Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Libatel SharpDial with Avaya IP Office R10 to capture Call Detail Recording records - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Libatel SharpDial Call Detail Recording Solution to successfully interoperate with Avaya IP Office R10 in order to capture Station Message Detail Recording records. The SharpDial solution consists of a Call Detail Recording server based on the logging of outgoing, incoming, and internal call 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 Avaya IP Office.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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

SharpDial is a web-SQL based call accounting solution used to log outgoing, incoming and internal calls data sent by the PBX, to manage captured data and generate reports. SharpDial connects to any PBX configured to send call detail recording (CDR) on a Transmission Control Protocol (TCP) port (client or server), serial connector, through ftp or web services operations. In Avaya IP Office, Station Message Detail Recording (SMDR) is the term used for call detail recording and is often used interchangeably. When connected to Avaya IP Office R10, a parser is needed to convert the SMDR records to a format recognized by SharpDial. 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 (IPO5):** acting as a bridge, responsible for converting SMDR data from IP Office 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.

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2. General Test Approach and Test Results

The test environment comprises of Avaya IP Office R10 connected to a simulated PSTN in order to generate SMDR information for incoming, outgoing and internal calls. The information captured consists of call information originating and terminating on Avaya 16xx Series deskphones. The information on calls made and received is presented in a reporting structure by a web interface on the SharpDial server.

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

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

2.1.1. Avaya Feature Interaction Verification

This consists of the verification of the response of the SharpDial solution to IP Office.

- **Captured SMDR logged to Process0 table in the database:** Captured SMDR should be stored in Process0 Temp Table before being parsed and billed.
- **Incoming and outgoing calls over H323 and ISDN trunks. Internal calls between H323 deskphones**: Associated SMDR should be captured in the backup files.

2.1.2. SharpDial Application Functionality Verification

This consists of verification of features of the SharpDial Solution to ensure they function in an Avaya solution.

- **Parsing Validation**: Parsing should be validated. Engine Log files should be checked.
- **Billing Validation**: Billing should be validated with the applied billing schema. Engine Log files should be checked.
- **Report Testing**: Testing Outgoing Extension, Incoming Extension, and Internal reports.

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2.1.3. Failover and Serviceability Tests

This consists of verification of the response of the SharpDial solution to various failures.

- SharpDial Process0 Service stopped.
- SharpDial Server restarted.

2.2. Test Results

All tests passed successfully.

2.3. Support

Support from Avaya is available at http://support.avaya.com

Technical support from Libatel for SharpDial can be obtained at

Libatel
93, Debahy Centre,
Charles de Gaulle Avenue,
Sin el Fil,
Beirut, Lebanon
Tel.: +961 1 485160
Fax: +961 1 485172
Email: sales@libatel.com
Website: http://www.libatel.com

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3. Reference Configuration

Figure 1 shows the network topology during compliance testing. The SharpDial server collects SMDR records from IP Office and presents the information obtained to users on the LAN via an http web session.

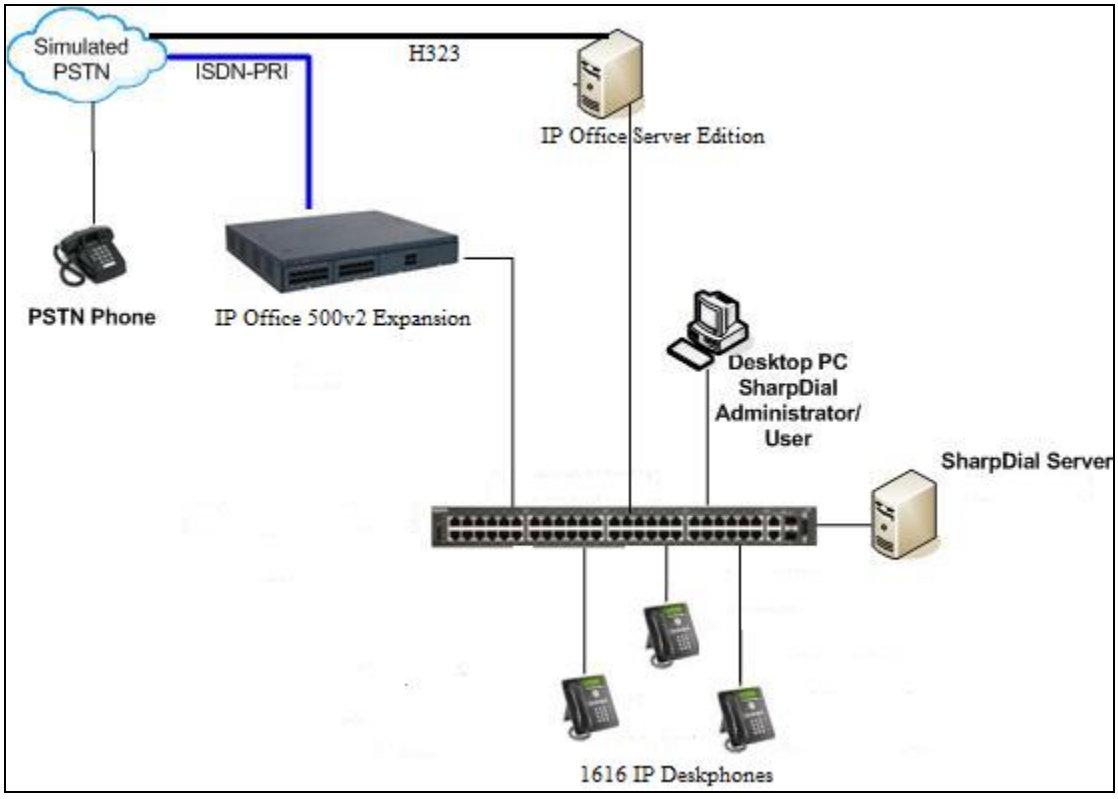

Figure 1: Configuration Diagram

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4. Equipment and Software Validated

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

Equipment Description	Software Release
*Avaya IP Office Server Edition running on VMware	10.0.0.0.0 Build 550
Avaya IP Office 500v2 Expansion	10.0.0.0.0 Build 550
Avaya H323 IP Telephones (1616)	1.390A
SharpDial Server installed on Windows 2012 R2 Server	SharpDial Package – 5.0

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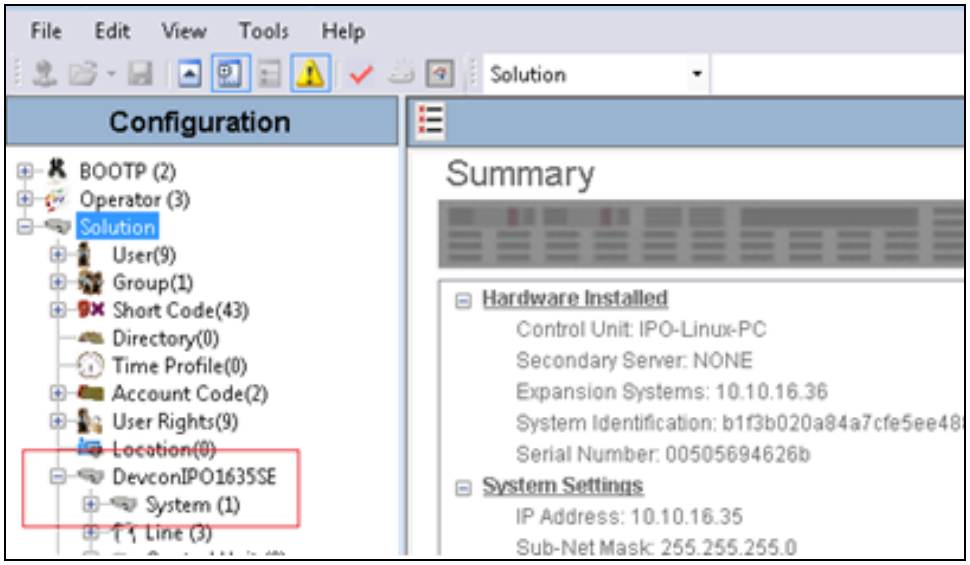
5. Avaya IP Office Configuration

Configuration and verification operations on Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. The information provided in this section describes the configuration of the Avaya IP Office for this solution. It is implied a working system is already in place. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 10**. The configuration operations described in this section can be summarized as follows:

- Launch Avaya IP Office Manager
- SMDR Configuration
- Save Configuration

5.1. Launch Avaya IP Office Manager

From the Avaya IP Office Manager PC, go to **Start→Programs→IP Office→Manager** to launch the Manager application. Log in to Avaya IP Office using the appropriate credentials to receive its configuration (not shown). In the IP Offices window, expand the Configuration Tree and double-click **System**. During compliance testing the System was called **DevconIPO1635SE**.



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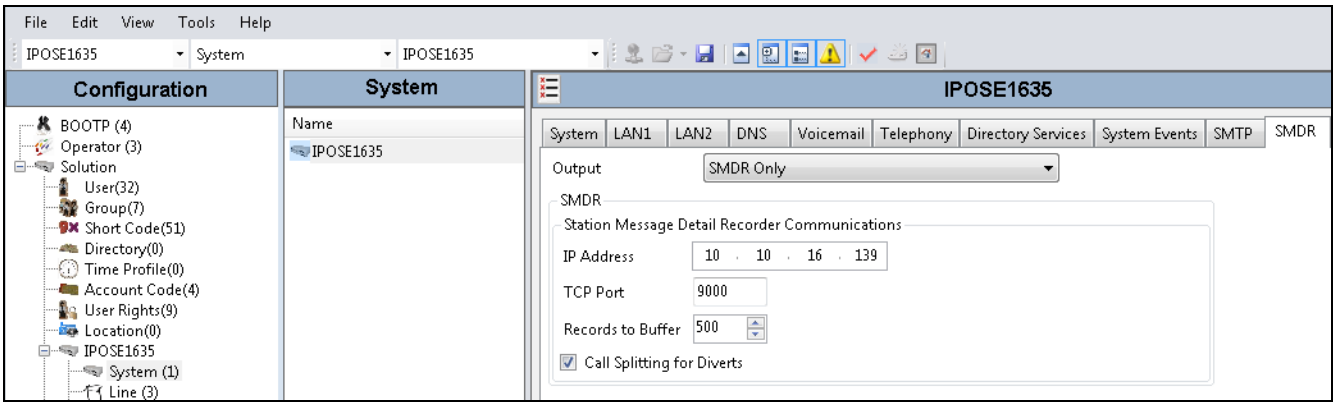
5.2. SMDR Configuration

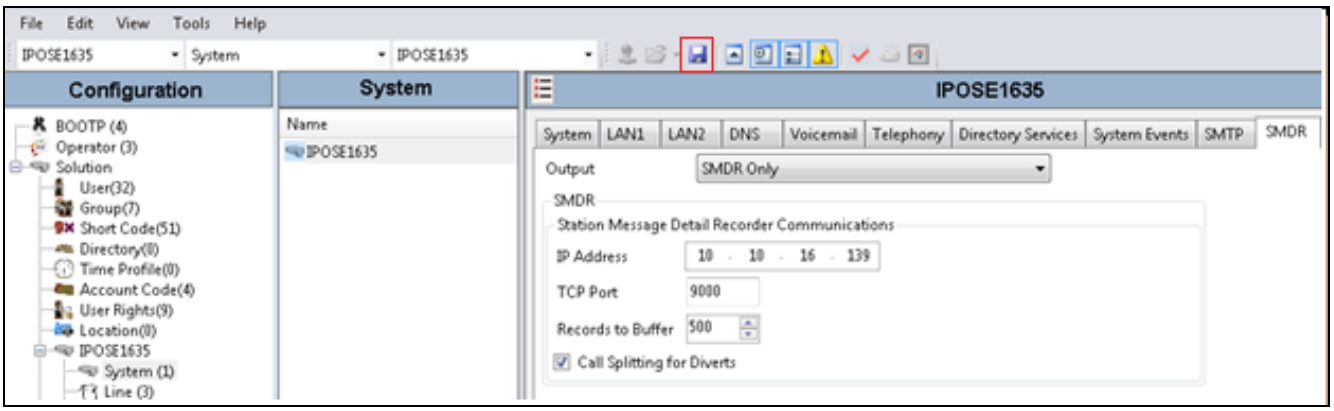
Select the **SMDR** tab and enter the following information:

- **Output** Select **SMDR Only** from the drop box
- **IP Address** Enter the IP Address of the Sharpdial Server
- **TCP Port** Enter **9000**
- **Records to Buffer** Can be left as the default.
- Check the **Call Splitting for Diverts** Check box
- Click the **OK** button to save (not shown).



5.3. Save Configuration

Once all the configurations have been made it must be sent to the IP Office. Click on the **Save** icon as shown below.



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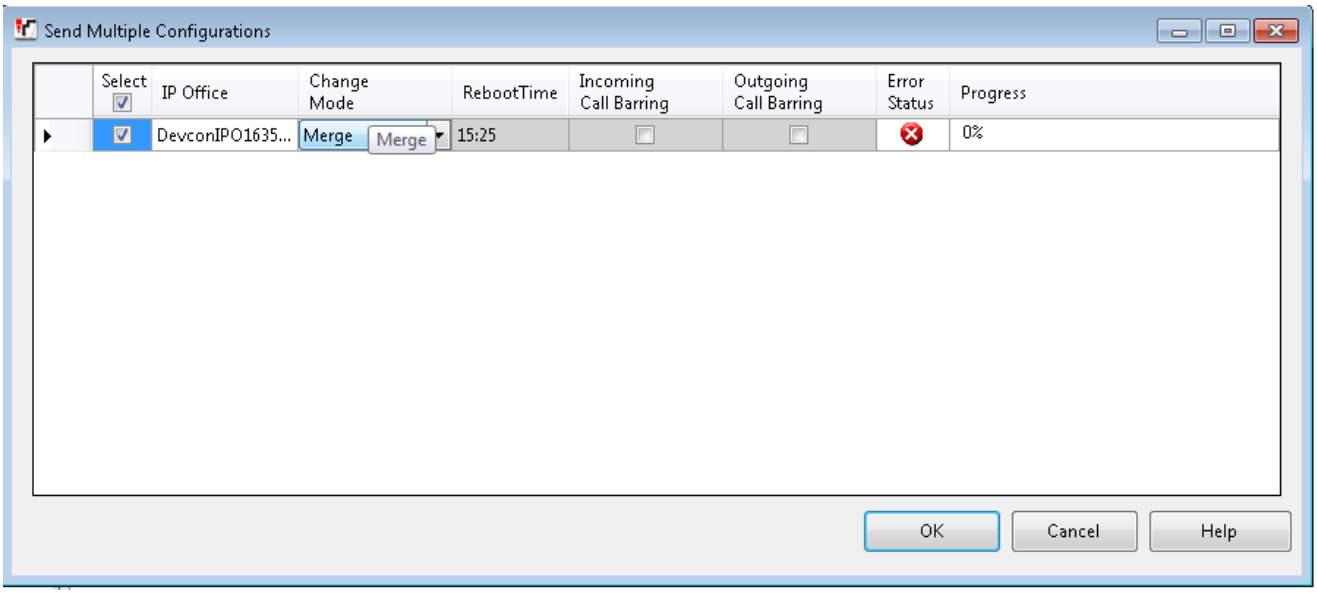
Once the **Send Multiple Configurations** indow opens, click the **OK** button.



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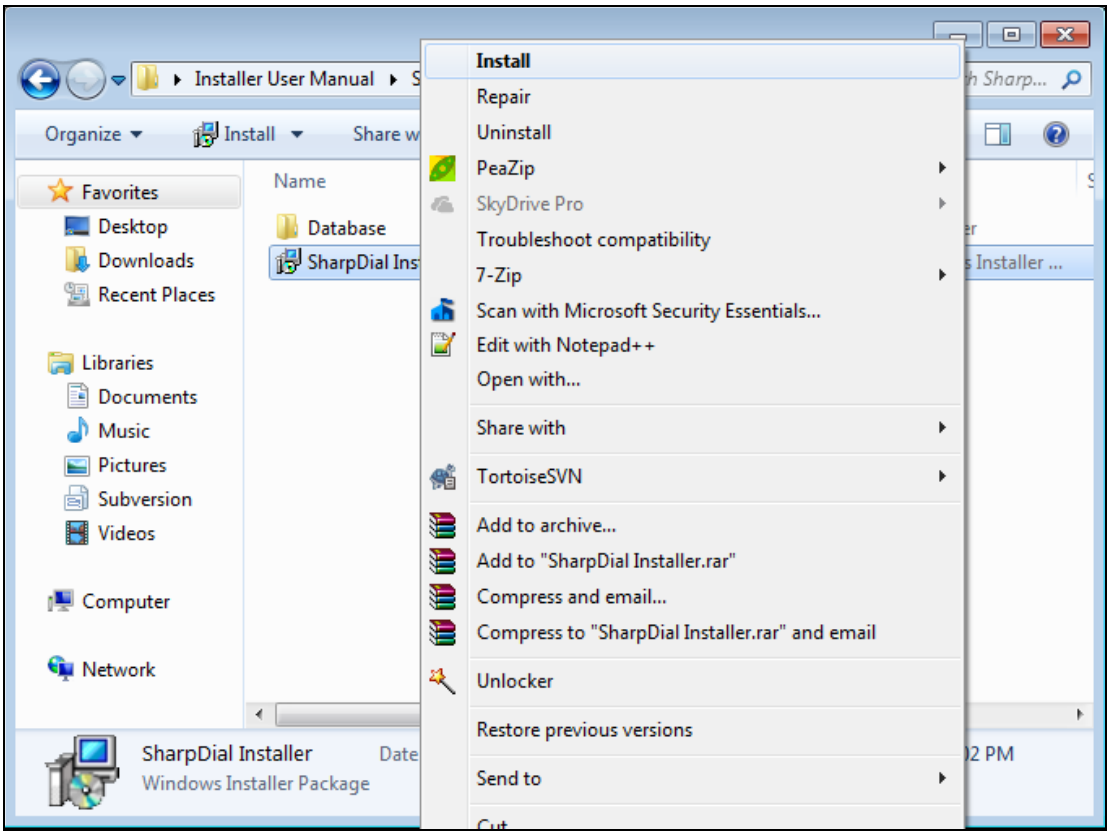
6. Configuration of the Libatel SharpDial Server

The configuration of Windows 2012 R2 Server and the installation of any prerequisite software on the SharpDial server are outside the scope of these Application Notes. It is assumed that the server is prepared for installation. Refer to the product documentation in **Section 10** for further details.

6.1. Libatel SharpDial Components Installation

The installation of SharpDial includes connection requirements specific to IP Office and will be outlined in this section. To manually install the SharpDial call accounting software, run the **SharpDial Installer.msi** file. Right click on SharpDial Installer.msi setup icon and click **Install** as shown below.



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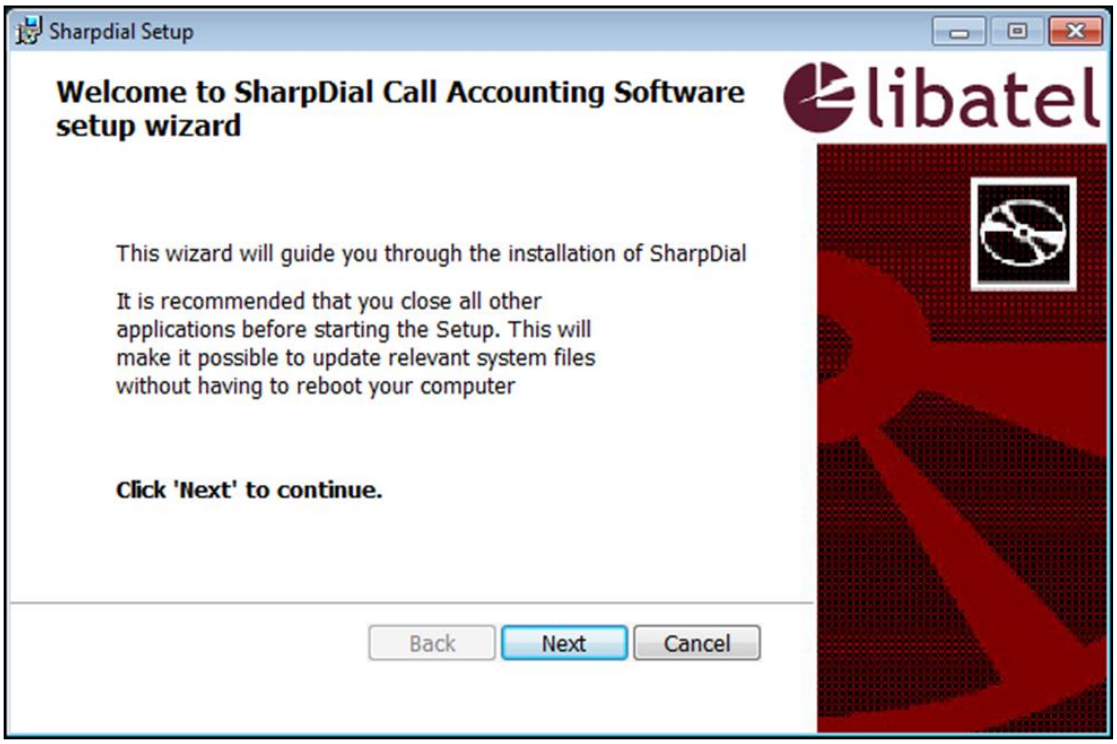
The system displays a **Welcome to SharpDial Call Accounting Software setup wizard** screen. Press **Next** to continue.



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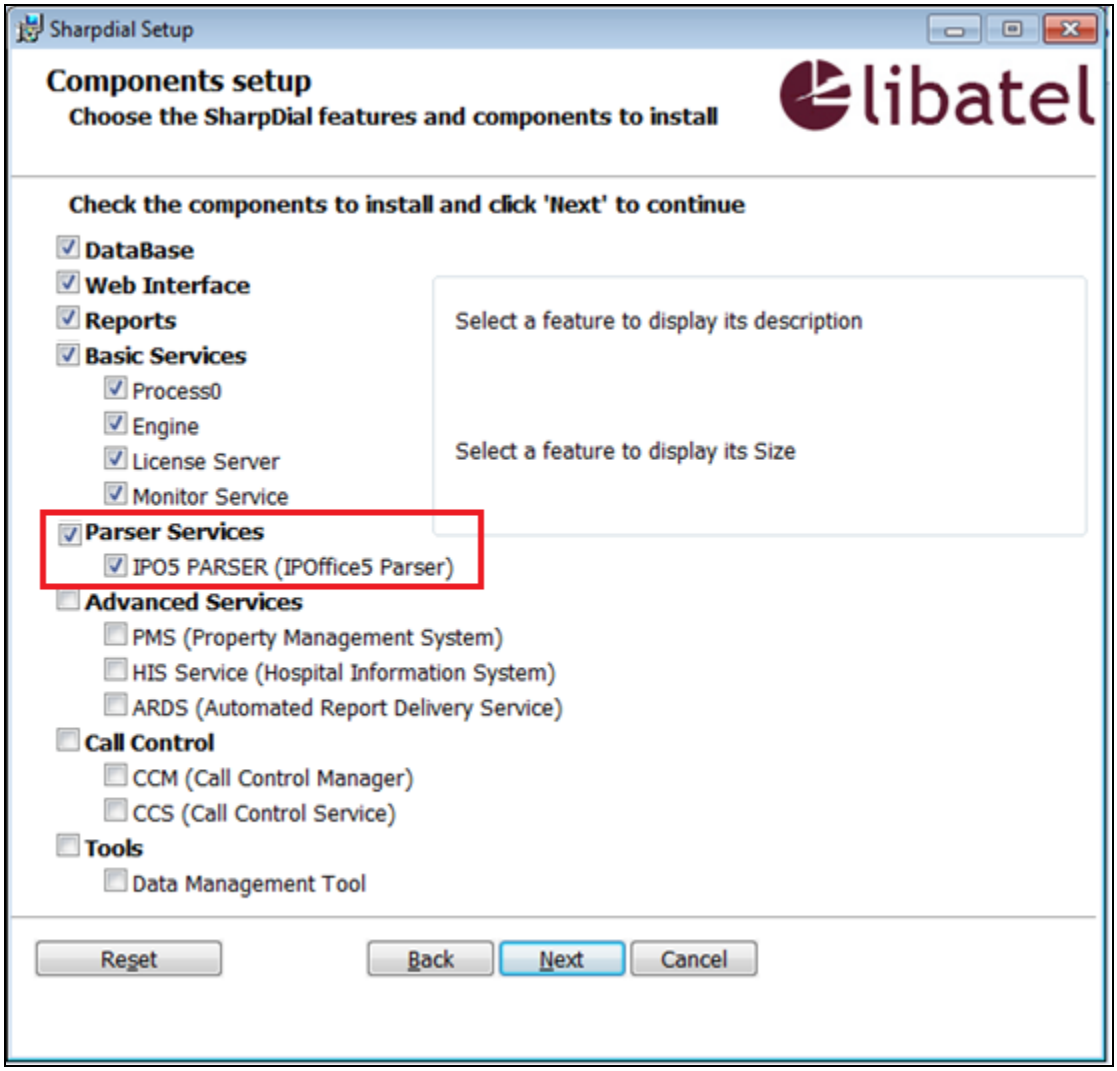
The system displays **Components setup** screen. Keep the default selections and for IP Office, include the **IPO5 PARSER** under **Parser Services** Node. This is for converting SMDR data from IP Office into standard format, recognized by the SharpDial engine. Press **Next** to continue.



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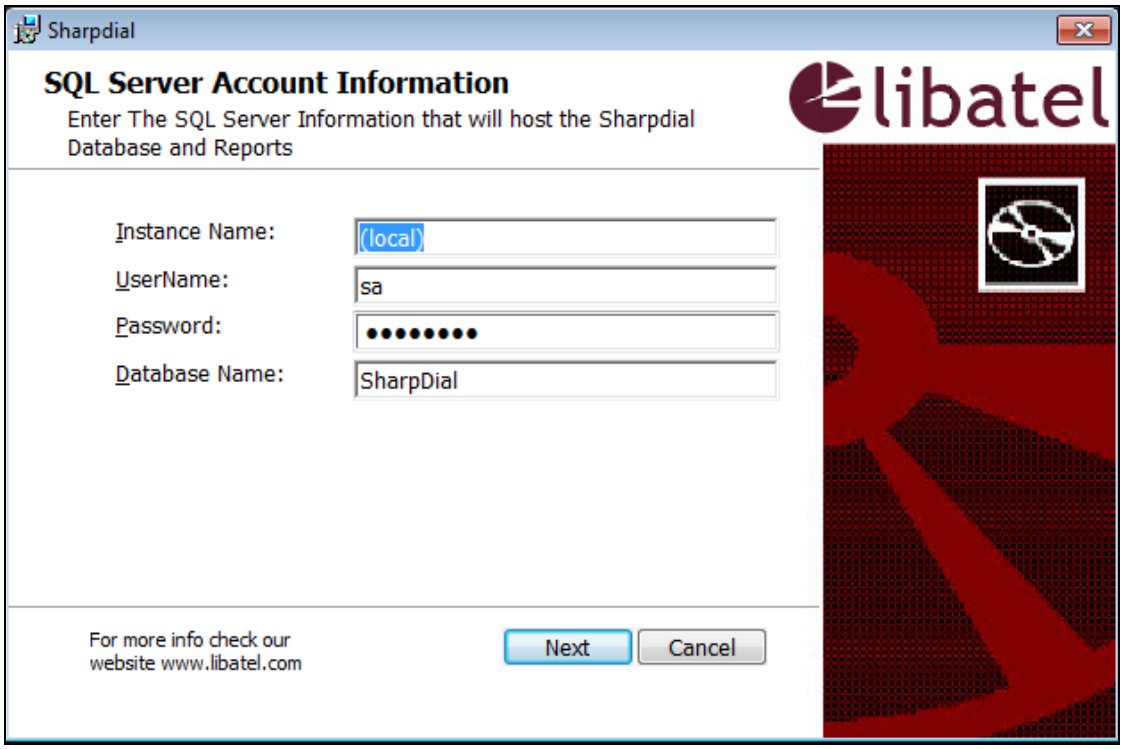
The **SQL Server Account Information** screen appears. Enter an administrative account for the SQL server that will host the Database and Reports.

In the example below, the SQL **Instance Name** of **(local)** was used. The SQL database administrative **sa** account/password was used for **UserName** and **Password**. The SQL **Database Name** used is **SharpDial**.
Press **Next** to continue.



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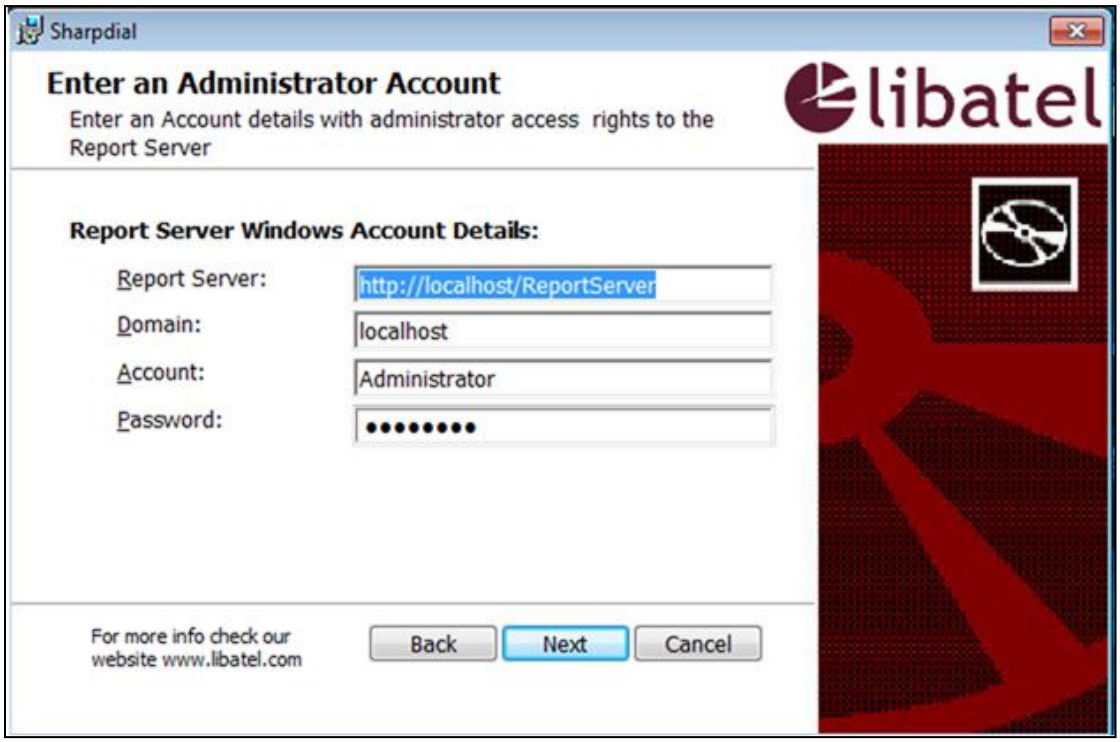
The **Enter an Administrator Account** screen appears. Configure the Report Server login/domain credentials. If no domain configuration is required, keep the default **localhost** value.
Press **Next** to continue.



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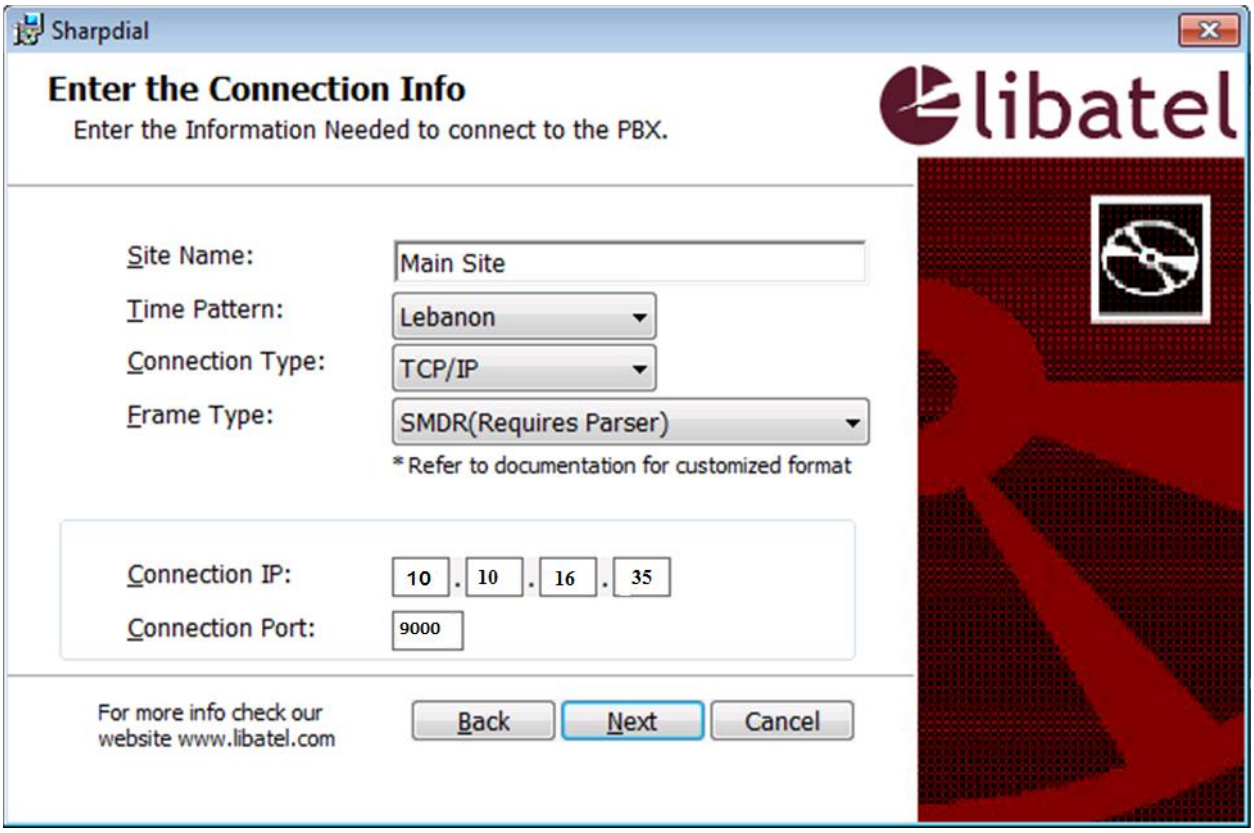
The **Enter Connection Info** screen appears. Configure theconnection details of IP Office for the Libatel PBX connection as described below:

- **Site Name:** Description of the PBX site's name. Choose the PBX branch name, or keep the default value **Main Site**. This can be changed later on from the SharpDial Administration interface.
- **Time Pattern:** Displays the different call pricing protocols according to different countries and states
- **Connection Type: TCP/IP**
- **Frame Type: SMDR(Requires Parser)** (Make sure that **IPO5 PARSER** under **Parser Services** node is selected from components selection screen earlier)
- **Connection IP:** IP Office IP address
- **Connection Port:** Socket port number matching the configured SMDR port on IP Office (see **Section 5.1**).

Press **Next** to continue.



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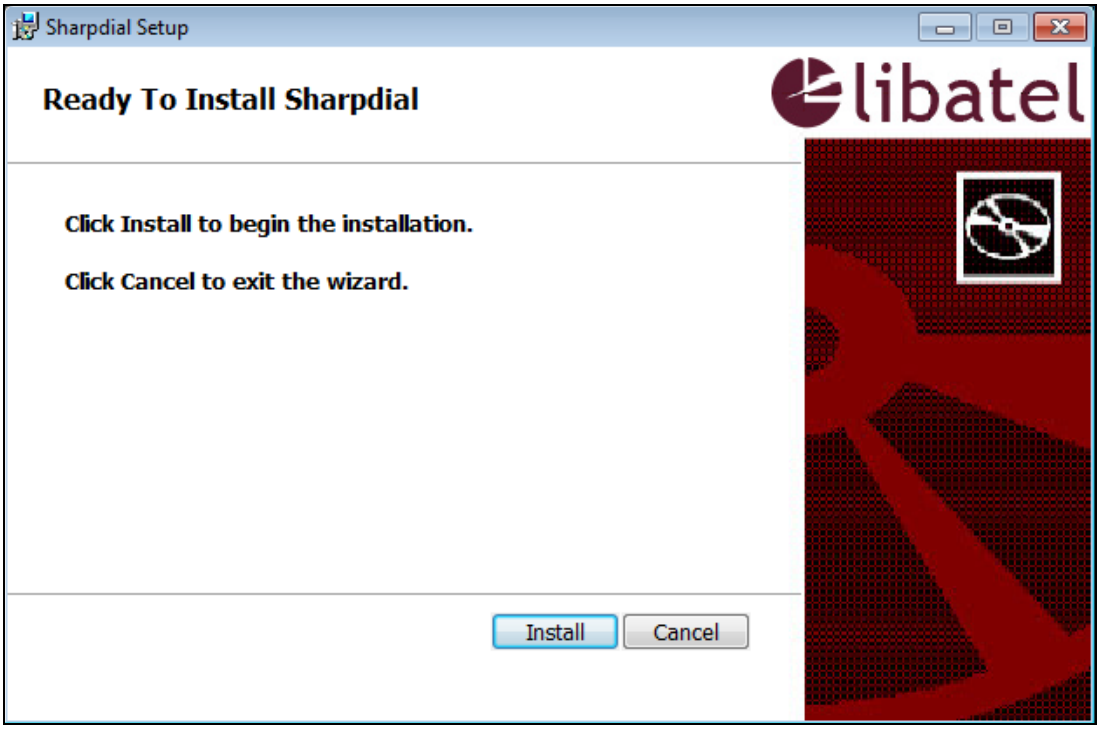
The **Ready To Install SharpDial** screen will appear.
Press **Install** to continue.



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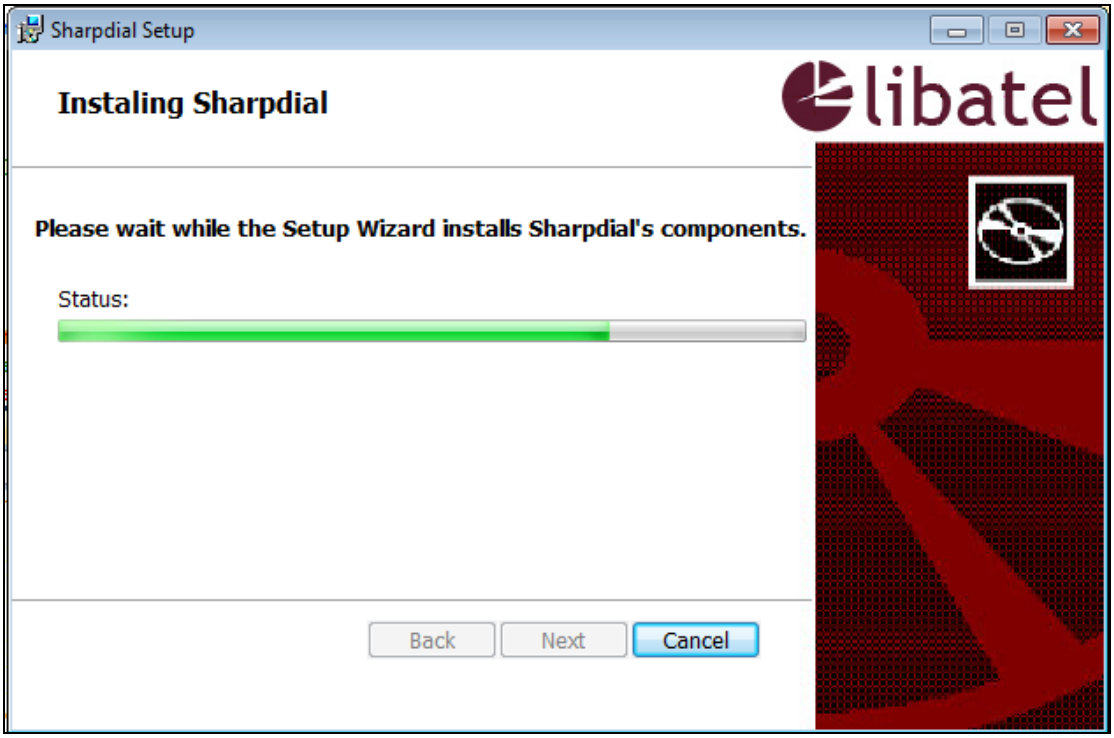
SharpDial installs by default in the following directories:

<c:\> client hard drive
Program Files
SharpDial
Engine
Sharpdial_X.X.exe
SharpDial_X_X.config
Email Service
SharpDial_ES_X.X.exe
SharpDial_ES_X_X.config
Parser Service
SharpDial_Parser_*PBXTYPE*_X.X.exe
SharpDial_Parser_*PBXTYPE*_X.X.config
Process 0 Service
SharpDial_*P0*_X.X.exe
SharpDial _*P0*_X.X.config
Monitor Service
SharpDial_MS_X.X.exe
SharpDial_MS_X_X.config

The **Ready To Install SharpDial** screen will appear.



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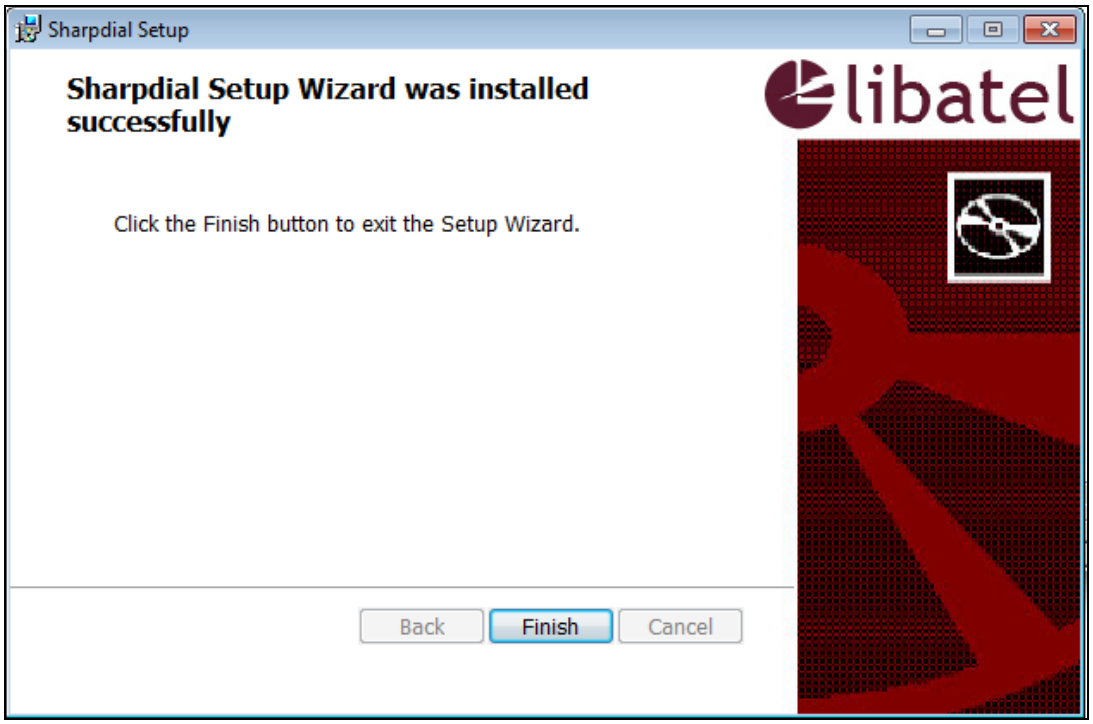
The **SharpDial Setup Wizard was installed successfully** screen will appear.
Click **Finish** to complete.



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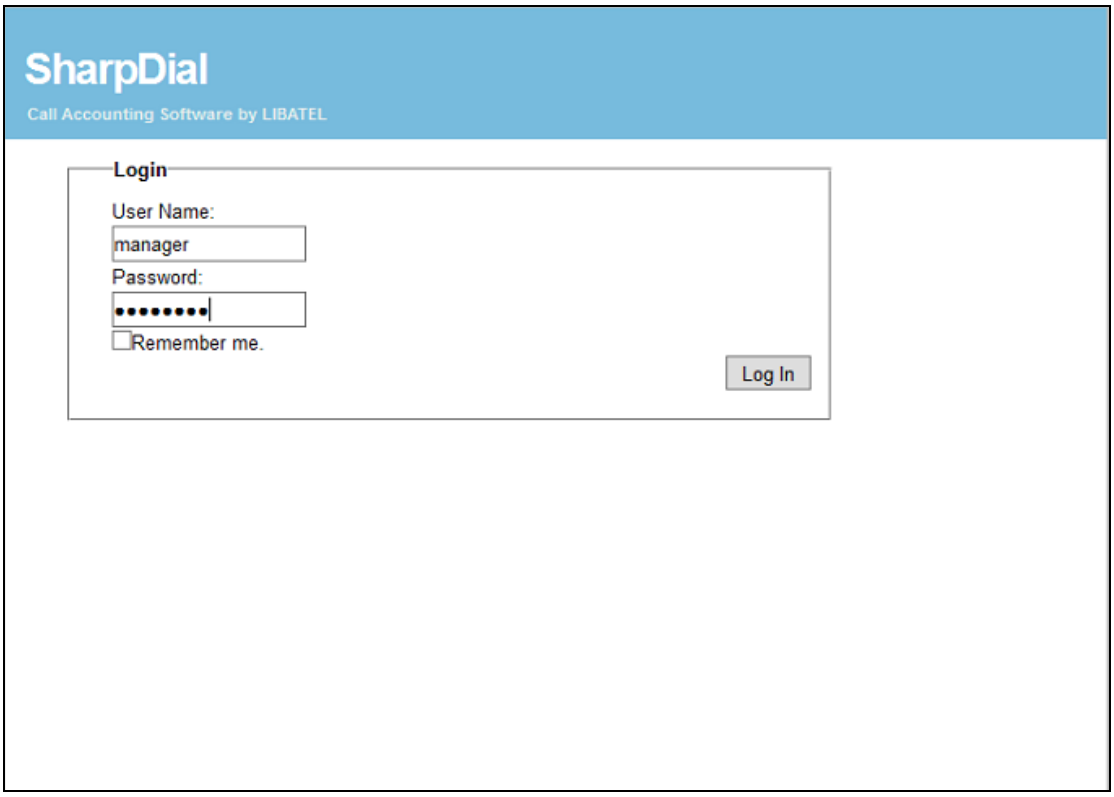
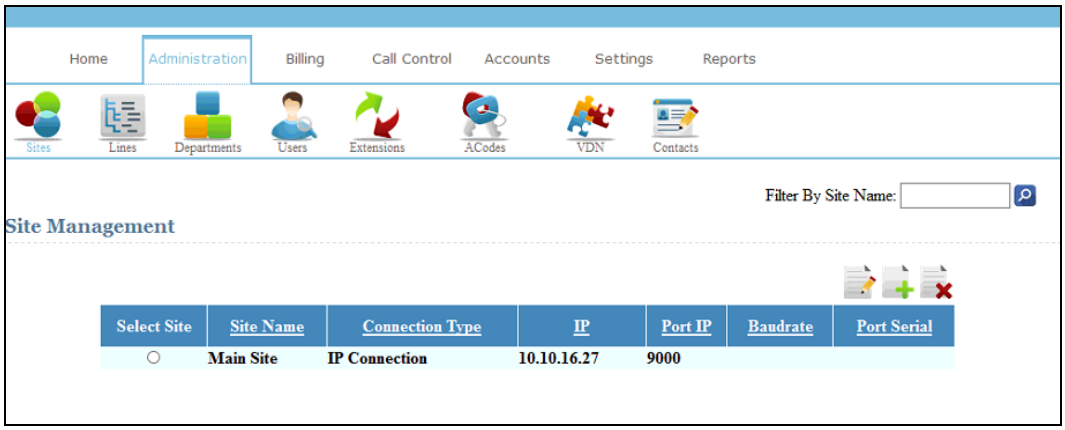
7. Configuring Libatel SharpDial through Web Interface

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



Under **Administration** in the menu 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 the **Edit** icon. The information highlighted below is automatically populated as was configured in **Section 6.1.**



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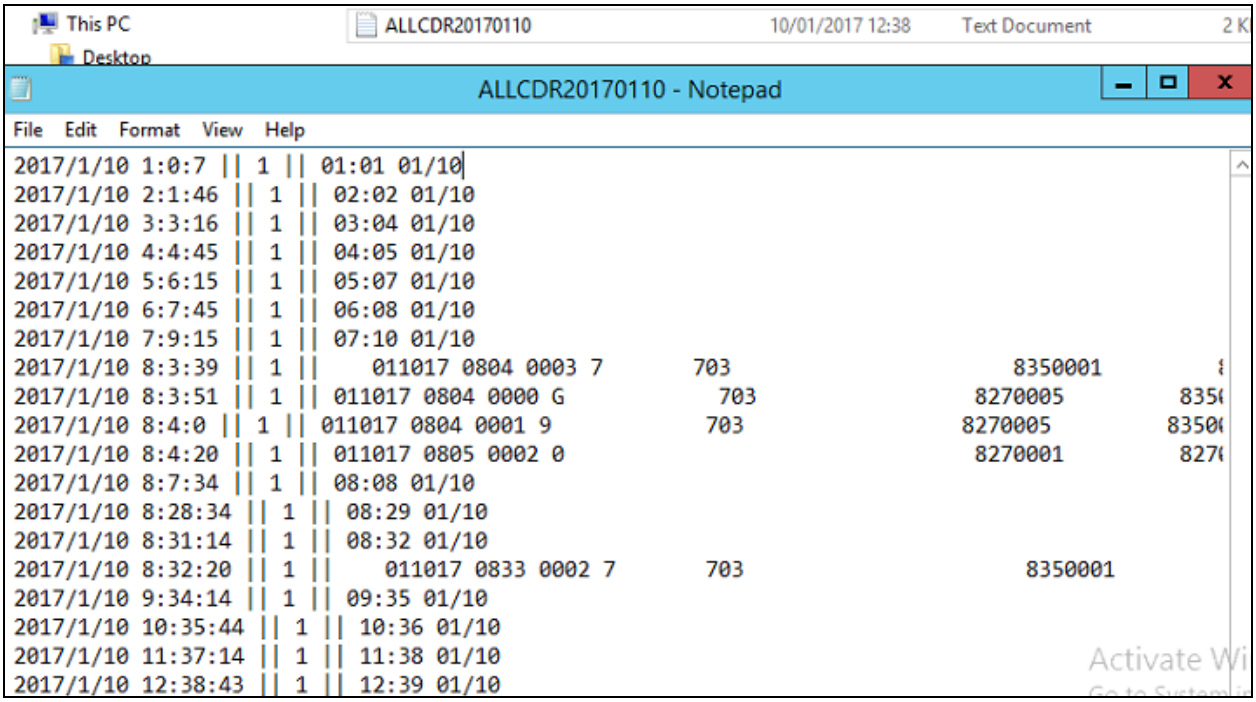
8. Verification Steps

The following steps can be taken to ensure that IP Office is sending SMDR data and to show that the SharpDial server is receiving this data and processing it properly.

8.1. Verify that SMDR data is being received by the Libatel SharpDial Server

Log onto the SharpDial server and check that raw SMDR data is being correctly parsed into the CDR backup files. Open the CDR backup file located in **C:/ProgramFiles(x86)/SharpDial/ IPO5 Parser/Logs**. The information on recent calls should be visible as shown below.



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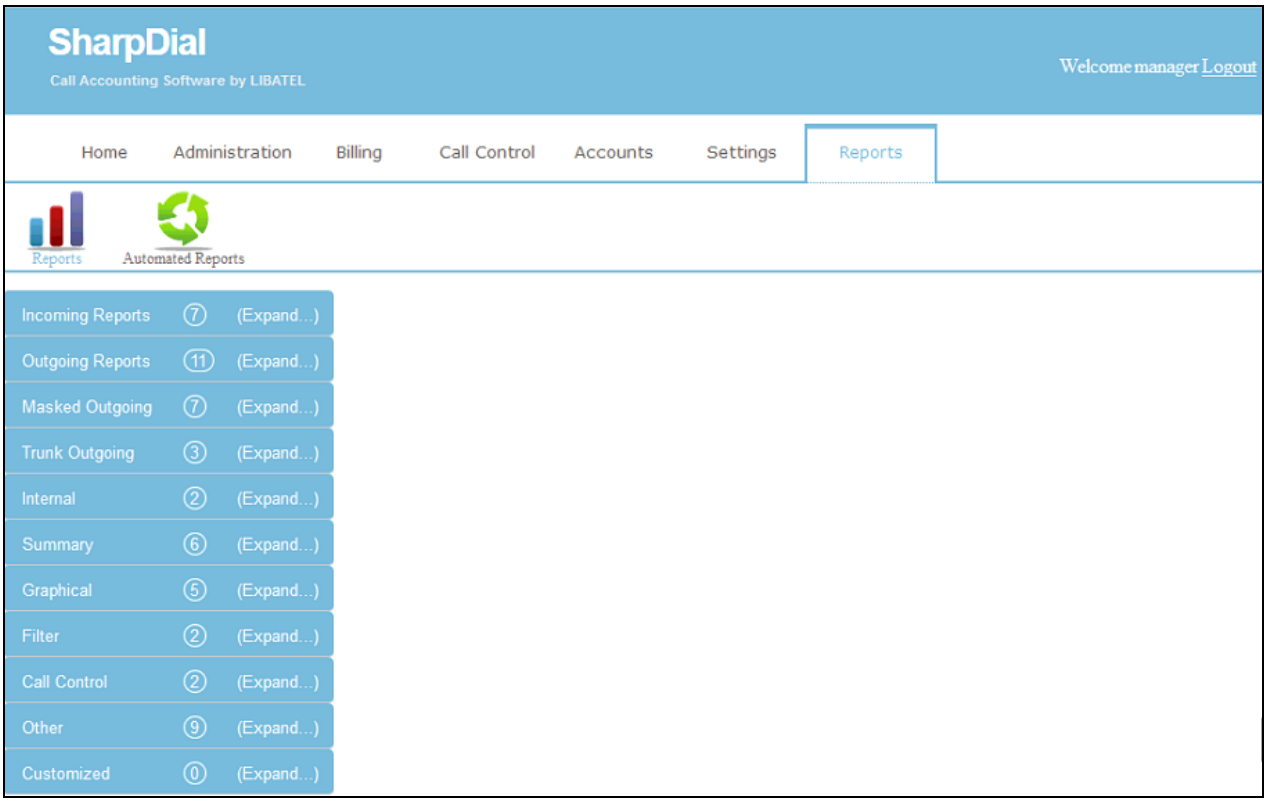
8.2. Verify that Libatel's SharpDial is producing reports on SMDR information correctly

Use the reporting tool on the Web Interface to create a CDR report by logging onto http://<sharpdial Server IP>/sharpdial/reportinguser/login.aspx and click on the **Reports** in the reports section in the menu of the page as shown below.



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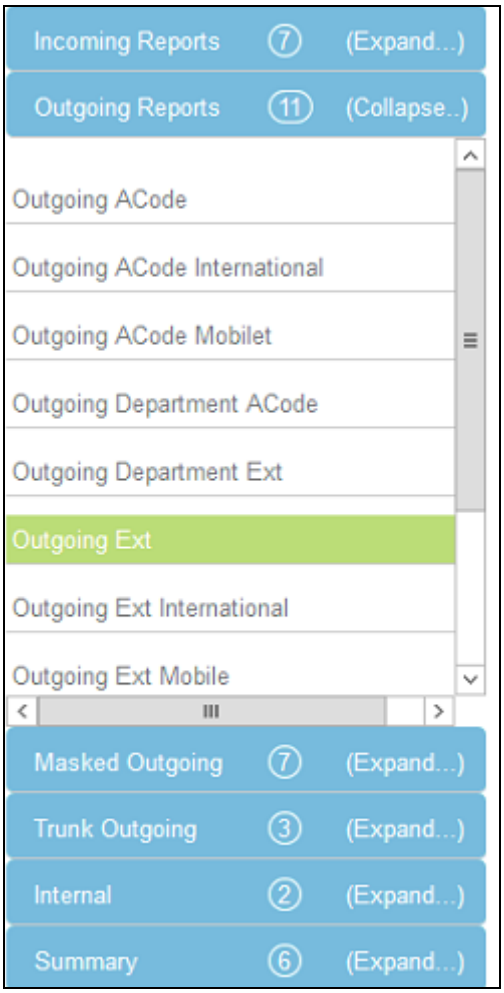
There are a number of reports that can be run. In the example below **Outgoing Ext** is selected from the **Outgoing Reports** section.



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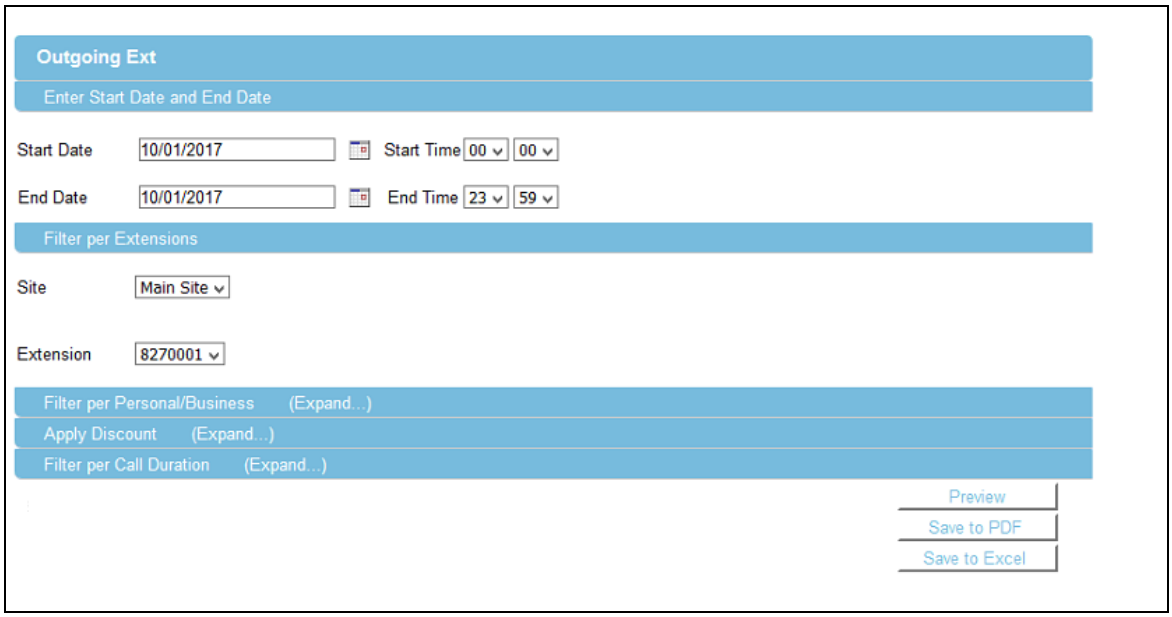
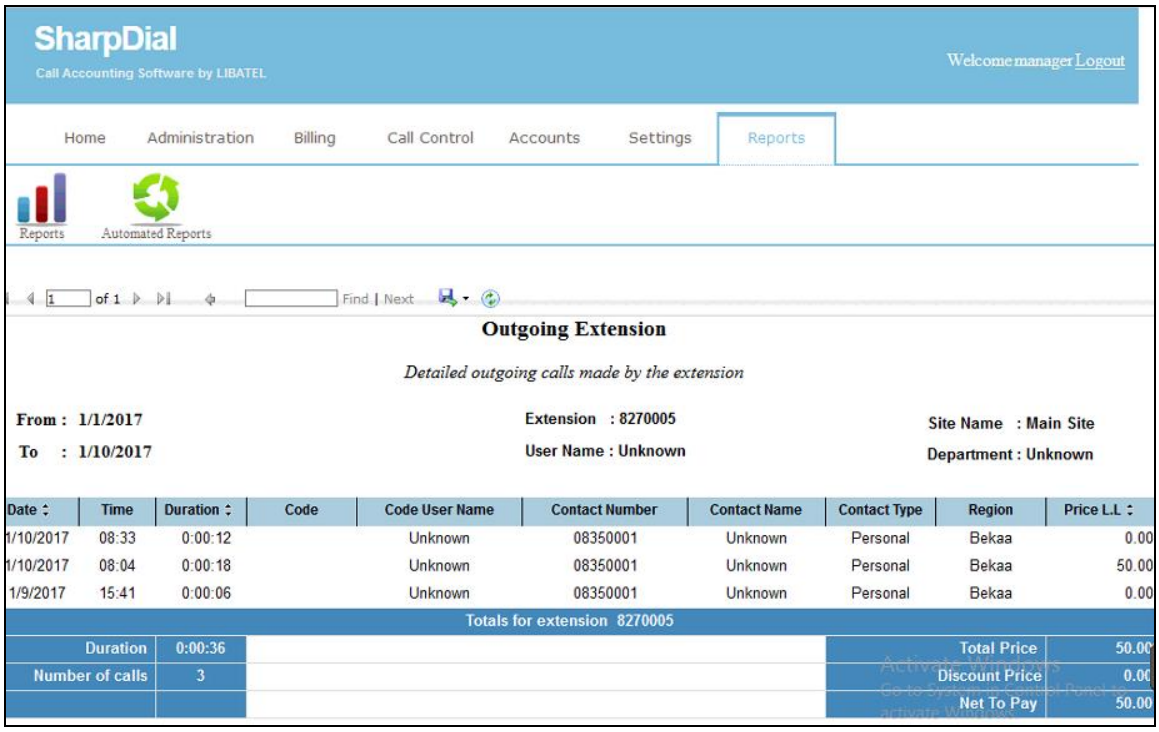
Select the **Start Date** and **End Date** that are for this report to and the extension to generate the report on. In this example, there one site called **Main Site** and the extension for the report was **8270001.**
Click **Preview**



Below is an example of an **Outgoing Extentsion** report.



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9. Conclusion

These Application Notes describe the configuration to successfully interoperate Libatel SharpDial Call Detail Recording Solution with with Avaya IP Office R10. All test cases were completed successfully.

10. Additional References

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

[1] *IP Office R10 Doc library*

All information on the product installation and configuration of SharpDial can be requested from Libatel.

[2] *SharpDial – Prerequisites Installation guide,* Version 5.1, 2015

[3] *SharpDial Installation Checklist*, Version 2.0

[4] *SharpDial Step By Step Installation guide*, Version 5.1

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