Defining an OLEDB Library in SAS® Management Console Using Windows Authentication

- Adding a User with the SAS Management Console User Manager
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- Defining the OLEDB Library
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This document explains how to define an OLEDB library in SAS® Management Console in order to access the Microsoft SQL Server using Windows authentication.

The following prerequisites are necessary before you begin defining an OLEDB library.

- Make sure that your user ID (entered in the form *domain\userid*) has "Login as batch" rights assigned. For details on assigning user rights, refer to your Windows operating system documentation.
- SAS/ACCESS® Interface to OLE DB and the OLE DB provider for the Microsoft SQL Server must be installed on the same machine on which SAS runs.
- Before you configure the library in SAS Management Console, make sure that you can submit a LIBNAME statement successfully in base SAS® software.

**Example of a LIBNAME Statement**

```
libname sqlole oledb
init_string="Provider=SQLOLEDB.1;
Integrated Security=SSPI;
Persist Security Info=True;
Initial Catalog=Northwind;
Data Source=bluefin.na.sas.com" schema=dbo;
```

**Note:** If you cannot see SQL Server tables in the SAS Explorer window, then you need to submit the following SQL procedure (PROC SQL) to find the table names and the corresponding schema for each table.

```
proc sql;
    connect to oledb;
    select table_name, table_schema from connection
to oledb(OLEDB::Tables);
quit;
```
Adding a User with the SAS® Management Console User Manager

The first step in defining an OLEDB library is to add your user definition to SAS Management Console by using the User Manager plug-in. The following steps show how to add your user definition.

1. Start SAS Management Console using your administrator account.

2. From the SAS Management Console navigation tree, right-click the User Manager icon; then select New ➤ User, as shown in the next display.
3. Selecting **New ► User** displays the New User Properties dialog box, shown in Display 3.
4. On the **General** tab, enter your name in the Name field. Note that you can enter any user name you want to use (for example, a single name, your full name, and so on).

5. Select the **Logins** tab and click **New** to display the New Login Properties dialog box.

![New Login Properties Dialog Box](image)

(Display 4. New Login Properties Dialog Box)

6. Enter your Windows domain and user ID (domain\userid) and the password.

7. Select **DefaultAuth** as the authentication domain.

8. Click **OK** to add the login to the user. The application will display the following verification message.

![New User Properties](image)

(Display 5. New User Properties Verification Message)

9. Click **OK** and the New User Properties Screen will display again.
10. Click the **Logins** tab to see the new login properties.

![New User Properties Dialog Box](image)

*Display 6. New User Properties Dialog Box*

11. Click **OK** to close the New User Properties dialog box.
12. Click **User Manager** to verify that your name appears in the user name list, as shown in the next display.
Defining the OLEDB Server

1. From the navigation tree, right-click Server Manager; then select New Server to display the New Server Wizard.

2. In the wizard, expand the Database Servers folder and select OLE DB Server.
3. Click **Next**, which displays data entry fields where you can enter the name and description for the new OLE DB Server.

![Display 9. OLE DB Server Name and Description Fields in the New Server Wizard](image)

4. In the **Name** field, type the server name (for example, `sqlserver_oledb_ntauth`).

5. Click **Next** to display the server properties.

![Display 10. Server Properties Dialog Box in the New Server Wizard](image)
**WARNING**: The following server properties displayed in the data entry box are default values and should **NOT** be changed:

- Major Version Number
- Minor Version Number
- Software Version
- Vendor

**Note**: The Associated Machine property refers to the SAS Application Server - **NOT** the SQL Server machine.

6. Click **Next** to display the OLE DB connection information.

7. Type the server name "**bluefin.na.sas.com**" (in quotation marks) for the SQL Server in the **Datasource** field.
8. Type **SQLOLEDB.1** in the **Provider** field.
9. Click the **OLE DB Connection Information Options** button to display the OLE DB Connection Information Options dialog box.
11. Enter the following text in the **Init String** field:

```
"Provider=SQLOLEDB.1;
   Integrated Security=SSPI;
   Persist Security Info=True;
   Initial Catalog=Northwind;
   Data Source=bluefin.na.sas.com"
```

**Note:** Type the entire string, within quotation marks (" "), **all on one line**.

12. Click **OK**.
13. Click **Next**. A confirmation screen will display with a message stating that the definition of a new server has been completed.
14. Then click **Finish**.
15. In SAS Management Console, click the **Server Manager** icon.

![Server Manager Icon](image)

**Display 13: Server Manager Icon**

The new OLEDB server name, `sqlserver_oledb_ntauth`, should appear in the **Name** list in the right panel.
Defining the OLEDB Library

1. From the navigation tree in SAS Management Console, expand Data Library Manager.
2. Under Data Library Manager, right-click SAS Libraries and select New Library.

Display 14. Selecting New Library from the SAS Libraries Menu

4. In the wizard, expand the **Database Libraries** folder and select **OLE DB Library**, as shown in Display 15. Then click **Next**.

**Display 15. Expanded Database Libraries Folder with OLE DB Library Selected**

**Display 16. Entering the OLE DB Library Name and Description**
5. Type the library name (for example, sqlserver_oledb_ntauth_lib) in the Name field, as shown previously in Display 16. Then click Next.

![Display 17. Entering Library Properties](image1.png)

6. Type the libref name (for example, sqloledb) in the Libref field (Display 17) and click Next.

![Display 18. Selecting the External Database Server](image2.png)
7. In the **Database Server** field, select the OLE DB server *(sqlserver_oledb_ntauth)* that you created previously in "Defining the OLEDB Server."

8. Click the **New** button that is to the right of the **Database Schema** field to display the New OLEDB Database Schema wizard.

![New OLEDB Database Schema Wizard](image)

*Display 19. The New OLEDB Database Schema Wizard*

9. In the **Name** field, type a name (for example, *sqlserver_oledb_ntauth_schema*) for the new OLE DB schema, as shown in Display 19.

   **Note**: The OLE DB Schema name entered in this window is **NOT** synonymous with the database schema name that is **shown in Step 12**. You can use any name for the OLE DB schema.

10. In the **Description** field, type a suitable schema description. **Note**: Use of the **Description** field is optional.

    Click **Next** to display the schema properties' page.
11. In the **Database Schema Name** field (Display 20), type a name for the database schema.

**Note:** This is the same database schema name specified in the LIBNAME statement shown previously:

```plaintext
libname sqlole oledb init_string="Provider=SQLOLEDB.1;
   Integrated Security=SSPI;
   Persist Security Info=True;
   Initial Catalog=Northwind;
   Data Source=bluefin.na.sas.com" schema=DBO;
```

Note that the database schema name must be **uppercase** in the LIBNAME statement.

12. Click **Next** and review the database schema information, as shown in Display 21.
13. Click **Next**, which takes you to the next screen where you will select the server to which you want to assign the library.

14. Select **SASMain** as the server to which the library will be assigned.

**Warning**: Server selection is **NOT** optional as indicated in the wizard. You **MUST** select a server (**SASMain** in this example).

*Display 22. Assigning the Library to the SASMain Server*
15. Click **Next** to display the definition of the new library.

16. Verify the library information displayed on the screen. Then click **Finish**.

   The new library (sqlserver_oledb_ntauth_lib) should now appear in the list of libraries.

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**Verifying the Library Definition and Importing SQL Server Tables**

To check the accuracy of the LIBNAME statement that was generated in the previous section, perform the following steps:

**Verify that the SQL Server Tables Are Listed in the SAS® Explorer**

1. Close SAS Management Console and restart it using the same Windows ID (domain\userid) that you used in Step 6 in the section "Adding a User with the SAS Management Console User Manager."
2. From the navigation tree in SAS Management Console, right-click **Data Library Manager**.
3. Under **Data Library Manager**, right-click the library that you just created (sqlserver_oledb_ntauth_lib) and select **Display Libname**, as shown in the next display.
Display 24. Selecting Display Libname from the sqlserver_oledb_ntauth_lib Menu

The Display Libname message window appears (Display 25) with the LIBNAME statement that is generated for your server.

Display 25. The LIBNAME Statement Generated for sqlserver_oledb_ntauth_lib

4. Copy the LIBNAME statement from the Display Libname window and paste it into your SAS Program Editor.
5. Submit the LIBNAME statement and verify that the appropriate tables are listed in the SAS Explorer window.

Import the SQL Server Tables

1. From the navigation tree in SAS Management Console, expand Data Library Manager.
2. Under Data Library Manager, right-click sqlserver_oledb_ntauth_lib and select Import Tables.
Display 26. Selecting **Import Tables** from the `sqlserver_oledb_ntauth_lib` Menu

3. In the **SAS Library** field, click the down arrow at the right of the field. From the resulting drop-down list, select your application server (**SASMain**, in this example), and click **Next**.

Display 27. Selecting an Application Server
4. Click **Next** again, and the Define Tables dialog box displays with a list of SQL server tables.

![Define Tables Dialog Box](image)

*Display 28. Selection List of SQL Server Tables*

5. In the list, click the table name for which you want to import metadata.
6. Click **Next** and the application will display the table you selected.
7. Click **Finish** and you will now be able to use the specified table in any SAS BI client.

**See Also**

- "Relational Database Sources" in the SAS OnlineDoc for the SAS 9.1.3 Intelligence Platform: Data Administration Guide. To get to "Relational Database Sources," follow these steps:
  
  1. Go to the SAS® 9.1.3 Intelligence Platform: Administration Documentation Web site:
    
    support.sas.com/documentation/configuration/913admin.html
  
  2. In the Administration section (near the bottom of this page), click the SAS OnlineDoc link under SAS® 9.1.3 Intelligence Platform: Data Administration Guide to open SAS Online Doc.
  
  3. Then click "Relational Database Sources" in the right panel.
  
  support.sas.com/onlinedoc/913/docMainpage.jsp
You can find "SAS/ACCESS for OLE DB" by selecting SAS/ACCESS Software ► SAS/ACCESS for Relational Databases: Reference ► DBMS-Specific Reference ► SAS/ACCESS for OLE DB.

- **Comparing OLE DB and ODBC:**
  
  ftp.sas.com/techsup/download/v8papers/odbcdb.pdf

**Note:** This document applies to SAS 9.1.3 and higher.