various capabilities of the solution and to show the interoperability of the SharpDial and Communication Manager.

#### 2.1.1. Avaya Feature Interaction Verification

Verify the response of the SharpDial solution to Communication Manager.

- Connection between SharpDial Process0 service and Communication Manager: Verify that Communication Manager connects to the SharpDial Process0 Service (TCP Server) via TCP\IP Socket.
- **CDR Captured by the SharpDial Process0 Service:** Verify that CDR is saved to backup files.
- **Captured CDR logged to Process0 table in the database:** Verify captured CDR is stored in Process0 Table before being parsed and billed.
- **Incoming, outgoing, internal and missed calls tests:** Verify associated CDR is captured in the backup files.

#### 2.1.2. SharpDial Application Functionality Verification

Verify features of the SharpDial Solution to ensure they function in an Avaya solution.

- **Parsing Validation**: Parsing is validated.
- **Billing Validation**: Billing is validated with the applied billing schema.
- **Report Testing:** Validate authorization\_all, Extension\_all, Incoming, Missed, Conference and Internal reports.

#### 2.1.3. Failover and Serviceability Tests

Verify the response of the SharpDial solution to various failures.

- SharpDial Process0 Service stopping
- SharpDial Engine stopping
- SharpDial Server restarting
- Simulating a LAN failure on Communication Manager

#### 2.2. Test Results

All tests passed successfully.

**Note:** Testing in all cases of this document consisted of only H.323 signalling on the Communication Manager, a different interface on the SharpDial is required for SIP deskphones.

#### 2.3. Support

Support from Avaya is available at http://support.avaya.com. Technical support for Libatel SharpDial can be obtained as shown below.

Libatel Debahy Centre, Charles de Gaulle Av, Sin el Fil, Lebanon Tel.: +961 1 485160 Fax: +961 1 485172 Email: <u>libatel@libatel.com</u> Website: <u>http://www.libatel.com</u>

## 3. Reference Configuration

**Figure 1** shows the network topology during compliance testing. The SharpDial server was placed on the LAN. The SharpDial server collects CDR records from Communication Manager and presents the information obtained to users on the LAN via http web session.

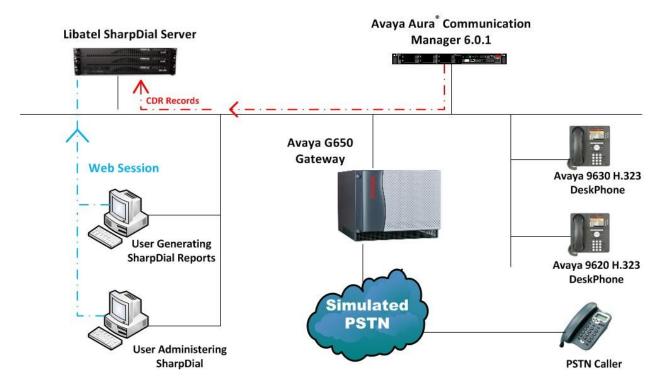


Figure 1: Connection of Libatel SharpDial and Avaya Aura<sup>®</sup> Communication Manager R6.0.1

## 4. Equipment and Software Validated

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

Equipment Description	Software Release
Avaya S8800 Server	Avaya Aura <sup>®</sup> Communication Manager R6.0.1
	SP3 Patch: 00.1.510.1-19009
Avaya 9620 H.323 Sets	96xx H.323 Release 3.1 SP2
Avaya 9630 H.323 Sets	96xx H.323 Release 3.1 SP2
IBM x3350 Libatel Call Accounting	Libatel SharpDial Process0 Service V4.3.2
Sever (SharpDial)	Libatel SharpDial Engine Service V4.2.6

## 5. Configuration of Avaya Aura® Communication Manager

Configuration of Communication Manager is performed through Avaya Site Administration supporting System Administration Terminal (SAT). An SSH session to the IP address of Communication Manager initiates the console connection.

**Note:** The configuration of Communication Manager for call routing is outside the scope of this document. It is assumed that a full working system is already installed. Included below are the changes necessary in order to ensure CDR records are being produced correctly by the Communication Manager.

### 5.1. Add CDR Server to Node Names IP

Add the IP address of the CDR server into the **IP NODE NAMES**. Type **change node-names ip** to access the node names and add the server **Name** and **IP Address** as shown below.

change node-names	ip
	IP NODE NAMES
Name	IP Address
CLAN	192.168.30.80
Medpro	192.168.30.81
SessionManager	192.168.30.101
default	0.0.0.0
gateway	192.168.30.1
procr	192.168.30.92
procr6	::
CDR_Server	192.168.30.150

#### 5.2. Add CDR Service as an IP Service

Add the CDR service into IP Services by typing **change ip-services**. Note the following as this information may be needed when setting up the SharpDial Server.

- Local Node is CLAN
- Remote Node is that of the CDR\_Server entered as it was configured above
- Service Type is CDR1
- Remote Port number in this example shown as 5555 but can be any free port number

-								
change ip-	services				Page	1 of	3	
Service Type CDR1	Enabled	Local Node CLAN	IP SERVICES Local Port O	Remote Node CDR_Server	Remote Port 5555			

#### 5.3. Configure CDR parameters

Type change system-parameters cdr. Ensure all the fields are as shown below on Page 1 of system-parameters cdr. Note the Primary Output Endpoint is that of the service type added in Section 5.2. and Primary Output Format is set to customised for the SharpDial configuration.

change system-parameters cdr Page 1 of 2
CDR SYSTEM PARAMETERS
Node Number (Local PBX ID): CDR Date Format: month/day
Primary Output Format: customized Primary Output Endpoint: CDR1
Secondary Output Format:
Use ISDN Layouts? n Enable CDR Storage on Disk? n
Use Enhanced Formats? n Condition Code 'T' For Redirected Calls? y
Use Legacy CDR Formats? y Remove # From Called Number? n
Modified Circuit ID Display? n Intra-switch CDR? y
Record Outgoing Calls Only? n Outg Trk Call Splitting? y
Suppress CDR for Ineffective Call Attempts? n Outg Attd Call Record? y
Disconnect Information in Place of FRL? n 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
Record Agent ID on Incoming? n Record Agent ID on Outgoing? y
Inc Trk Call Splitting? n
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: 15

Ensure that all **Data Item Length** entries are the same as outlined below on **Page 2** of **systemparameters cdr**.

cha	nge system-parame	eters c	dr			Page	<b>2</b> of 2
			CDR SYSTEM PARAM	IETERS			
	Data Item - Len	ngth	Data Item -	Length	Da	ata Item -	- Length
1:	date	- 6	17: calling-num	- 15	33:		_
2:	space	- 1	18: space	- 1	34:		-
3:	time	- 4	19: auth-code	- 7	35:		-
4:	space	- 1	20: space	- 1	36:		-
5:	duration	- 4	21: vdn	- 6	37:		-
6:	space	- 1	22: return	- 1	38:		-
7:	cond-code	- 1	23: line-feed	- 1	39:		-
8:	space	- 1	24:	-	40:		-
9:	code-dial	- 4	25:	-	41:		-
10:	space	- 1	26:	-	42:		-
11:	code-used	- 4	27:	-	43:		-
12:	space	- 1	28:	-	44:		-
13:	in-trk-code	- 4	29:	-	45:		-
14:	space	- 1	30:	-	46:		-
15:	dialed-num	- 23	31:	-	47:		-
16:	space	- 1	32:	-	48:		-
			Record length	= 90			

#### 5.4. Enable Missed and Internal Calls

To allow missed calls appear on the CDR reports set **CDR Reports** to  $\mathbf{r}$  in the trunk group used for outgoing/incoming calls. Type **change trunk-group x** where  $\mathbf{x}$  is the number of the incoming/outgoing trunk group.

change trunk-gro	oup 9		Page 1 of 21	
		TRUNK GROUP		
Group Number: 9		Group Type: isdn	CDR Reports: r	
Group Name: Sh	harpDial	COR: 1	TN: 1 TAC: *19	
Direction: tw	wo-way	Outgoing Display? n	Carrier Medium: PRI/BRI	
Dial Access? y		Busy Threshold: 255 Night	Service:	
Queue Length: 0				
Service Type: ti	ie	Auth Code? n	TestCall ITC: rest	
	Far	End Test Line No:		
TestCall BCC: 4				

To enable intra-switch calls be recorded type **change intra-switch-cdr** and add the **Extension** numbers of the sets that are to be recorded for internal calls.

change intra-swit	ch-cdr		Page 1 of 3
	INTRA-SWITC	H CDR	
Extension	Assign Extension	ed Members: 8 Extension	of 5000 administered Extension
2000			
2001			
2002			
2010			
2011			
2012			
4000			
4001			

## 6. Configuration of the Libatel SharpDial Server

The configuration of Windows 2008 and the installation of any prerequisite software on the SharpDial server are outside the scope of these Application Notes. These have been included in **Appendix** as a reference guide should it be required.

#### 6.1. Libatel SharpDial Components Installation

The installation of SharpDial includes connection requirements specific to the Communication Manager and will be outlined in this section. To manually install the SharpDial call accounting software:

- Close all open applications
- Run the setup.exe file

The system displays a welcome screen. Press Next to continue.



The setup displays **Choose Components** screen. Select the services as shown below and click **Next** to continue.

oDial 4.3.0 you want to i	nstall.
nt to install and uncheck	the components you don't want to
Automatic	<b>T</b>
Database Web Interface Reports Basic Services Process0 Engine Cicense S	see its description.
Monitor 5	<sup>ier</sup> ⁺≠
	Automatic Automatic <b>Database</b> <b>Web Interfac</b> <b>Reports</b> <b>Reports</b> <b>Basic Services</b> <b>Process0</b> <b>Constant</b> <b>Engine</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>Constant</b> <b>C</b>

Configure the SQL Instance Name with the sa Username and Password, New Database name and Report Server URL.

Instance Name:	localhost\SQLEXPRESS
Username:	58
Password:	<u>[</u>
New Database:	SharpDial
Report Server:	http://localhost/ReportServer\$SQLEXPRESS

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11 of 32 SDial\_CM6\_H323 Configure the **Report server** login/domain credentials. If no domain configuration is required, keep the default **localhost** value.

nter Administrato	r Account	
nter an account ar eport server.	id password that has admin access to the	LIBATEL
	lows account details:	
Domain:	localhost	
Account:	Administrator	
Password:	•	
.ibatel.com		an anna

Configure the PBX site information as described below:

- Site Name: Description of the PBX site's name
- Connection Type: TCP/IP for Communication Manager
- Frame Type: CM Customized for Communication Manager
- **Connection IP**: BX configured IP address
- Connection Port: Socket port number matching the configured CDR port as in Section 5.2

er Connection Info ter the information needed to connec	tt to the PABX.
Site Name :	Main Site
Connection Type :	TCP/IP
Frame Type :	CM Customized*
TCP/IP	*Refer to Documentation for customized format
Connection IP :	192.168.30.80
Connection Port :	55555

Solution & Interoperability Test Lab Application Notes ©2012 Avaya Inc. All Rights Reserved. Select the **Destination Folder** and click **Install** to complete the installation.

hoose Install Location	
Choose the folder in which to install	SharpDial 4.3.0.
	he following folder. To install in a different folder, click
rowse and select another folder. C	lick Install to start the installation.
Destination Folder	
Destination Folder C:\Program Files (x86)\SharpDia	al Browse
C:\Program Files (x86)\SharpDia	a Browse
<b>C:\Program Files (x86)\SharpDi</b> pace required: 50.7MB	a Browse
	Browse

## 7. Configuring Libatel SharpDial through Web Interface

Open <u>http://<SharpDial Server IP Address>/sharpdial/reportinguser/login.aspx</u>. Log into the SharpDial web interface with security manager role using the default **User Name** and **Password**.

SharpDial by LIBATEL - Windows Internet Explorer		
😋 😔 ♥ 🖉 http://127.0.0.1/sharpdial/reportinguser/login.aspx		• 🗟 49 🗙
🖕 Favorites 🛛 👍 🙋 Suggested Sites 🔹 🙋 Web Slice Gallery 🔹		
SharpDial by LIBATEL		6
SharpDial Call Accounting Software by LIBATEL		
	Log In	
	User Name: manager	
	Password:	
	Log In	

Under Administration on the left hand pane click on Sites, this displays all connection information on the current site. Any changes that need to be made on the connection to this site can be made from here by clicking Edit. The information highlighted below is automatically populated as was configured in Section 6.1.

🔏 SharpDial by LIBATEL									6	- 6
🖻 🍙 Home	<u>Home</u> > <u>Admir</u>	istration > Sites								
□ Accounts	Manage Sit	es								
🧟 Create web User										
A Reporting Groups	Filter By Site I	Vame: ALL		•	Search	]				
🝰 Sharp Dial Users										
Change Password	Site Name	<u>Connection T</u>	<u>ype</u>	IP	Port IP	<u>Baudrate</u>	<u>Port</u> Serial	EditDelete	Ext and codes	
📝 Change Email	an Site	IP Connection		192.168.30.80	5555			Edit Delete	Details	
-	· · · · · · · · · · · · · · · · · · ·	Number		Name			Type		Edit Delete	
📝 Recover Password	*11		*11		loc	al			Edit Delete	
	*19		*19		loc	al			Edit Delete	
🗆 🧠 Administration	9 *19		9 *19		loc	al			Edit Delete	
	N/A		N/A		loc	al			Edit Delete	
🖧 Departments			No Line	e					Edit Delete	
√ Sites					lo	cal		•	Add	
		IP Connection	-					Add		
Lines	Add connectio	n type								

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## 8. Verification Steps

The following steps can be taken to ensure that Communication Manager is sending CDR data and to show that the SharpDial server is receiving this data and processing it properly.

#### 8.1. Verify that CDR data is being sent by Communication Manager

Type **status cdr-link** this brings up a page showing the **Link State** as either up or down. Observe as shown below the **Link State** should be **up**.

```
      status cdr-link
      CDR LINK STATUS

      Primary
      Secondary

      Link State:
      up

      Date & Time:
      2011/11/02 11:11:02

      Forward Seq. No:
      0

      Backward Seq. No:
      0

      CDR Buffer % Full:
      0.00

      Keason Code:
      OK
```

## 8.2. Verify that CDR data is being received by the Libatel SharpDial Server

Log onto the SharpDial server and check that raw CDR data has been received in the CDR backup files. Open the CDR backup file located in **C:/ProgramFiles(x86)/SharpDial/ Process0/CDRBackup**. The information on recent calls should be visible as shown below.

<mark>   CDRBackup</mark>   → Local Di:	sk (C:) 🔹 Program Files (x86) 🔹 SharpDial 👻 Prod	cess0 + CDRBackup	👻 🔯 Search CDI	RBackup	
Organize 🔻 Include in lit	orary 🔻 Share with 👻 New folder			383	• 🔳 🔞
😽 Favorites	Name *	Date modified	Туре	Size	<u> </u>
🧮 Desktop	ALLCDR20110914	14/09/2011 23:20	Text Document	8 KB	
📕 Downloads	ALLCDR20110915	15/09/2011 23:11	Text Document	1 KB	
🔛 Recent Places	ALLCDR20110916	16/09/2011 22:43	Text Document	7 KB	
🔚 Libraries	ALLCDR20110917	17/09/2011 23:08	Text Document	1 KB	
Documents	ALLCDR20110918	18/09/2011 23:30	Text Document	1 KB	
🍶 Music	ALLCDR20110919	19/09/2011 22:11	Text Document	5 KB	
📔 Pictures	ALLCDR20110920	20/09/2011 23:45	Text Document	6 KB	
Videos	ALLCDR20110921	21/09/2011 23:28	Text Document	1 KB	
ALLCDR20110920 - Not	epad				
File Edit Format View H					
011/9/20 12:26:0 011/9/20 14:28:0 011/9/20 16:29:59 011/9/20 16:29:59 011/9/20 16:29:59 011/9/20 16:29:59 011/9/20 16:29:59	1   12:20 09/20   1   14:22 09/20   1   092011 1538 0001 c   1   092011 1538 0001 c 1   092011 1538 0001 c   1   092011 1538 0001 c   1   092011 1538 0001 c   1   092011 1547 0000 c   1   092011 1547 0000 c	*11 *11 7 *11 28/09/2011 13:18	30 30 30	01 01 00 00 01 1 KB	3001 3000 3001 3000 3000
	ALLCDR20110929	29/09/2011 22:07	Text Document	1 KB	

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# 8.3. Verify that Libatel's SharpDial is producing reports on CDR information correctly

Using the reporting tool on the Web Interface create a CDR report by logging onto <u>http://<sharpdial Server IP>/sharpdial/reportinguser/login.aspx</u> and click on **Reports** at top right of page as shown below.

<ul> <li>Image: bit bit bit bit bit bit bit bit bit bit</li></ul>	0/SharpDial/reportinguser/Home.aspx	Ask.com
t Yiew Favorites Iool: Iustomize Links 💋 Free Hol	Edelp mail 🔊 Windows 🐿 Windows Marketplace 🔊 Windows Media 🔊 To Be Reviewed 😰 SSO	
SharpDial by LIBATEL		🟠 • 🔊 - 🖶 • 🔂 Bage • 🎯 Tools
SharpDia		nistration   Miscellaneous Reports
	Hama	
me	Home	Welcome manager!

There are a number of reports that can be run in the example below **extension\_all** is picked as highlighted. Click **Next** to continue.

O billpersite	Oincoming_extensions	O trunk_international
O code_abuse	Oincoming_extensions_overview	Otrunk_international_overview
O conferenceCalls_byExtension	O incoming_sites	O trunk_local
O conferenceCalls_byNumber	O incoming_trunks	O trunk_local_overview
O country_distribution	O incoming_users	Ouser_authorization
O department_authorization	Oincoming_users_overview	Ouser_authorization_masked
O department_authorization_masked	() internal	O user_extension
O department_authorization_overview	O internal_incoming	Ouser_extension_masked
O department_extension	O missedCalls_extensions	Ouser_maskedAcode
Odepartment_extension_masked	O summary_authorization	Ouser_maskedAcode_masked
Odepartment extension overview	Osummary_department_authorizatio	on 🔿 usersInfo
<pre> extension_all </pre>	O summary_department_extension	○ VDN_incoming
O extension_all_bothPrices	O summary_extension	○ VDN_missedcalls
Oextension_all_bothPrices_masked	Otop_10_authorization_price	O watchdog_country
O extension_all_masked	◯ top_10_contacts_count	O watchdog_number
O extension_all_overview		
		Next

Select the start date and end date you want this report to run from and click **Next** (not shown). If there are multiple sites select which sites are to be reported on and click **Next** (not shown).

PG; Reviewed; SPOC 3/22/2012 Solution & Interoperability Test Lab Application Notes ©2012 Avaya Inc. All Rights Reserved. 16 of 32 SDial\_CM6\_H323 In this example there is only one site called **Main Site** and a list of **Extensions** available are displayed on the left hand pane. Each extension that is to be reported on is added into the right hand pane called **Selected Extensions** as shown in the example below for extensions **3000** and **3001**. Click **Next** to continue.

ixtensions:	Generate Reports Selected Extensions:	
2000-Main Site 2002-Main Site 2010-Main Site 2012-Main Site 5000-Main Site 5001-Main Site N/A-Main Site	3000-Main Site 3001-Main Site	

See the displayed example of an **Extension\_All\_Report** below.

					Date:02/1	1/2011 12:06:27
			Extensi	on All Report		
From :20/0	9/2011					
To : 20/09/	2011					
Extension : 300	01					
Date	Time	Duration	Code	Contact	Region	Price(euro)
20/09/2011	15:38	0:00:06		3000		0.0
20/09/2011	15:47	0:00:00		3000		0.0
20/09/2011	15:51	0:00:12		5001		0.0
20/09/2011	15:52	0:00:18		3000		0.0
20/09/2011	16:25	0:00:06		3000		0.0
20/09/2011	16:28	0:00:24		3000		0.0
Fotal for exten	ision : 3001	0:01:06				0.0
Total for Site :	Main Site	0:03:42				0.0
Grand Total:		0:03:42				0.0

## 9. Conclusion

As illustrated in this Application Notes Libatel's SharpDial can be configured to successfully interoperate with Avaya Aura® Communication Manager R6.0.1. All call types generated a CDR record and was reported on correctly by the SharpDial Server.

## 10. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at <u>http://support.avaya.com</u> where the following documents can be obtained.

- [1] Administering Avaya Aura<sup>TM</sup> Communication Manager, Document ID 03-300509, June 2010.
- [2] Avaya Aura<sup>TM</sup> Communication Manager Feature Description and Implementation, Document ID 555-245-205, June 2010.
- [3] Avaya one-X® Deskphone H.323 Administrator Guide, Release 6.1, Document ID 16-300698, December 2010

All information on the product installation and configuration for Libatel's SharpDial can be found at <u>http://www.libatel.com</u>.

## Appendix

Included in this Appendix is the configuration of Windows 2008 Sever for SharpDial software, the installation of Microsoft SQL 2008 as a prerequisite for the SharpDial installation and a post installation check list. Note that this is included as a reference only and is not to be followed as an installation and configuration guide.

# 1. Configuration of Windows 2008 Server before SharpDial software is installed

The below components must be installed on the server as part of the SharpDial software's prerequisites:

- Windows PowerShell: Microsoft's task automation framework, consisting of a command-line shell and associated scripting language built on top of, and integrated with the .NET Framework. PowerShell provides full access to COM and WMI, enabling administrators to perform administrative tasks on both local and remote Windows systems. (Download link: http://support.microsoft.com/kb/968929)
- Windows Installer 4.5: Microsoft® Windows® Installer (MSI) is the application installation and configuration service for Windows. (Download link : http://support.microsoft.com/kb/942288)
- Microsoft.NET framework 3.5: Required for the SQL installation.
- **Microsoft.NET framework 4.0**: Download link http://www.microsoft.com/net/download.aspx
- IIS5.0 or later

## 1.1. IIS 7 configuration

To enable IIS7, in the Control Panel, click Programs then click Turn Windows features on, click **Roles** -> Add role and select **Web Server (IIS).** 

Server Manager Add Roles Wizard		×	
File Action View Select Server Ro Server Manager (L/	les		
Roles Pestures Configuration Configuration Windows Fi Confirmation Windows Fi Confirmation Confirmation Progress Results Storage	Select one or more roles to install on this server.         Roles         Active Directory Contlificate Services         Active Directory Genetion Services         Active Directory Role and Services         Application Server         DNS Server         File Services         Prive And Document Services         Prive Services         Prive Services         Prive Services         Web Server (TIS)         Windows Deployment Services         Windows Server Update Services	Description: Active Directory Certificate Services (AD, CS) is used to create certification authorities and related role services that allow you to issue and manage certificates used in a variety of applications.	
x	More about server roles  Previous	> Install Cancel	

When prompted to select **Role Services**, check **ASP.NET** and **add all Required Role Services**. Continue with the wizard setup.

Server Manager	Add Roles Wi	izard				× ×
File Action View		Select Role Serv	ices			
Roles Features	Before You B	-	Select the role services to install for Web			
🛨 📷 Diagnostics	Server Roles		Role services:	Description:		
🗉 👬 Configuration	Web Server	Add Roles Wizard			× rt for	
Construction     C	Role Serv Confirmation	Add role You cannot Role Service			al support server e Web r external nvironment tb-based	
				Add Required Role Services Cancel		
		(i) Why are these rol			lii	
			Logging Tools Request Monitor Tracing More about role services	×		
•				< Previous Next > Install	Cancel	

Open Internet Information Services Manager (IIS) Manager. Run the **inetmgr** command from the **Start**  $\rightarrow$  **Run** dialog box. Specify a .NET framework version for an application pool.

- On the **Connections** pane, expand the server node and click **Application Pools**.
- On the **Application Pools** page, select the application pool for which you want to specify a .NET Framework version, and then click **Basic Settings** in the **Actions** pane.
- In the Edit Application Pool dialog box, in the .NET Framework version list, select the version that you want the application pool to use or select No Managed Code if the application uses only native code.
- Click **OK**.

Edit Application Pool
Name:
Classic .NET AppPool .NET Framework version:
.NET Framework v4.0.30319
.NET Framework v4.0.30319 .NET Framework v2.0.50727 No Managed Code
✓ Start application pool immediately
OK Cancel

Configure site's authentication: double click the site on the left pane, double click **Authentication** and enable **Anonymous Authentication** and **Basic Authentication**.

Group by: No Grouping -		
Name	Status	Response Type
Windows Authentication	Disabled	HTTP 401 Challenge
Forms Authentication	Enabled	HTTP 302 Login/Redirect
Digest Authentication	Disabled	HTTP 401 Challenge
Basic Authentication	Enabled	HTTP 401 Challenge
ASP.NET Impersonation	Disabled	
Anonymous Authentication	Enabled	

### 2. Microsoft SQL 2008 installation

Browse to the corresponding SQL express setup folder.



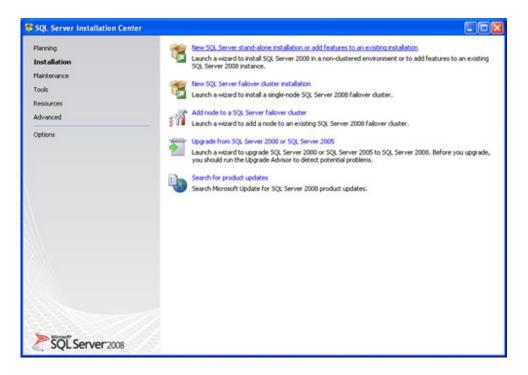
Start the installation from the installation centre window.

1 SQL Server Installation Center	
Planning Installation	Hardware and Software Requirements View the hardware and software requirements.
Maintenance Tools	Security Documentation View the security documentation.
Resources Advanced	Colline Release Notes View the latest information about the release.
Options	System Configuration Checker Launch a tool to check for conditions that prevent a successful SQL Server installation.
	Upgrade Advisor Upgrade Advisor analyzes any SQL Server 2005 or SQL Server 2000 components that are installed and identifies issues to fix either before or after you upgrade to SQL Server 2008.
	Chine Installation Help Launch the online installation documentation.
	How to Get Started with SQL Server 2008 Failover Clustering Read instructions on how to get started with SQL Server 2008 failover clustering.
	Upgrade Documentation View the document about how to upgrade to SQL Server 2008 from SQL Server 2000 or SQL Server 2005.
SOL Server 2008	

The installer runs a system check to verify that all required components are installed on the server. If failures occur (such as missing power shell), they must be corrected before proceeding with the installation.

Setup Support Rules Setup Support Rules identify before Setup can continue.	S problems that might occur when you install SQL Server Setup support files. Failures m	sust be corrected
etup Support Rules	Operation completed. Passed: 12. Failed 0. Warning 0. Skipped 1. Hide details_<< View detailed report	Berun
	Rule	Status
	Minimum operating system version	Passed
	Setup administrator	Passed
	Restart computer	Passed
	Windows Management Instrumentation (WMI) service	Passed
	Consistency validation for SQL Server registry keys	Passed
	Unsupported SQL Server products	Passed
	Performance counter registry hive consistency	Passed
	Previous releases of SQL Server 2008 Business Intelligence Develop	Passed
	Previous CTP installation	Passed
	Computer domain controller	Passed
	Microsoft .NET Application Security	Not applicable
	Sdtion WOW64 platform	Passed
	Windows PowerShell	Passed

Install a new stand-alone SQL server.



Hardware check is completed by the installer. If failures occur they must be corrected before proceeding with the installation.

Setup Support Rules Setup Support Rules identify before Setup can continue.	5 problems that might occur when you install SQL Server Setup support Nes. Fa	ilures must be corrected
Setup Support Rules	Operation completed. Passed: 5. Failed 0. Warning 0. Skipped 0 Hide details_<< View detailed report	Berun
	Rule	Status
	Minimum operating system version	Passed
	Setup administrator	Passed
	Restart computer	Passed
	Windows Management Instrumentation (WMI) service	Passed
	Consistency validation for SQL Server registry keys	Passed
		OK Cancel Help

SQL Express installer checks if all prerequisites are installed, if all rules are passed, press 'Next' to continue. Else install required components.

SQL Server 2008 Setup		
Setup Support Rules Setup Support Rules identify problems the before Setup can continue.	t might occur when you install SQL Server Setup support files. Failures a	sust be corrected
Feature Selection Disk Space Requirements Error and Usage Reporting	veration completed. Passed: 9. Failed 0. Warning 1. Skipped 1.	Benn
Ready to Instal	TT 000 0000 1 500 1	
Installation Progress	Rule	Status
Complete	Fusion Active Template Library (ATL)	Passed
	Unsupported SQL Server products	Passed
	Performance counter registry hive consistency	Passed
	Previous releases of SQL Server 2008 Business Intelligence Develop	Passed
	Previous CTP installation	Passed
	Consistency validation for SQL Server registry keys	Passed
	Computer domain controller	Passed
	Microsoft .NET Application Security	Not applicable
	Edition WOW64 platform	Passed
	Windows PowerShell	Passed
	Windows Firewall	Warning
	< Back	xt > Cancel Help

Solution & Interoperability Test Lab Application Notes ©2012 Avaya Inc. All Rights Reserved. Select SQL Feature Selection and press Next to continue. Database Engine Services, Reporting Services MUST be installed as well as Management Tools.

Feature Selection Select the Enterprise features to clustered.	install. For clustered installations, only Database Engine Services an	d Analysis Services can be
Setup Support Rules	Enatures:	Description:
Feature Selection Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Analysis Services Configuration Error and Usage Reporting Installation Rules Ready to Install Installation Progress Complete	Instance Features	Server features are instance-aware and have their own registry hives. They support multiple instances on a computer.
	Select All Shared feature directory: C:IProgram Files/Microsoft Se	QL Server)

Check the **Default instance** radio button and specify the instance name. Click **Next** to continue.

Instance Configuration Specify the name and instance ID		ance.				
Setup Support Rules Feature Selection Instance Configuration	Qefault instar     Nigned instar		MSSQLSE	RVER		
Disk Space Requirements Server Configuration Database Engine Configuration Analysis Services Configuration Reporting Services Configuration Error and Usage Reporting Installation Rules Ready to Install Installation Progress Complete	Instance (D: Instance goot de	rectory:	MSSQLSE C:\Progra	RVER am Files)Microsoft SQL	Server),	)
	SQL Server direc Analysis Service Reporting Servic Instaljed instanc	s directory: es directory:	C:\Progra	m Files'/Microsoft SQL	Server(MSSQL10.MSSQ Server(MSAS10.MSSQL Server(MSRS10.MSSQL	SERVER
	Instance	Feat	ures	Edition	Version	Instance ID
				< 840	k Next >	Cancel Help

At the disk space requirements page click **Next** to continue.

1 SQL Server 2008 Setup		
Disk Space Requirement	ents or the SQL Server features you selected.	
Setup Support Rules Feature Selection Instance Configuration <b>Disk Space Requirements</b> Server Configuration Database Engine Configuration Analysis Services Configuration Error and Usage Reporting Installation Rules Ready to Install Installation Progress Complete	Disk Usage Summary:  Comparison of the sequired, 60195 MB available System directory (C:\WNDOWS\system32): 1256 MB required Shared feature directory (C:\Program Files\Microsoft SQL Server\): 784 MB required Instance directory (C:\Program Files\Microsoft SQL Server\): 644 MB required	
	< Back Ment > Cancel	Help

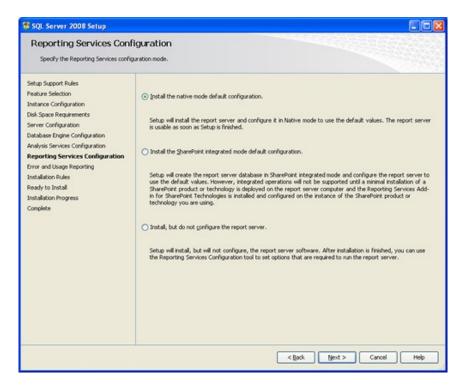
Select NT AUTHORITY\SYSTEM and use the same account for all SQL services. Click **Next** to continue.

Server Configuration Specify the configuration.				
ietup Support Rules	Service Accounts Collation			
feature Selection Instance Configuration	Microsoft recommends that you	use a separate account for each Se	QL Server service.	
lisk Space Requirements	Service	Account Name	Password	Startup Type
erver Configuration	SQL Server Agent	NT AUTHORITY(SYSTEM		Automatic 🖌
atabase Engine Configuration	SQL Server Database Engine	NT AUTHORITY(SYSTEM		Automatic 💌
Analysis Services Configuration	SQL Server Analysis Services	NT AUTHORITY(SYSTEM		Automatic 💌
Reporting Services Configuration	Sql Server Reporting Services	NT AUTHORITY(SYSTEM		Automatic 💌
Error and Usage Reporting Installation Rules	SQL Server Integration Servic	NT AUTHORITY/NETWORK SE		Automatic 💌
		d automatically where possible to u will need to specify a low privileg		
		Account Name	Password	Startup Type
	Service	PROCOGER, TWEETIN		
	Service SQL Full-text Filter Daemon Laur		<b>.</b>	Manual
				Manual Disabled

Solution & Interoperability Test Lab Application Notes ©2012 Avaya Inc. All Rights Reserved. Select the **Mixed Mode** authentication and note down your configure **sa** password as will be needed later during the component's installation.

1 SQL Server 2008 Setup				
Database Engine Config Specify Database Engine authenticat		istrators and data directories.		
Setup Support Rules Peature Selection Instance Configuration Disk Space Requirements Server Configuration <b>Database Engine Configuration</b> Analysis Services Configuration Reporting Services Configuration Error and Usage Reporting Installation Rules Ready to Install Installation Progress Complete	Specify the authen Authentication Moc O Windows auther	de Intication mode Q. Server authentication and system administrator account eee eee r administrators (Prind Davie)	tors for the Database Engine. Windows authentication)	SQL Server administrators have unrestricted access to the Database Engine.
			< gack Next >	Cancel Help

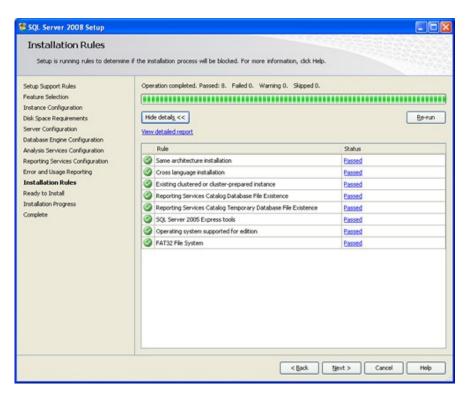
Install the Native mode default configuration for reporting services.



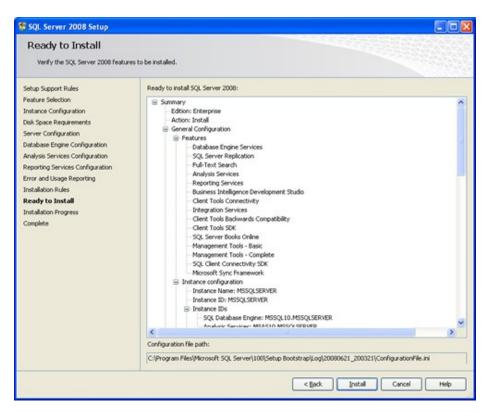
Solution & Interoperability Test Lab Application Notes ©2012 Avaya Inc. All Rights Reserved. Click Next to continue.

1 SQL Server 2008 Setup	
Error and Usage Report Help Microsoft improve SQL Serve	
Setup Support Rules Peature Selection Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Analysis Services Configuration Reporting Services Configuration <b>Error and Usage Reporting</b> Installation Rules Ready to Install Installation Progress Complete	Specify the information that you would like to automatically send to Microsoft to improve future releases of SQL.         Server. These settings are optional. Microsoft treads this information as confidential. Microsoft may provide updates though Microsoft Update to modify feature usage data. These updates might be downloaded and installed on your machine automatically, depending on your Automatic Update settings.         View the Microsoft policy for SQL Server privacy and data collection.         Read more about Microsoft Update and Automatic Update.         Gend more about Microsoft Update and Automatic Update.         Bend more about Microsoft Update and Automatic Update.         Server Binore about Microsoft Update and Automatic Update.         Server about Microsoft Transition about your hardware         Server feature usage data to Microsoft. Feature usage data includes information about your hardware         configuration and how you use Microsoft software and services.
	< Back Next > Cancel Help

Click Next to continue.



Click **Install** to complete the installation.



## 3. Post installation checklist

After installing all prerequisites, Sharpdial database and components follow the below checklist to validate the proper software's functioning:

Step	Description/Action	Reference
0	Validate the Communication Manager configuration.	SharpDial_CM-Configuration notes.pdf
1	Validate the monitoring service configuration file settings (database connection, monitored service and email configuration)	SharpDial_user_guide.pdf (section VII Configuration SharpDial monitoring service)
2	Validate the Process0 service configuration file (SQL settings, Site settings, logging)	SharpDial_user_guide.pdf (section VIII Configuration SharpDial Process0 service)
3	Validate the Engine configuration file (Service settings and traces)	SharpDial_user_guide.pdf (section X Configuration SharpDial engine service)
4	Disable Firewall	
5	Validate SQL server and SQL reporting services are running from Windows services management.	Sharpdial-Trobleshooting-guide.pdf (section IV SQL and Reporting service installation check)
6	Validate services startup type. All services startup type should be <b>Manual</b> . Engine service startup type should be <b>delayed automatic</b> .	
7	Validate all services are running, either from log files or from Windows services management.	
8	Validate SharpDial web interface web.config file.	SharpDial_user_guide.pdf (section XII SharpDial administration interface)
9	Open SharpDial web interface from your browser: <u>http://IP:PORT/SharpDial</u> and login using the default manager login credentials	SharpDial_user_guide.pdf (section XII SharpDial administration interface)
10	In the web interface go to the sites link and update the default site to match your PBX IP address and configured CDR port	SharpDial_user_guide.pdf (section XII SharpDial administration interface >> Organization administration >> Sites)
11	In the web interface, go to the Settings link >> Site Settings. Update the Frame ID and Tag ID (if needed) to match your PBX type and Process0 configuration respectively.	SharpDial_user_guide.pdf (section XII SharpDial administration interface >> Settings >> Site Setting)
12	Keep the default billing configuration,	

	or alternatively, go the 'Billing' section and update the prices/ Lines Currency. Also you can contact LIBATEL for a database script to match your country's billing patterns	
13	Grant Read permissions on the license file provided by LIBATEL than Upload it.	SharpDial_user_guide.pdf (section XII SharpDial administration interface >> Settings >> License)
14	Open Report Manager URL and validate the data source credentials. (SQL Server username and password).	SharpDial_troubleshooting guide.pdf (Report Server Error: Cannot create a connection to data source)

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