Define ODBC Database Library using Management Console

Introduction:

Open database connectivity (ODBC) standards provide a common interface to a variety of databases, including AS/400, dBase, Microsoft Access, ORACLE, Paradox, and SQL Server databases. This paper describes how to define an ODBC library, using Sql Server ODBC driver, in the SAS Management Console. By following these six steps, you can access your ODBC library from Business Intelligence (BI) clients.

1. Configure the ODBC Data Source
2. Define libname statement with the ODBC Engine
3. Setup the ODBC user in the SAS Management Console
4. Configure the ODBC Database Server
5. Configure the ODBC Database Library
6. Verify the libname statement
7. Import DBMS tables

Before you begin:

The SAS/ACCESS Interface to ODBC software provides an interface between the SAS System and any ODBC-compliant data. The ODBC driver for the database to which you want to gain access must be installed and configured before you can exchange data from SAS. Examples in this paper use the Microsoft SQL Server ODBC driver.

1. Configure the ODBC Data Source (DSN)

The data source is configured using the ODBC Administrator window.

1. Start > Settings > Control Panel > Administrative Tools > Data Source (ODBC)
2. The Data Source Administrator window opens and the USER DSN is displayed in the active window
3. Select System DSN Tab and Click ADD
4. Choose SQL Server and click Finish
5. Create New Data Source window opens. Fill in the fields as follows:
   Data Source Name: enter a name (SQLSERVER)
   Description: Leave blank and click OK
   Server: Enter the server name that you use to login to sql server database: SQLSERVER
6. Click Next
7. SQL Options: Select * with SQL Server authentication using a login ID and password entered by the user for the SQL Server LoginID use “SQL SERVER USERID” and password use “SQL SERVER PASSWORD”
10. Select Next
11. Select Change the default database to database of choice
12. Select **Use ANSI quoted identifiers**
13. Select **Use ANSI nulls, padding and warnings**
14. Click **Next**
15. Click **Next** and **Finish**

16. Click **Test Data Source**
2. Libname Statement with the ODBC Engine

Before configuring the libname in the SAS Management Console, you must make sure the SAS/ACCESS is able to communicate with the data source that you specified in Step 1.

1. Start -> Programs -> SAS -> 9.1 -> Start SAS
2. Submit following libname statement from the editor window,
   `libname odbclib odbc dsn=sqlserver uid=sqldbpwd pwd=sqldbpwd;`

   The Log window is displayed:

   NOTE: Libref ODBCLIB was successfully assigned as follows:
   Engine: ODBC
   Physical Name: sqlserver

3. Setup the ODBC user in the Management Console

   Defining a user involves identifying information about the users, defining an ODBC users’ login IDs, and authenticating domains.

   1. Start the SAS Metadata Server. Start -> Programs -> SAS -> BIArchitecture -> Start SAS Metadata Server

3. Select the User Manager plug-in in the navigation tree, Right Click --> New Group.

4. Define a new group and give it a name. Select the Members tab.
5. Add the appropriate users/groups
6. Click the Logins tab and click the New button. “New Login Properties” window is displayed.
7. Supply the login information for the SQL Server. Click “New” to create a new Authentication Domain

8. Provide a domain name “Sql Server Login Domain” and a description “when connecting with ODBC”. Select OK. Description is optional.
9. Choose the new Domain. Click OK.

10. Select OK. A new group is defined and now SQL Server Login Domain is listed in the User Manager. Select OK to exit this window. Close SAS Management Console.

4. Configure the ODBC Database Server

A database server contains third party data. You can use the SAS Management Console to create definitions for the database servers containing data from many different data sources, enabling SAS applications to access the data. To define an ODBC database server use the following steps:

Start Management Console with SASDEMO id. Management console displays the id being used at the bottom. Make sure it is not SASADM. If you use SASADM (unrestricted) userid, when defining the library, the metadata server returns password as "{sas001}KioqKioqKioq=", which is an encryption of all asterisks rather than the correct password.

From the navigation tree, select the Server Manager plug-in

1) Select New Server from the pop-up menu, toolbar, or actions menu.
2) The New Server Wizard starts. Select **ODBC Server** from the **Database Servers** folder and click **Next** to continue.
3) In the **Name and Description** window, specify a name – **sqlserver_odbc_server**. A description is optional. Click **Next** to continue.
4) Select **ODBC-Microsoft SQL Server (PC Client)** for the Data Source Type using the down arrow key. Click **Next** to continue.
5) Select **Datasrc** and enter the data source name **SQLSERVER**. (the data source that created in Step 1)

6) Select **Sql Server Login Domain** for the Authentication Domain.
   Click **Next**.

7) Click **Finish** to define the database server after you verify the information.

5. **Configure the DBC Database Library**

The **Data Library Manager** plug-in allows you to define SAS libraries that point to data from other databases or data analysis applications. The library definitions that you create perform similar function as a SAS/ACCESS LIBNAME statement in SAS.

To create an ODBC database library use the following steps:

1. Select the **Data Library** Manager plug-in and then select the **SAS Libraries** folder.
2.

3. Select **New Library** from the pop-up menu
4. Select ODBC from the New Library Wizard and click Next.
6. sqlserver_odbc_library for the New ODBC Library. A description is optional.
9. Select **Next**. Enter the libref **sqlodbc** and make sure that the engine is ODBC and click **Next**.
10. Select the Database Server, `sqlserver_odbc_server`, that you have defined in step 4.

11. Select **SQL Server Login Domain** for the Default Login. (click on down arrow to select)

12. **Select New for the Database Schema.**

13. Enter the name SQL Server schema for the schema. A description is optional.
16. Enter appropriate Schema, **dbo**, for the ODBC Database Schema name and make sure that `sqlserver_odbc_server` is listed for the ODBC server.

18. Select **Next** and then **Finish**.

19. Verify the information in the New Library Wizard and click **Next**.

20. Select **SASMAIN** for the server name.

21. Click **Next** verify the information and click **Finish**.  :

   `sqlserver_odbc_library` is listed in the Data Library folder.

6. **Verify the Libname Statement**

You can use the Management Console to verify the library before using from other client.

1) Expand **Data Library**
2) Select **Sqlserver_odbc_library** Right Click and Select **Display Libname**
3) Libname name should display similar to the following.
   
   ```
   LIBNAME sqlodbc ODBC DATASRC=sqlserver
   USER=dbitest PASSWORD="{sas001}ZQJqZ3JwMQ==";
   ```

4) Above libname can be submitted from the SAS Editor Window.
7. **Import the Table**

Entering metadata for a library does not itself provide access to tables in the library. You must also specify metadata for all tables that you want to access in the library. With SAS 9.1(TS1M3), you can use SAS Management console to import the tables.

1) Right click on the library **“Sqlserver_odbc_library”**
2) Select **Import Tables**, 
3) Select **Next** (SASMAIN), verify the SAS library connection information, 
4) Select **Next**, list of SQL Server tables is displayed. 
5) Select one table

**Note:** Once the metadata is added for the table, right click on the table, select properties, Select Authorization tab and appropriate permission can be added for the table.

**Documentation**

For further information, the following documentation is also available:

* SAS 9.1.3 Intelligence Platform: **Data Administration Guide** at

* SAS 9.1.3 ETL Studio User’s Guide at

* SAS Enterprise Guide at

* SAS Open Metadata Architecture at

* SAS/ACCESS(R) 9.1.3 for Relational Databases: Reference, Chapter SAS/Access for ODBC
  [http://support.sas.com/onlinedoc/913/docMainpage.jsp](http://support.sas.com/onlinedoc/913/docMainpage.jsp)