



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Libatel SharpDial with Avaya Aura® Communication Manager 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: libatel@libatel.com
Website: <http://www.libatel.com>

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.

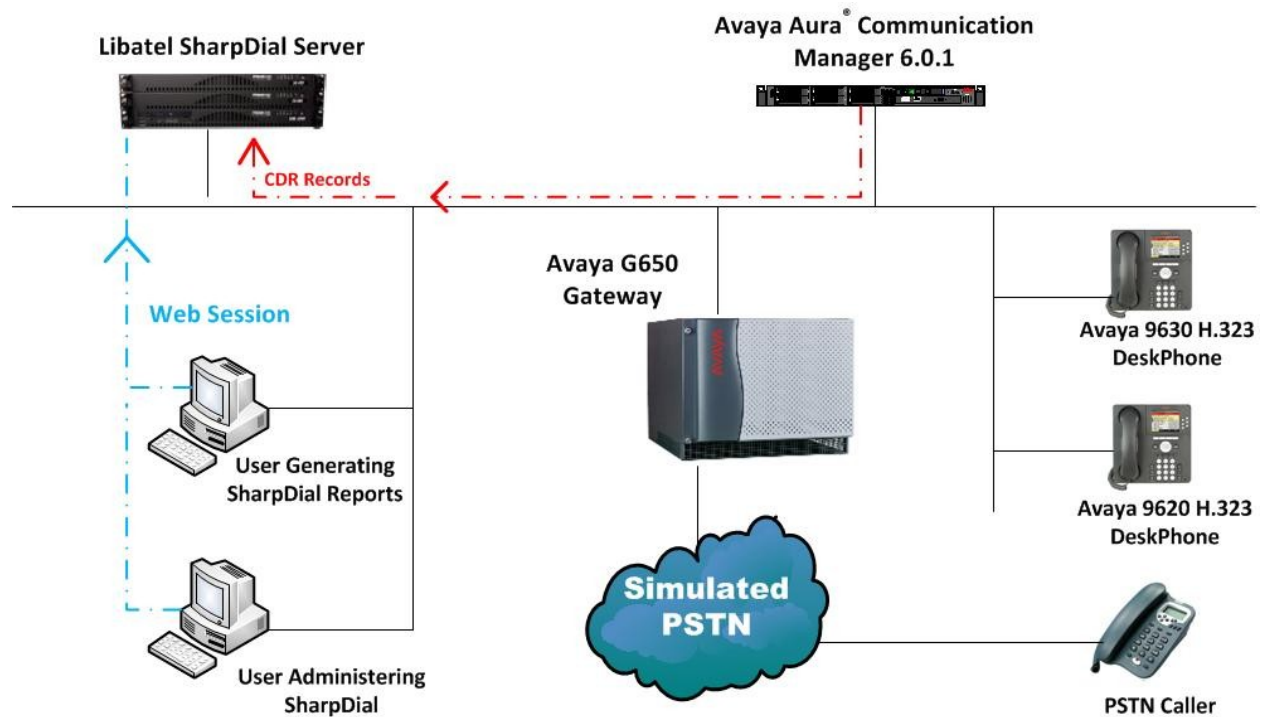


Figure 1: Connection of Libatel SharpDial and Avaya Aura® Communication Manager R6.0.1

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 [®] 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 Sever (SharpDial)	Libatel SharpDial Process0 Service V4.3.2 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			
		IP SERVICES			
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
CDR1		CLAN	0	CDR_Server	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 Incoming? n	Record Agent ID on Outgoing? y	
Inc Trk Call Splitting? n	Record Non-Call-Assoc TSC? 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 **system-parameters cdr**.

change system-parameters cdr		Page 2 of 2
CDR SYSTEM PARAMETERS		
Data Item - Length	Data Item - Length	Data 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 **r** in the trunk group used for outgoing/incoming calls. Type **change trunk-group x** where **x** is the number of the incoming/outgoing trunk group.

change trunk-group 9		Page 1 of 21	
TRUNK GROUP			
Group Number: 9	Group Type: isdn	CDR Reports: r	
Group Name: SharpDial	COR: 1	TN: 1	TAC: *19
Direction: two-way	Outgoing Display? n	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			

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-switch-cdr		Page 1 of 3	
INTRA-SWITCH CDR			
	Assigned Members: 8	of 5000 administered	
Extension	Extension	Extension	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

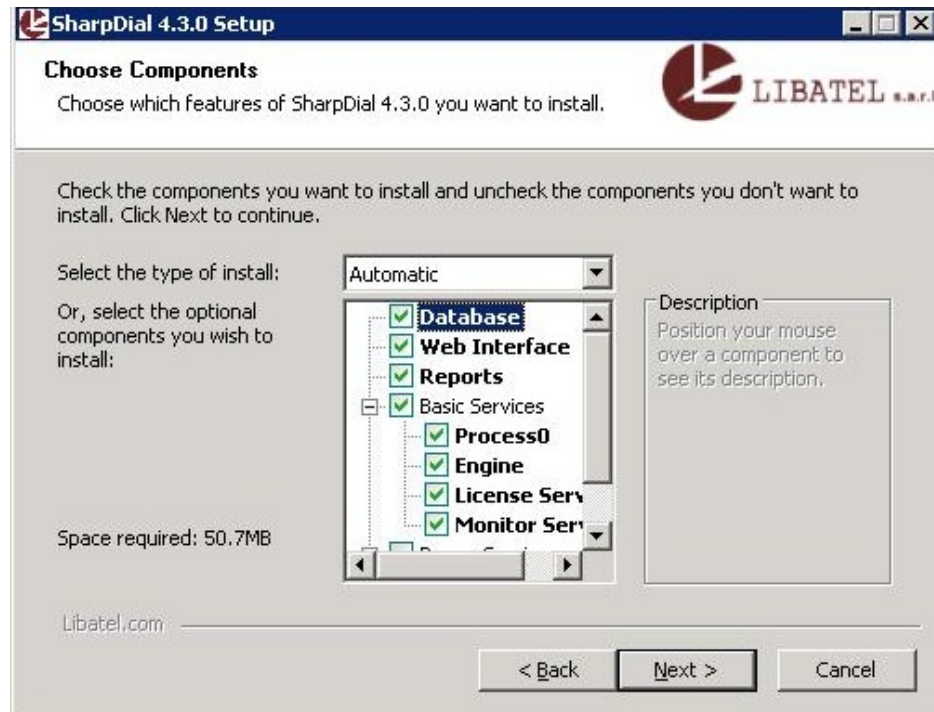
The installation of SharpDial includes connection requirements specific to the Communication Manager and will be outlined in this section. To manually install the SharpDial call accounting software:

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

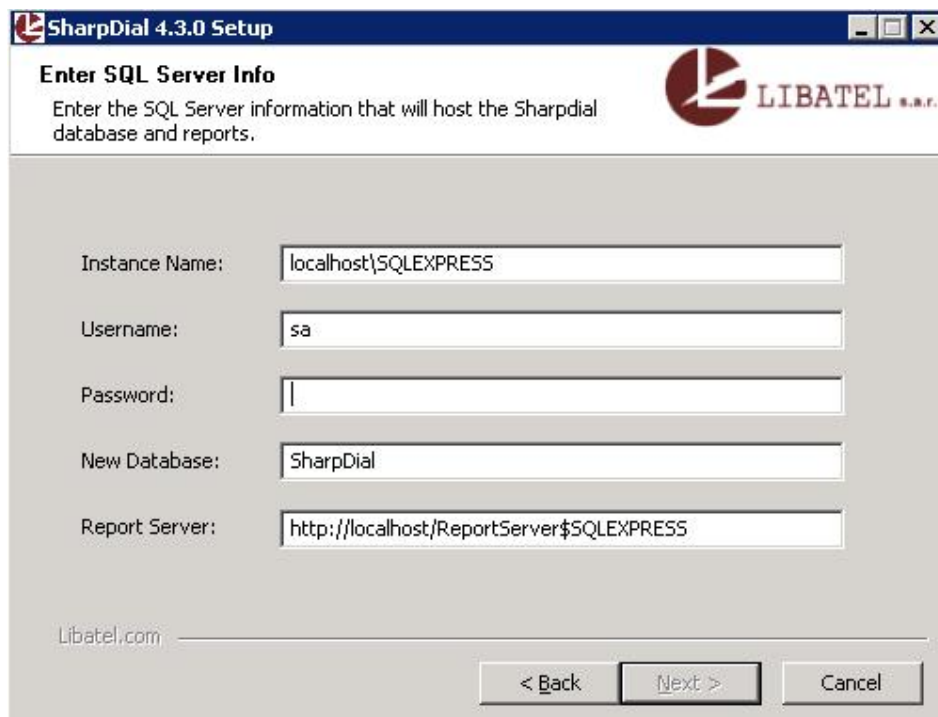
The system displays a welcome screen. Press **Next** to continue.



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



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



Configure the **Report server** login/domain credentials. If no domain configuration is required, keep the default **localhost** value.



The screenshot shows the 'Enter Administrator Account' window of the SharpDial 4.3.0 Setup application. The window has a title bar with the application name and standard Windows window controls. Below the title bar, there is a header section with the application logo and name. The main area contains a label 'Report server windows account details:' followed by three input fields: 'Domain:' with the value 'localhost', 'Account:' with the value 'Administrator', and 'Password:' with a masked password. At the bottom, there is a 'Libatel.com' link and three buttons: '< Back', 'Next >', and 'Cancel'.

SharpDial 4.3.0 Setup

Enter Administrator Account
Enter an account and password that has admin access to the report server.

Report server windows account details:

Domain: localhost

Account: Administrator

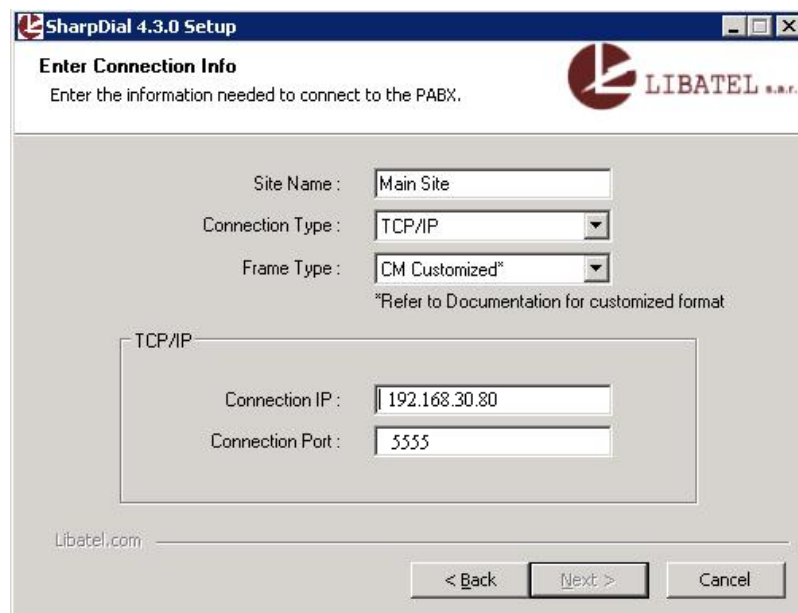
Password: •

Libatel.com

< Back Next > Cancel

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**



The screenshot shows the 'Enter Connection Info' window of the SharpDial 4.3.0 Setup application. The window has a title bar with the application name and standard Windows window controls. Below the title bar, there is a header section with the application logo and name. The main area contains a label 'Enter the information needed to connect to the PABX.' followed by four input fields: 'Site Name:' with the value 'Main Site', 'Connection Type:' with a dropdown menu showing 'TCP/IP', 'Frame Type:' with a dropdown menu showing 'CM Customized*', and a note '*Refer to Documentation for customized format'. Below these fields, there is a section labeled 'TCP/IP' containing two input fields: 'Connection IP:' with the value '192.168.30.80' and 'Connection Port:' with the value '5555'. At the bottom, there is a 'Libatel.com' link and three buttons: '< Back', 'Next >', and 'Cancel'.

SharpDial 4.3.0 Setup

Enter Connection Info
Enter the information needed to connect to the PABX.

Site Name : Main Site

Connection Type : TCP/IP

Frame Type : CM Customized*

*Refer to Documentation for customized format

TCP/IP

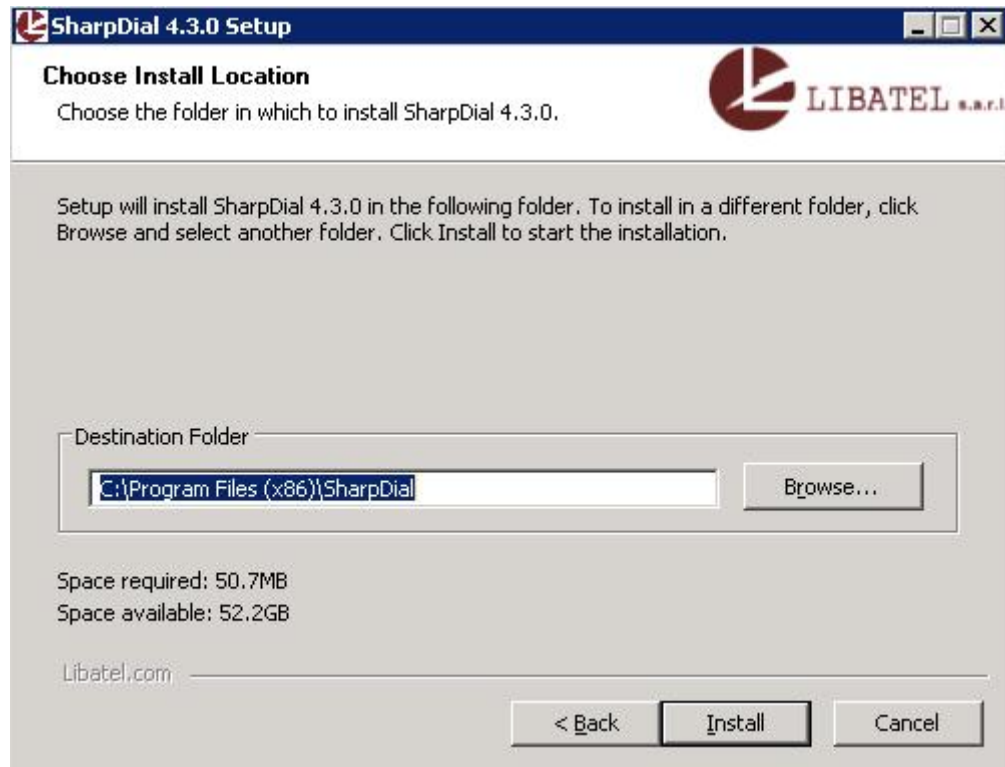
Connection IP : 192.168.30.80

Connection Port : 5555

Libatel.com

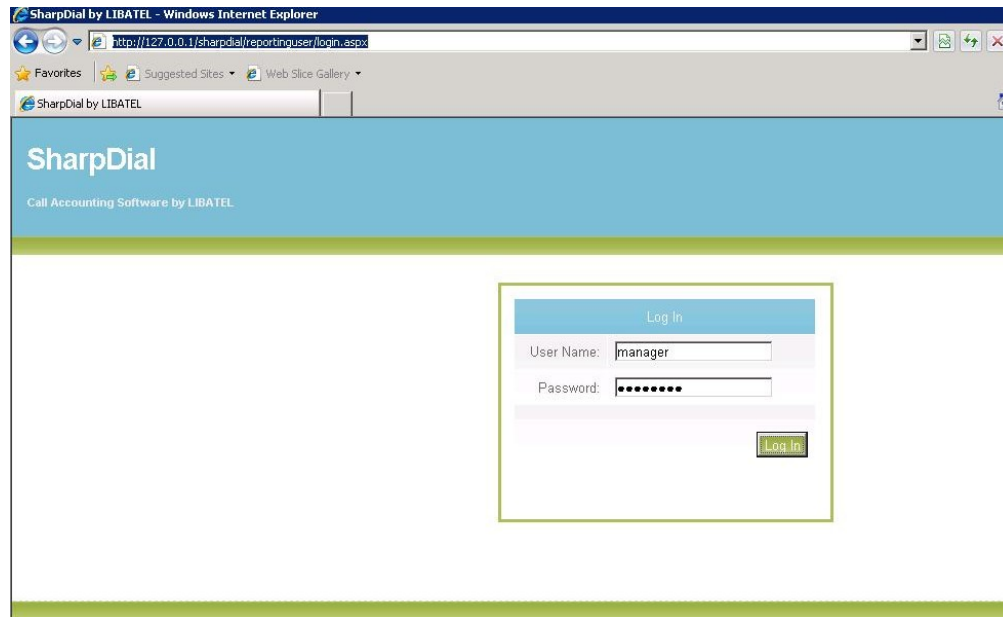
< Back Next > Cancel

Select the **Destination Folder** and click **Install** to complete the installation.

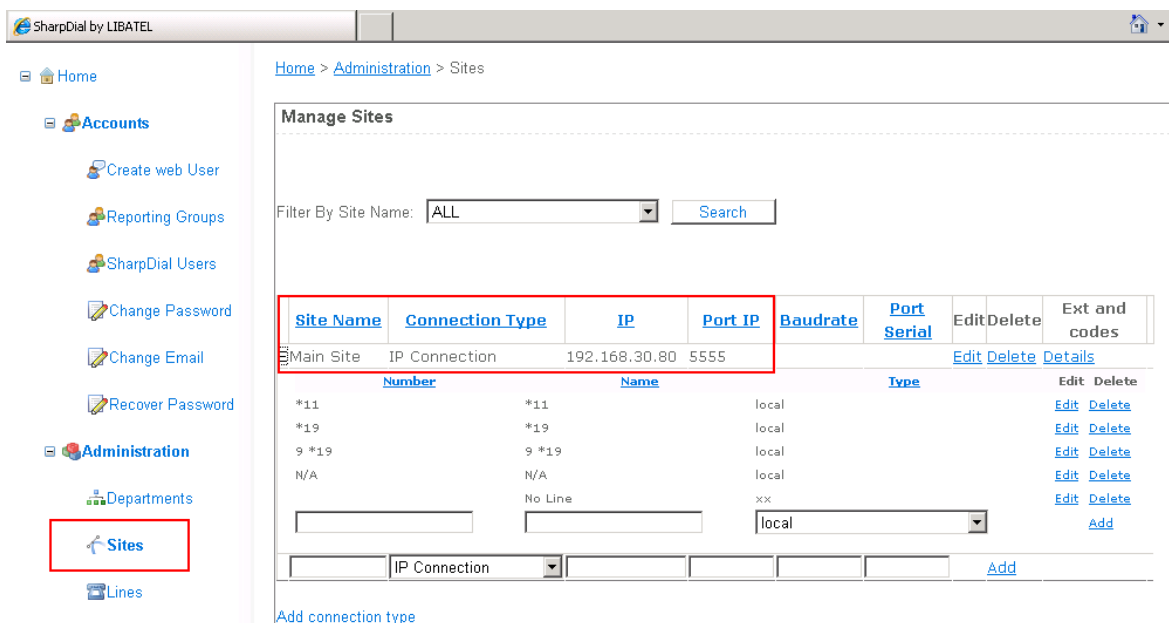


7. Configuring Libatel SharpDial through Web Interface

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



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**.



Home > Administration > Sites

Manage Sites

Filter By Site Name:

Site Name	Connection Type	IP	Port IP	Baudrate	Port Serial	Edit	Delete	Ext and codes
Main Site	IP Connection	192.168.30.80	5555			Edit	Delete	Details
Number Name Type								
*11	*11	local				Edit	Delete	
*19	*19	local				Edit	Delete	
9 *19	9 *19	local				Edit	Delete	
N/A	N/A	local				Edit	Delete	
	No Line	xx				Edit	Delete	
		local				Add		
	IP Connection					Add		

[Add connection type](#)

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	CDR not administered
Date & Time: 2011/11/02 11:11:02	0000/00/00 00:00:00
Forward Seq. No: 0	0
Backward Seq. No: 0	0
CDR Buffer % Full: 0.00	0.00
Reason 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.

The screenshot displays a Windows Explorer window with the address bar showing the path: Local Disk (C:) > Program Files (x86) > SharpDial > Process0 > CDRBackup. The file list contains several text documents named ALLCDR20110914 through ALLCDR20110921. The file ALLCDR20110920 is selected and highlighted with a red box. Below the file list, a Notepad window titled 'ALLCDR20110920 - Notepad' is open, showing a log of CDR data for 2011/9/20. The log includes columns for time, line number, and various data fields, with some entries highlighted in yellow.

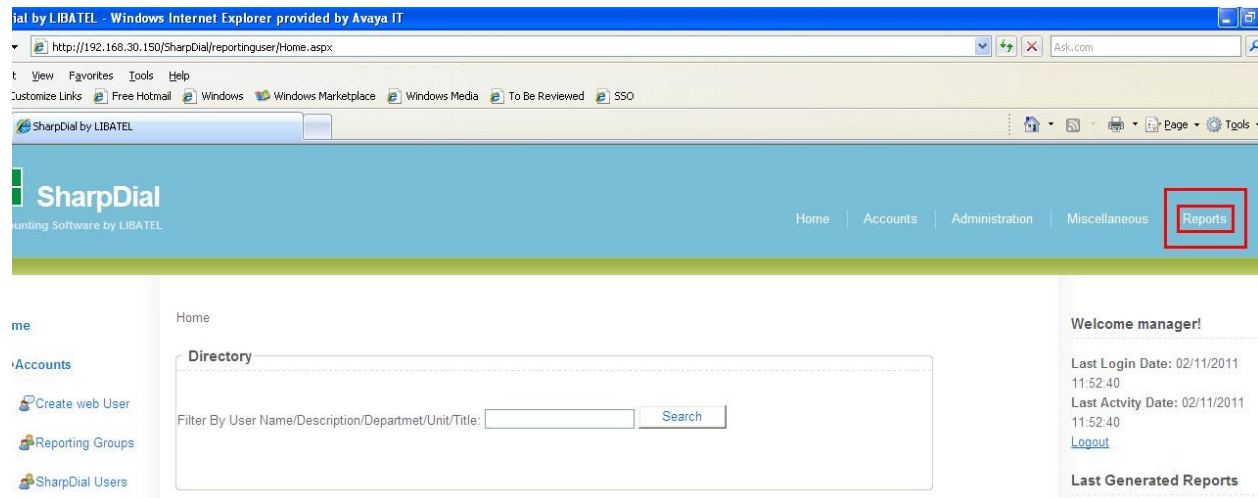
Name	Date modified	Type	Size
ALLCDR20110914	14/09/2011 23:20	Text Document	8 KB
ALLCDR20110915	15/09/2011 23:11	Text Document	1 KB
ALLCDR20110916	16/09/2011 22:43	Text Document	7 KB
ALLCDR20110917	17/09/2011 23:08	Text Document	1 KB
ALLCDR20110918	18/09/2011 23:30	Text Document	1 KB
ALLCDR20110919	19/09/2011 22:11	Text Document	5 KB
ALLCDR20110920	20/09/2011 23:45	Text Document	6 KB
ALLCDR20110921	21/09/2011 23:28	Text Document	1 KB

ALLCDR20110920 - Notepad

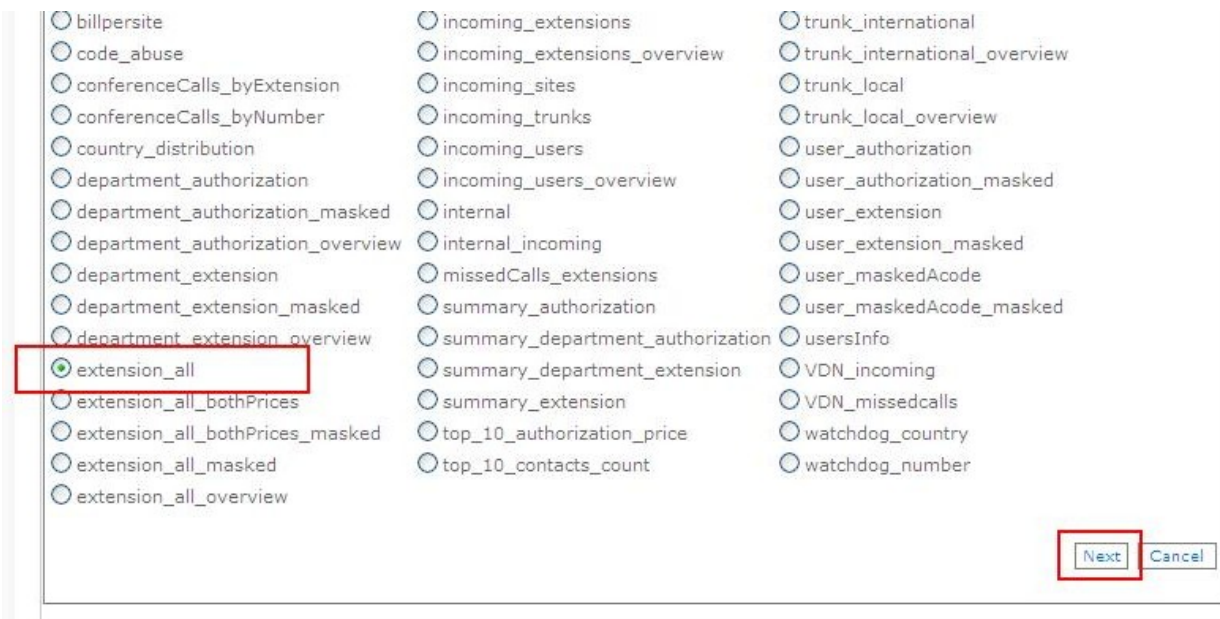
File	Edit	Format	View	Help
2011/9/20 12:26:0	1	12:20 09/20		
2011/9/20 14:28:0	1	14:22 09/20		
2011/9/20 16:29:59	1	092011 1538 0001 O	*11	3001 3001
2011/9/20 16:29:59	1	092011 1538 0001 C	*11	3001 3000
2011/9/20 16:29:59	1	092011 1538 0001 C	*11	3000 3001
2011/9/20 16:29:59	1	092011 1538 0001 O	7 *11	3000 3000
2011/9/20 16:29:59	1	092011 1547 0000 C	*11	3001 3000
ALLCDR20110928		28/09/2011 13:18	Text Document	1 KB
ALLCDR20110929		29/09/2011 22:07	Text Document	1 KB

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 <http://<sharpdial Server IP>/sharpdial/reportinguser/login.aspx> and click on **Reports** at top right of page as shown below.



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



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).

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.

[Home](#) > Reports

My Reports

Generate Reports

Extensions:

- 2000-Main Site
- 2002-Main Site
- 2010-Main Site
- 2012-Main Site
- 5000-Main Site
- 5001-Main Site
- N/A-Main Site

Selected Extensions:

- 3000-Main Site
- 3001-Main Site

>>>

>

<

<<<

Previous

Next

Cancel

See the displayed example of an **Extension_All_Report** below.

[Find](#) | [Next](#)

Date: 02/11/2011 12:06:27

Extension All Report

From : 20/09/2011

To : 20/09/2011

Extension : 3001

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
Total for extension : 3001		0:01:06				0.0
Total for Site : Main Site		0:03:42				0.0
Grand Total:		0:03:42				0.0

2 / 2

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 <http://support.avaya.com> where the following documents can be obtained.

- [1] *Administering Avaya Aura™ Communication Manager, Document ID 03-300509, June 2010.*
- [2] *Avaya Aura™ 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 <http://www.libatel.com>.

Appendix

Included in this Appendix is the configuration of Windows 2008 Server 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.

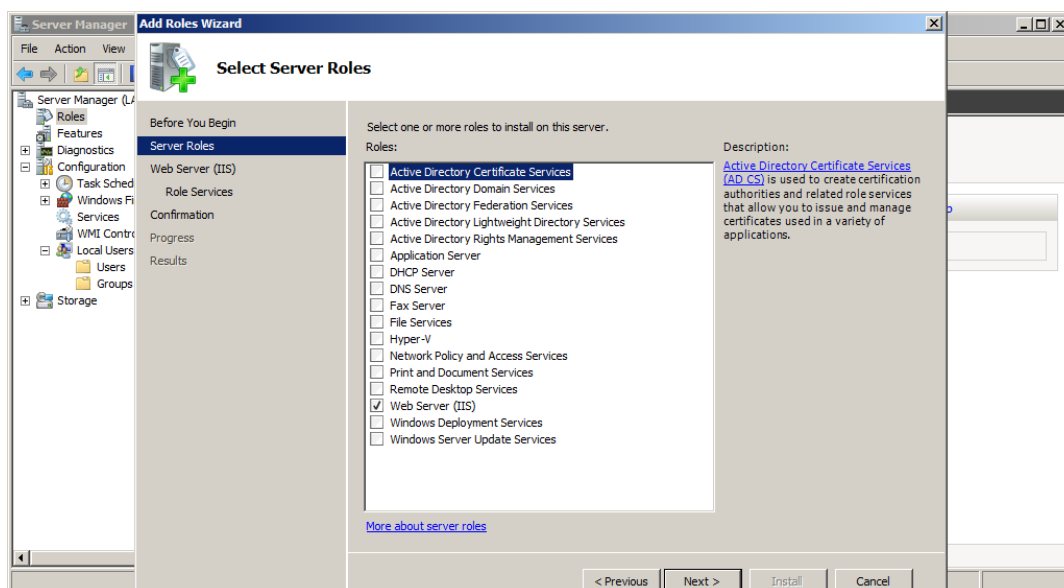
1. Configuration of Windows 2008 Server before SharpDial software is installed

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

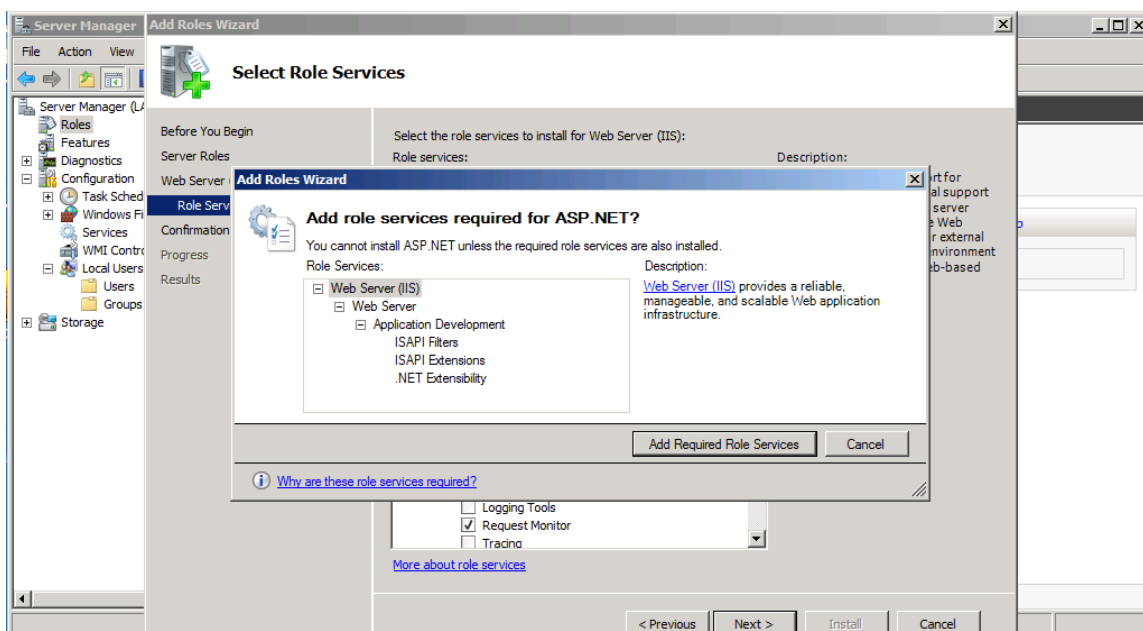
- **Windows PowerShell:** Microsoft's task automation framework, consisting of a command-line shell and associated scripting language built on top of, and integrated with the .NET Framework. PowerShell provides full access to COM and WMI, enabling administrators to perform administrative tasks on both 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)**.

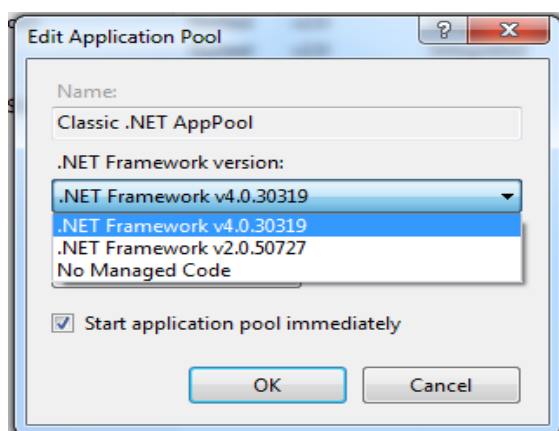


When prompted to select **Role Services**, check **ASP.NET** and **add all Required Role Services**. Continue with the wizard setup.

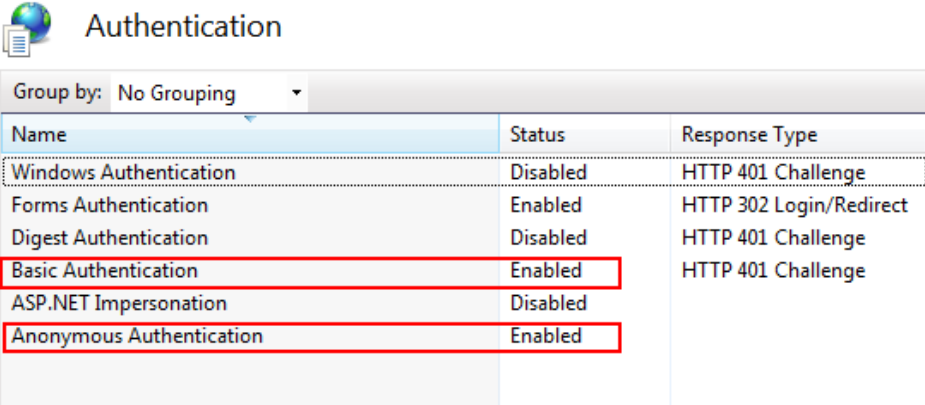


Open Internet Information Services Manager (IIS) Manager. Run the **inetmgr** command from the **Start → Run** dialog box. Specify a .NET framework version for an application pool.

- 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**.



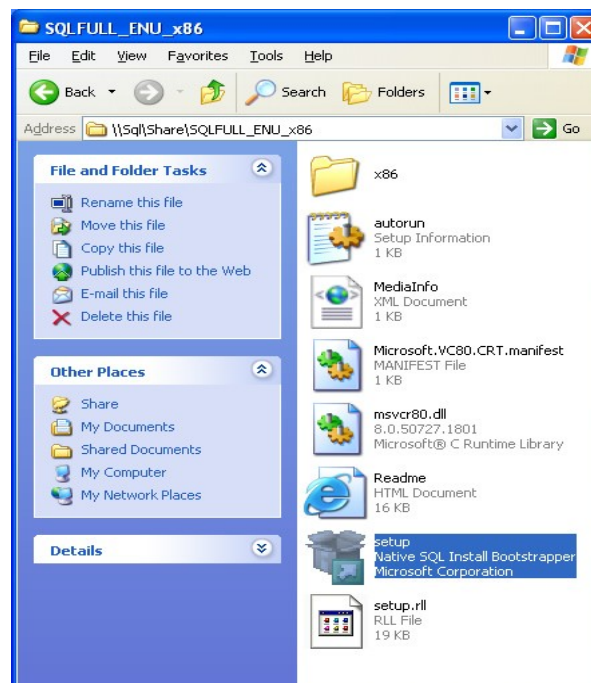
Configure site's authentication: double click the site on the left pane, double click **Authentication** and enable **Anonymous Authentication** and **Basic Authentication**.



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

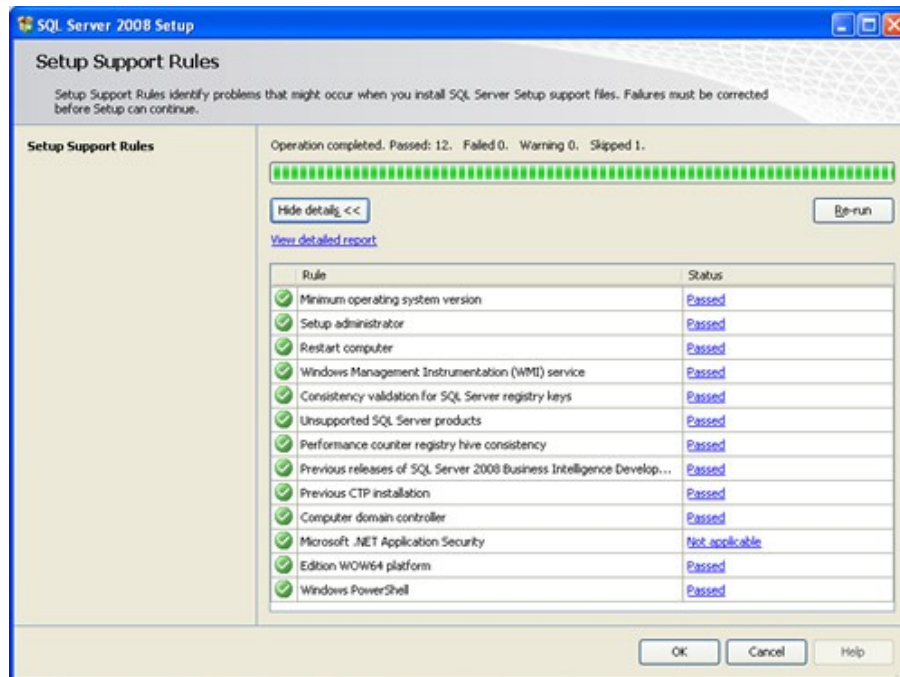
Browse to the corresponding SQL express setup folder.



Start the installation from the installation centre window.



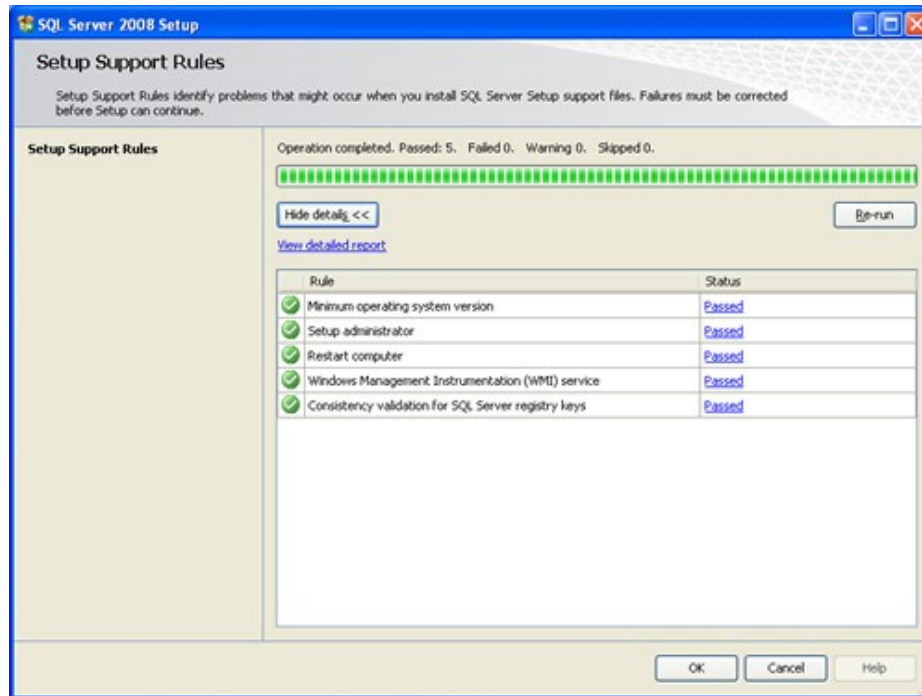
The installer runs a system check to verify that all required components are installed on the server. If failures occur (such as missing power shell), they must be corrected before proceeding with the installation.



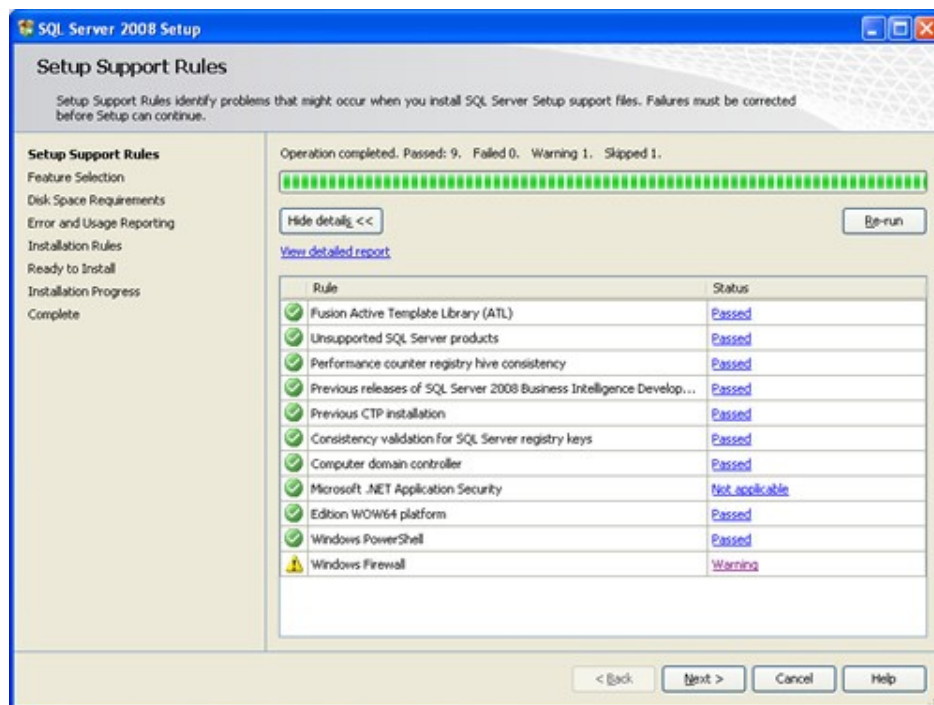
Install a new stand-alone SQL server.



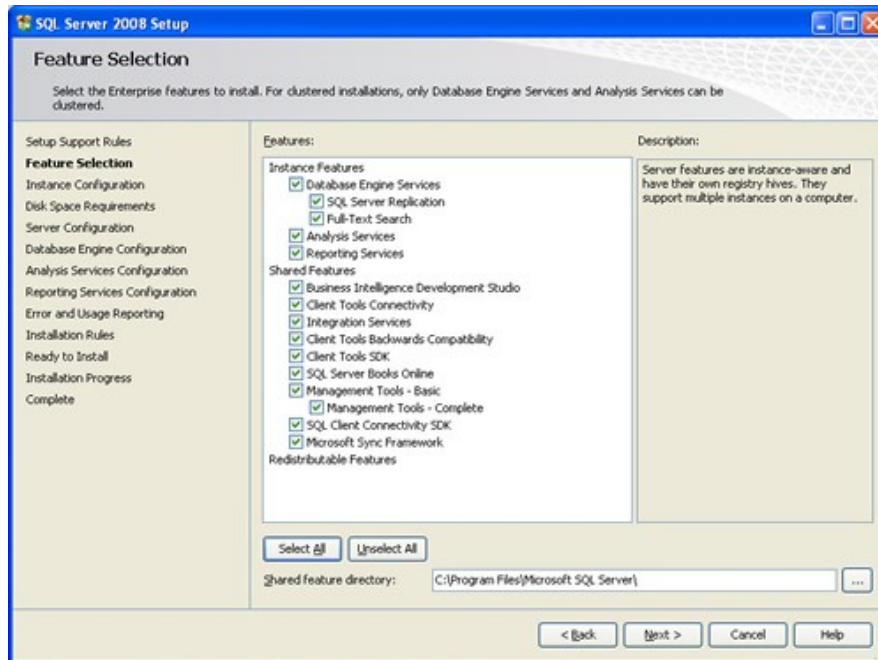
Hardware check is completed by the installer. If failures occur they must be corrected before proceeding with the installation.



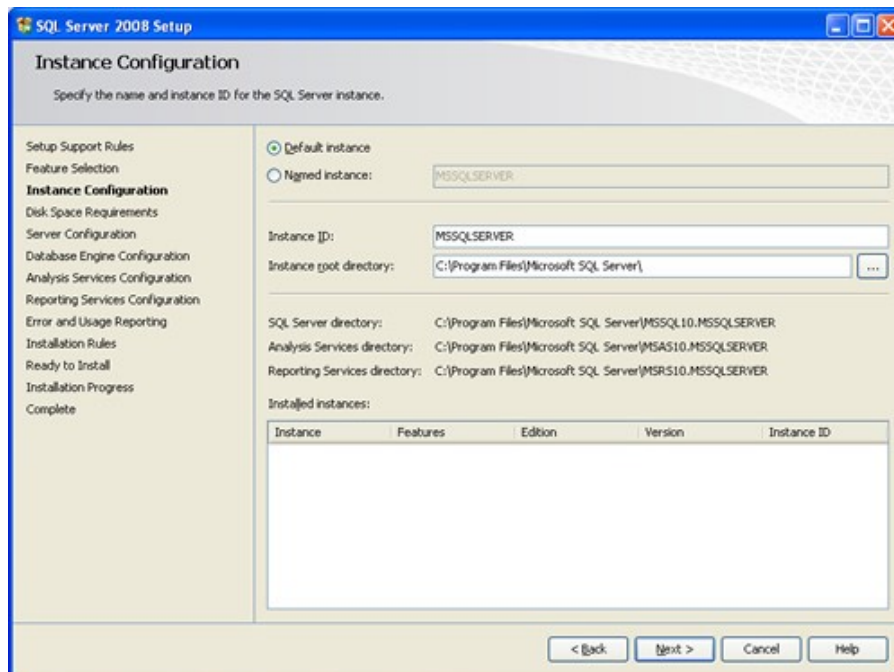
SQL Express installer checks if all prerequisites are installed, if all rules are passed, press 'Next' to continue. Else install required components.



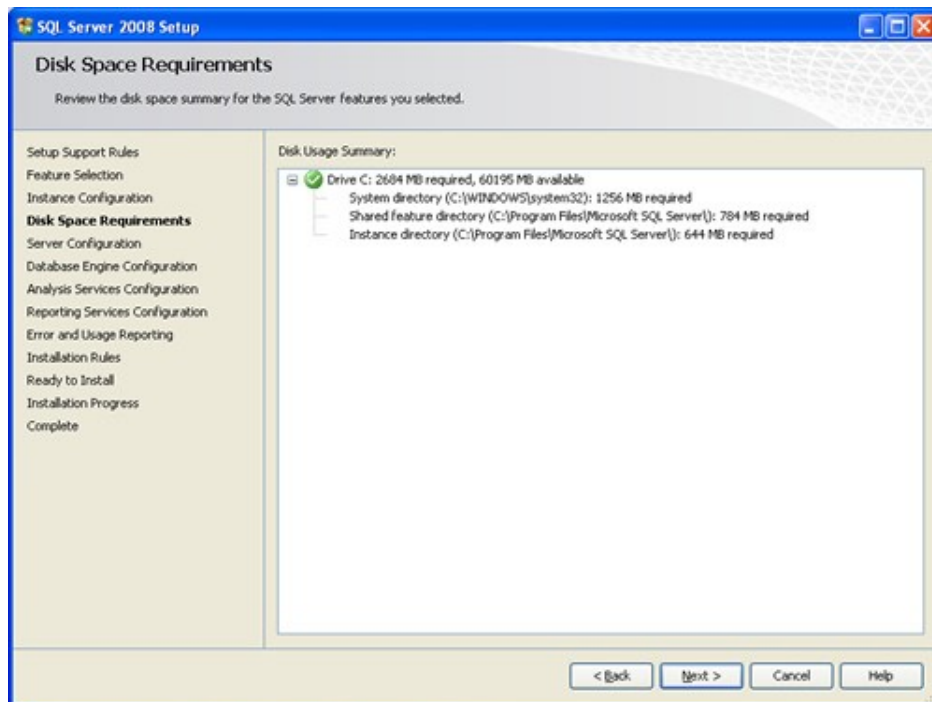
Select **SQL Feature Selection** and press **Next** to continue. **Database Engine Services**, **Reporting Services** **MUST** be installed as well as **Management Tools**.



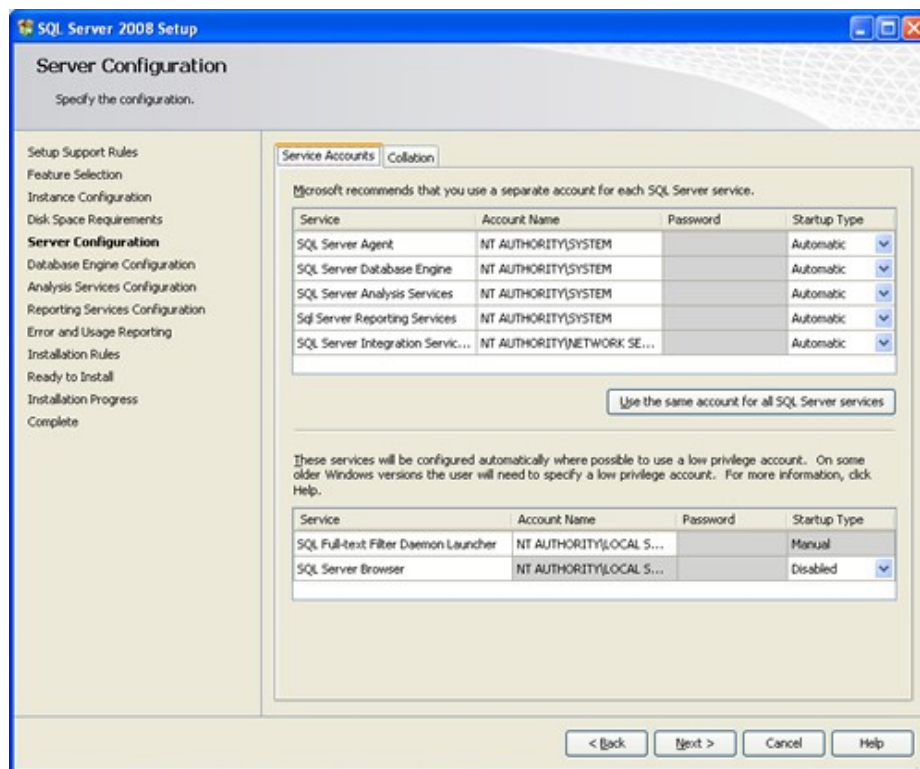
Check the **Default instance** radio button and specify the instance name. Click **Next** to continue.



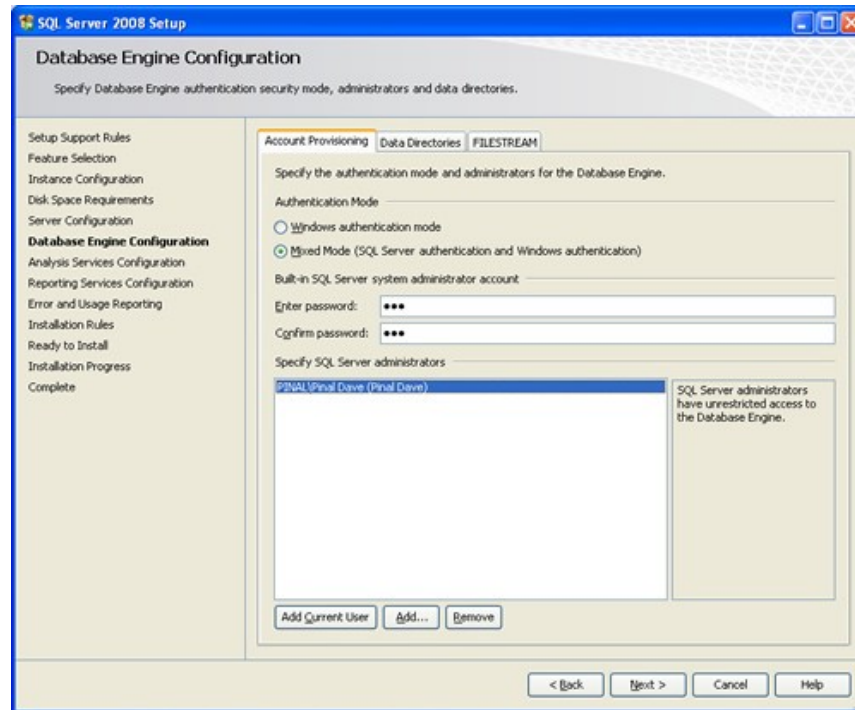
At the disk space requirements page click **Next** to continue.



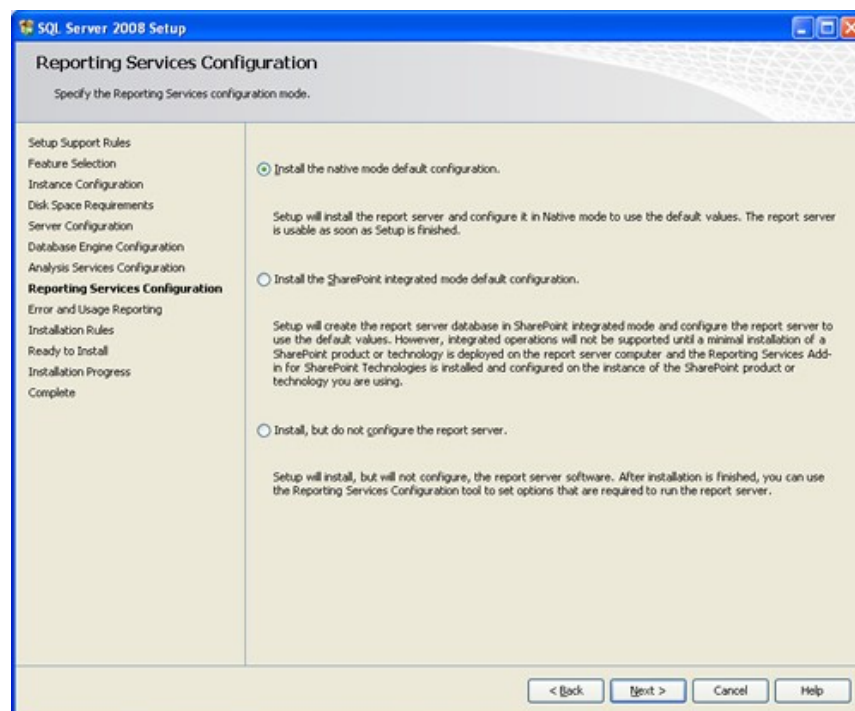
Select NT AUTHORITY\SYSTEM and use the same account for all SQL services. Click **Next** to continue.



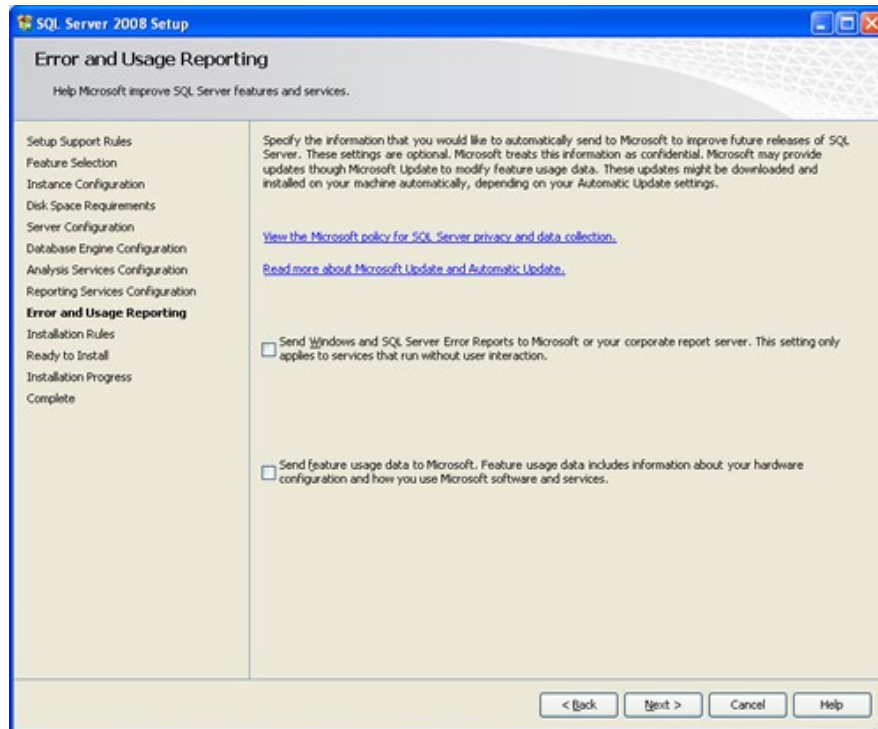
Select the **Mixed Mode** authentication and note down your configure **sa** password as will be needed later during the component's installation.



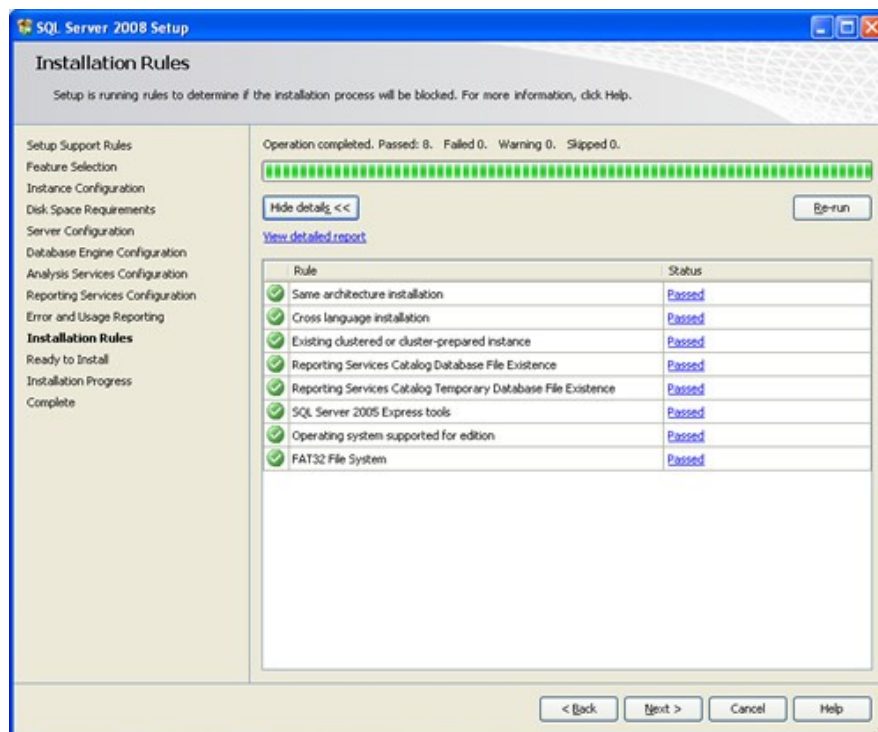
Install the **Native mode default configuration** for reporting services.



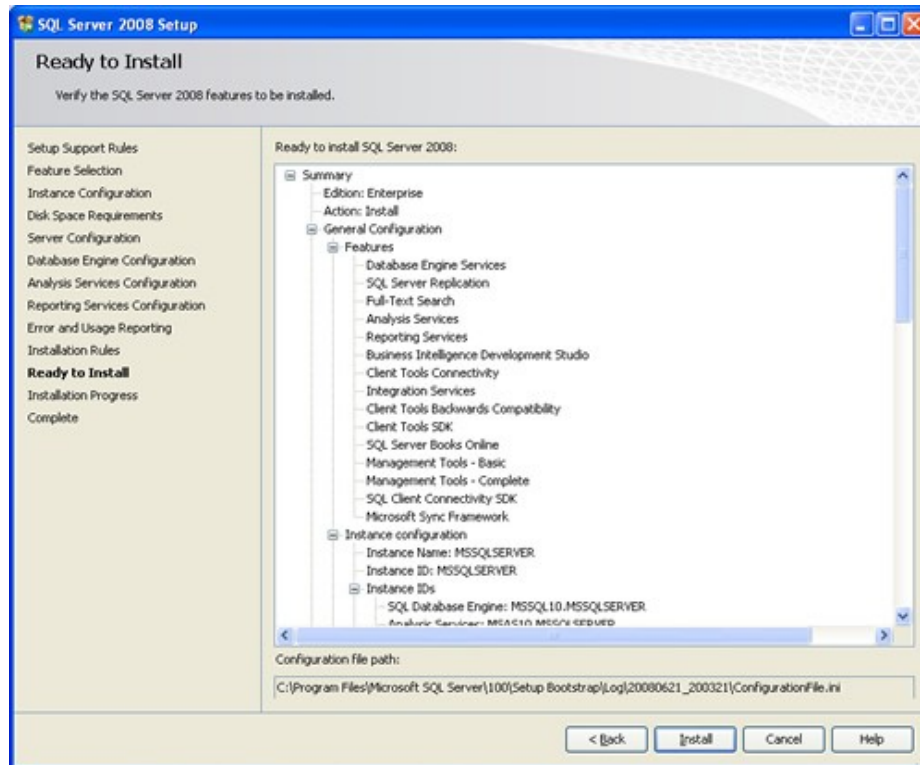
Click **Next** to continue.



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-Troubleshooting-guide.pdf (section IV SQL and Reporting service installation check)
6	Validate services startup type. All services startup type should be Manual . Engine service startup type should be delayed automatic .	
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: http://IP:PORT/SharpDial 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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