Configuring SAS® Web Report Studio Releases 4.2 and 4.3 and the SAS® Scalable Performance Data Server®

Leveraging Large Amounts of SAS® Performance Scalable Data Server® Data in Your SAS® Web Report Studio Environment

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Introduction

SAS offers a wide variety of business-intelligence software as well as a data-storage system (the SAS Scalable Performance Data Server) that is designed for fast retrieval of large amounts of data. This paper provides guidelines about how to configure SAS Web Report Studio to leverage such vast amounts of data that are stored in the SAS Scalable Performance Data Server (SAS SPD Server). To configure the applications, the following steps are required:

- defining your SAS SPD Server libraries in SAS® Management Console
- defining your temporary library (SPDTemp) so that it can be used by SAS Web Report Studio
- defining your query cache library (WRSTEMP)
- defining and assigning users and groups to access your SAS SPD Server data

This paper is not intended to cover all possible configurations and applications of SAS Web Report Studio and SAS SPD Server. It is also not intended to cover performance and tuning possibilities of either SAS Web Report Studio or SAS SPD Server. For example, topics such as implicit and explicit pass-through connections and the benefits of each are not covered.

For simplicity and clarity, this paper assumes the following:

- You are using either release 4.2 or release 4.3 of SAS Web Report Studio.
- You are using SAS SPD Server with Hot Fix 44SPDS09 or later applied.
- You are using shared credentials to access all data from SAS SPD Server.

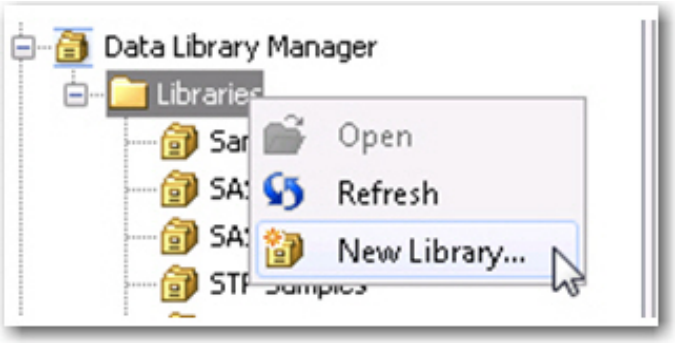
Defining Your SAS® Scalable Performance Data® Server Libraries in SAS® Management Console

You must define all of the SAS SPD Server libraries that you want to use via SAS Web Report Studio and the business-intelligence tools in SAS Management Console. This section takes you through the steps that are required to define these libraries. You can define as many SAS SPD Server libraries as you want. However, you only have to define **your SAS SPD Server only when you define the initial library.** After that, you can select your SAS SPD Server from the list box for additional data libraries**.**

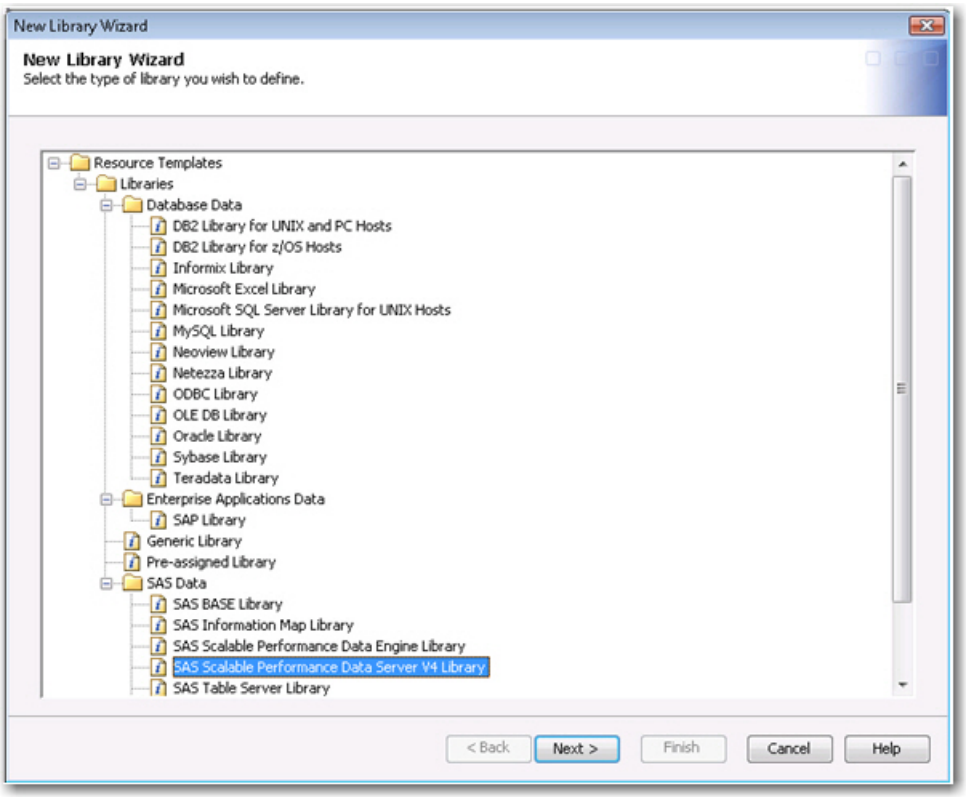
Note: You must define a new SAS SPD Server for your SPDTemp library**.** This task is covered in a later section.

To define your library:

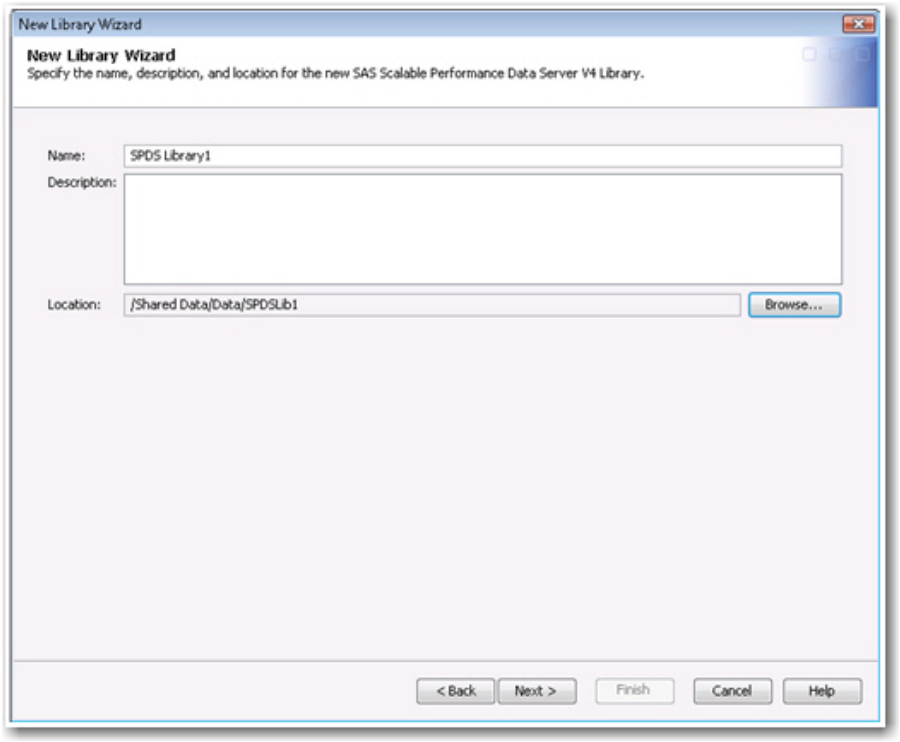
1. From SAS Management Console, select **SAS Libraries ► New Library** to open the New Library wizard.



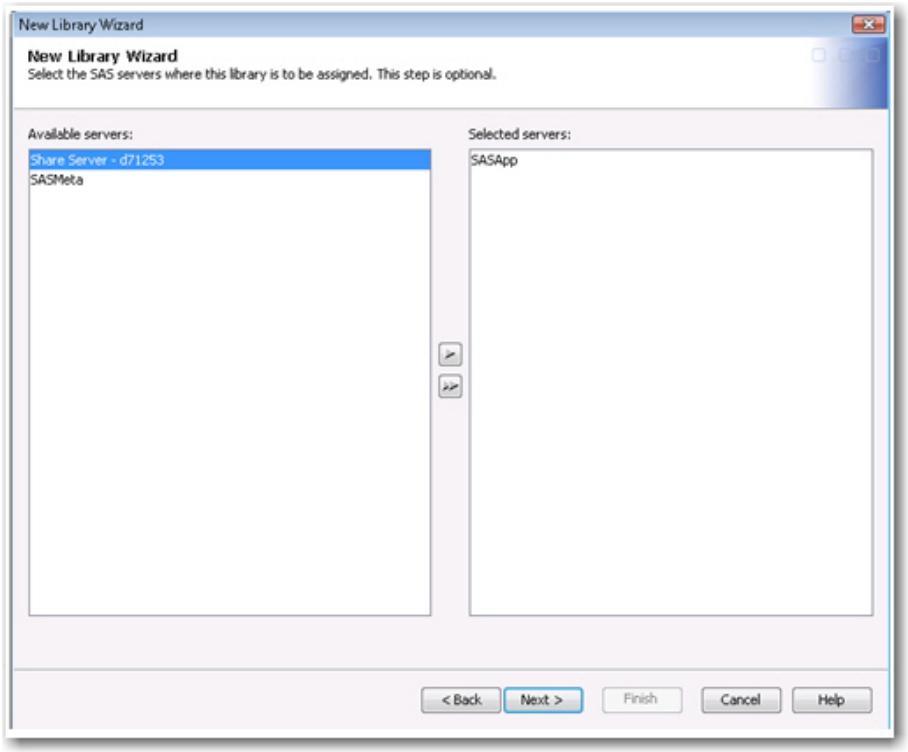
2. Select **`SAS Scalable Performance Data Server V4 Library`** as your library type. Then click **`Next`**.



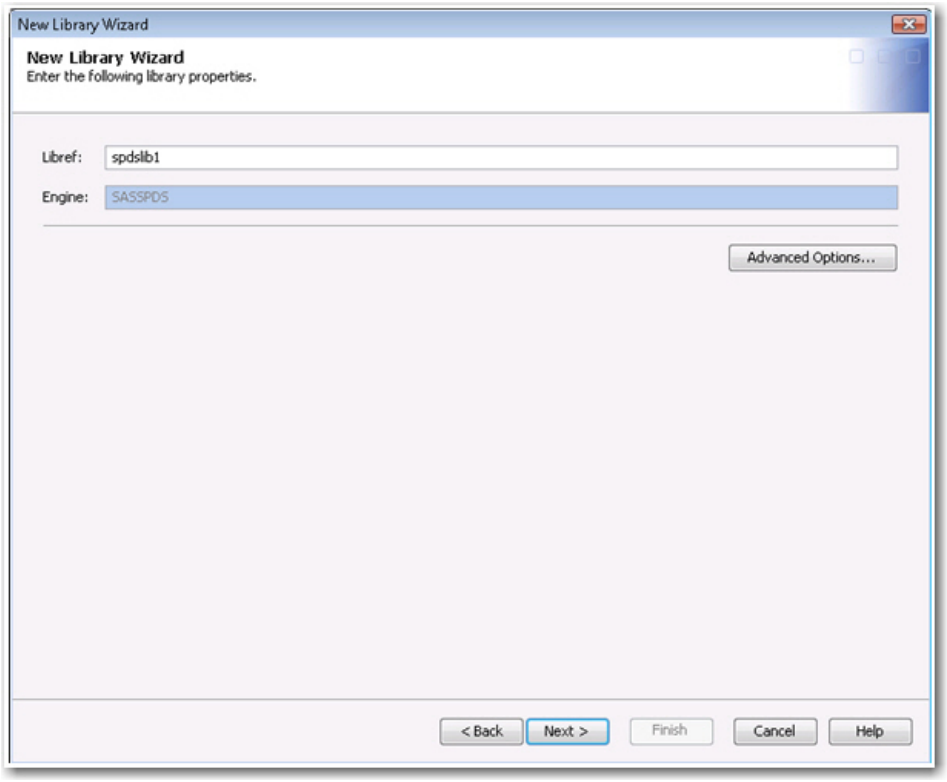
3. Enter a name and a metadata location for your SAS SPD Server library. Then click **Next**.



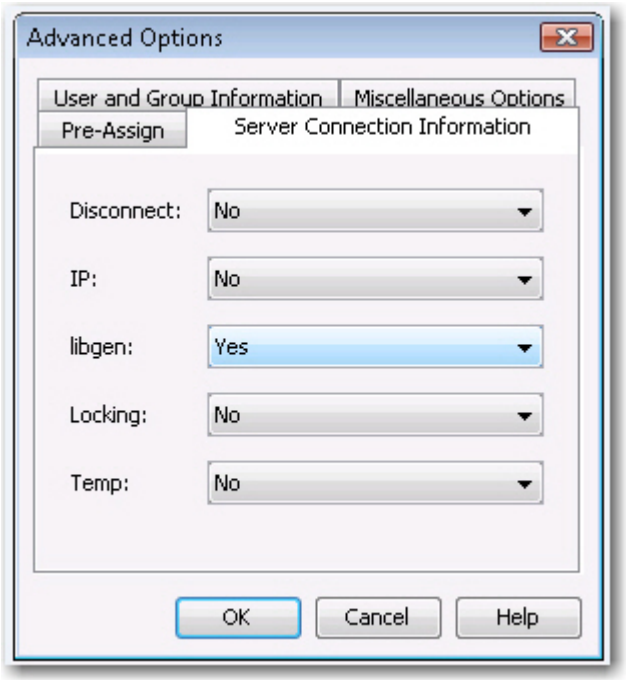
4. Select the application server with which to associate the library. Select the appropriate server in the **Available Servers** list. Click the single arrow to move the server to the **Selected servers** list. Then click **Next**.



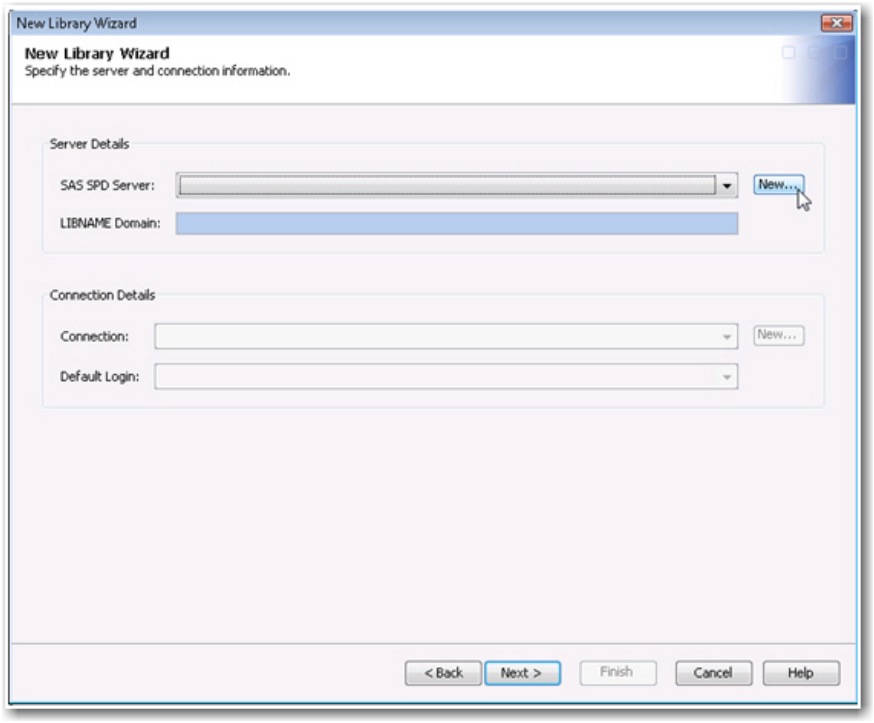
5. Enter a library reference for your library in the **Libref** text box. Then click **Next**.



6. Click the **Advanced Options** button to display the Advanced Options dialog box. On the **Server Connection Information** tab, select **Yes** from the **libgen** list.

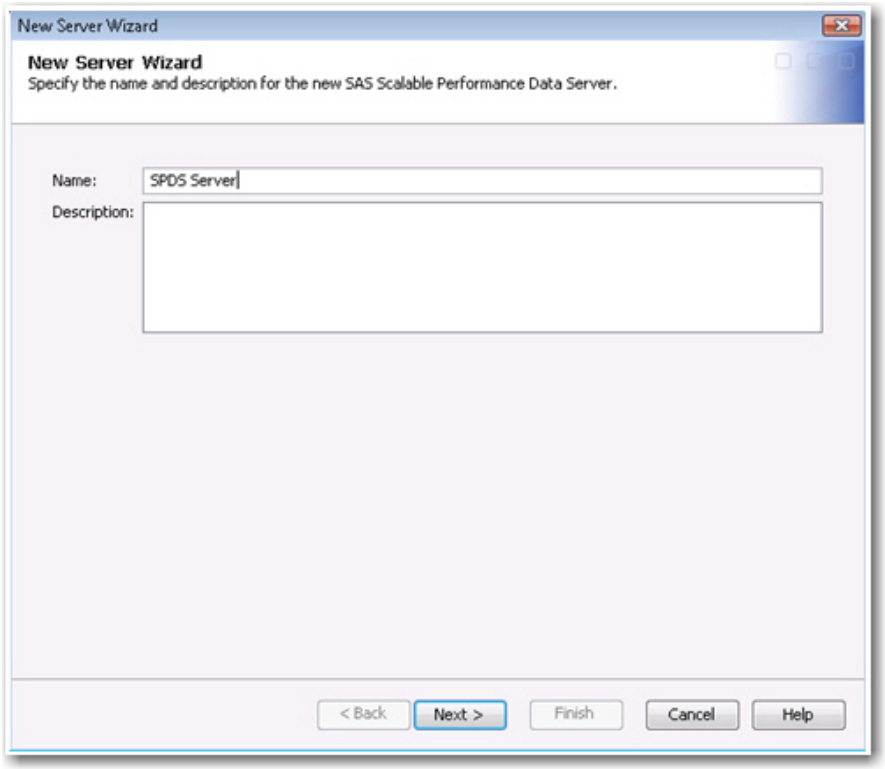


7. Click **OK** to return to the wizard. Then click **Next** to continue to the next wizard page, as shown in this display:

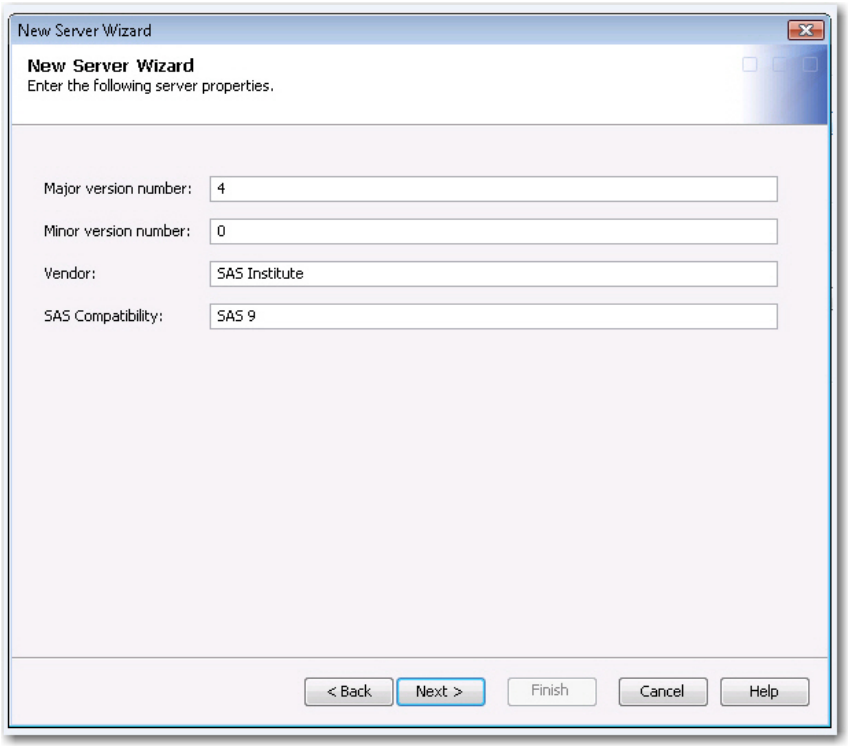


To the right of the **SPD Server** list box, click **New** to open the New SPD Server Wizard page. This page enables you to define a SAS SPD Server connection.

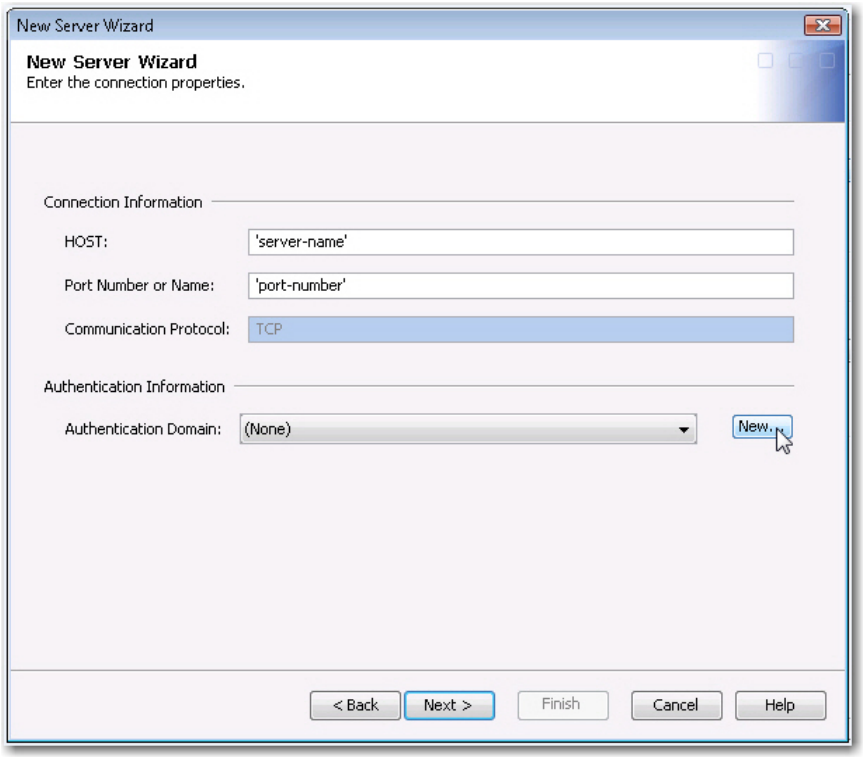
8. Enter a name for your SAS SPD Server connection, as show below. Then click **Next**.



9. Accept the default values for version numbers by clicking **Next**.

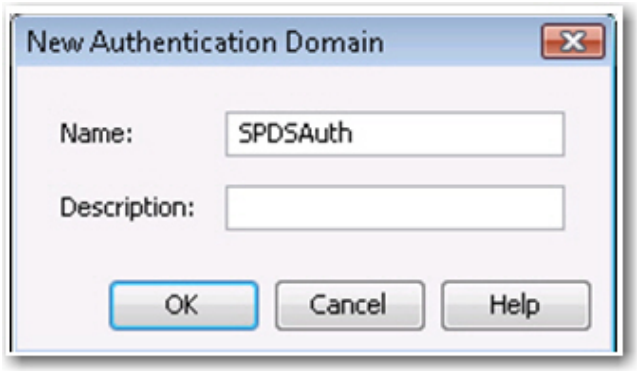


10. Provide the SAS SPD Server host information and port number for SAS SPD Server. As shown in the following display, single quotation marks are required around the server and port name.

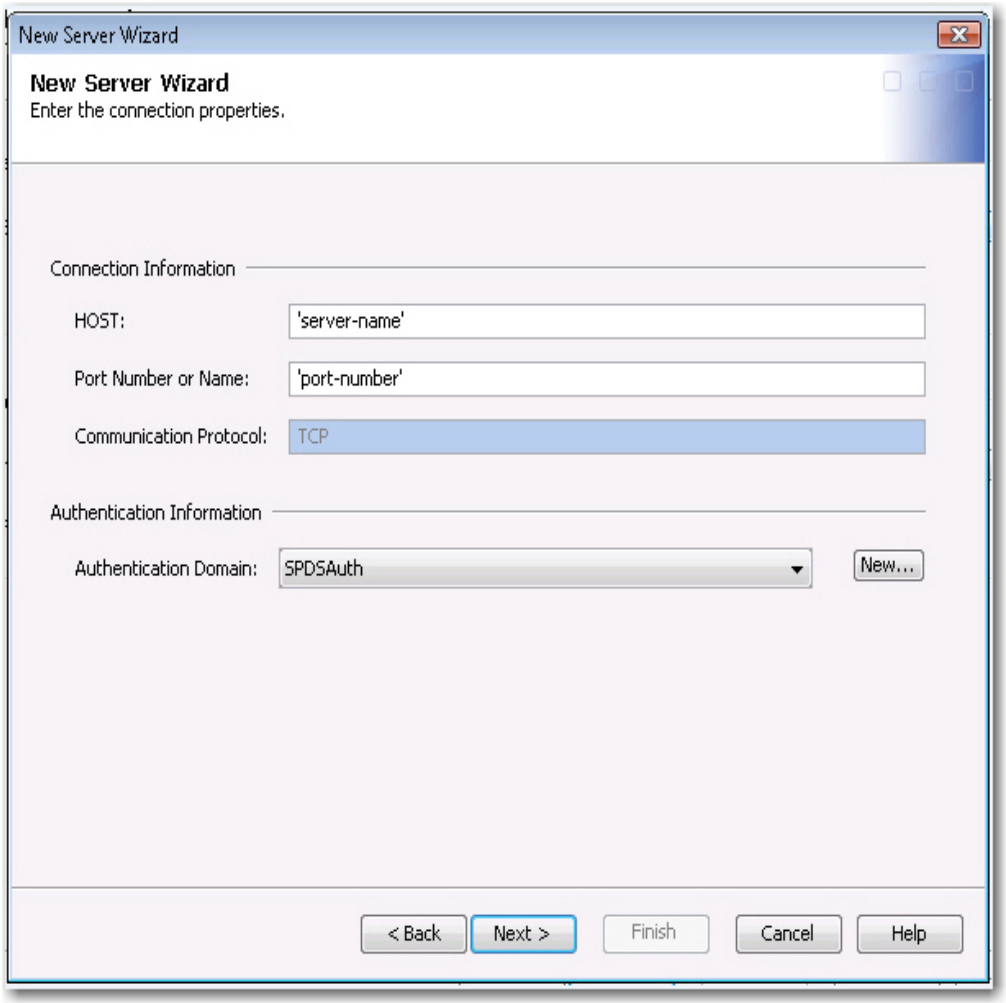


11. Under **Authentication Information**, click **New** to open the New Authentication Domain dialog box, which enables you to define a new authorization domain for your SAS SPD Server.

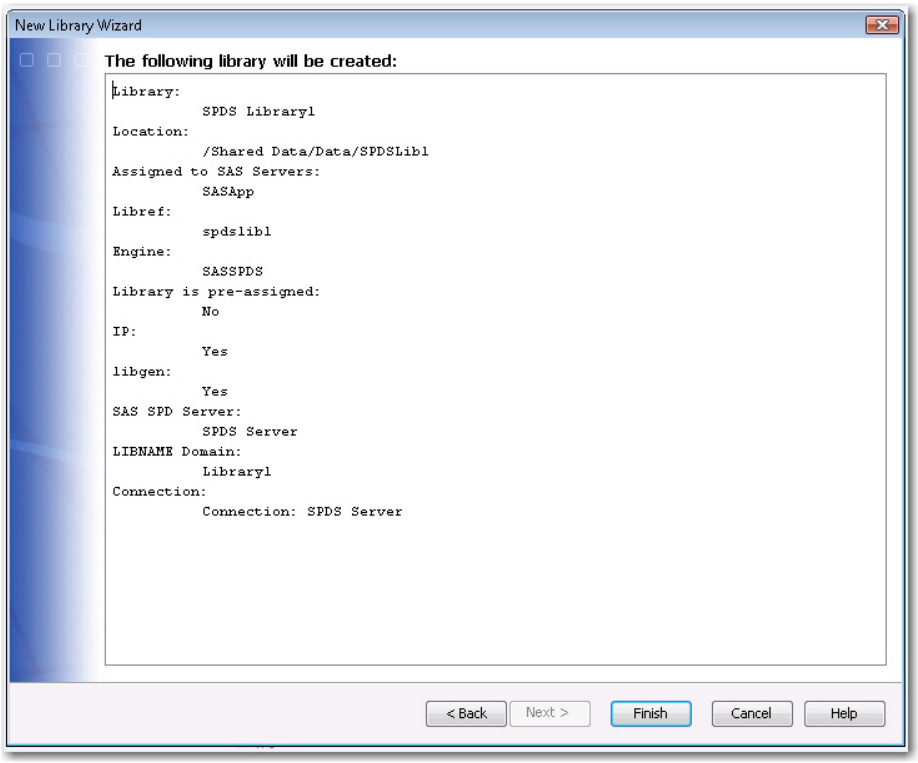
12. Enter a name for your authorization domain. Then click **OK** to return to the wizard.



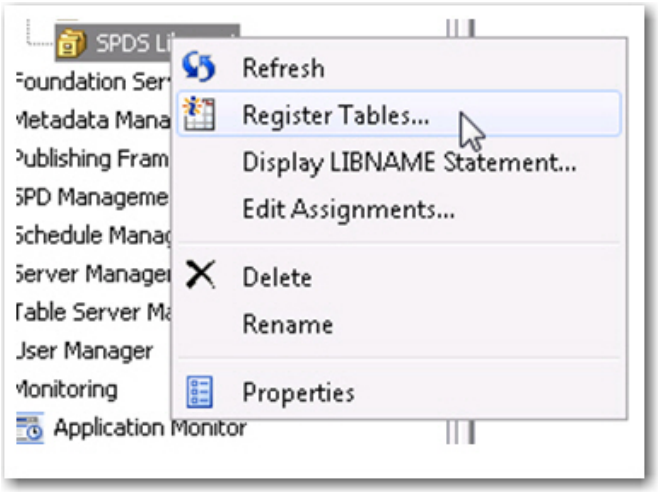
13. Ensure that your new authentication domain is listed appropriately in the **Authentication Domain** list box. Then click **Next**.



14. On the summary page that appears, verify your library definition (which should be similar to the following display). Then click **`Finish`** to continue to the next part of the wizard.



15. On the main page in SAS Management Console, select **SPDS Libraries ► Register Tables** to register your SAS SPD Server tables.



Defining Your SPDTemp Library

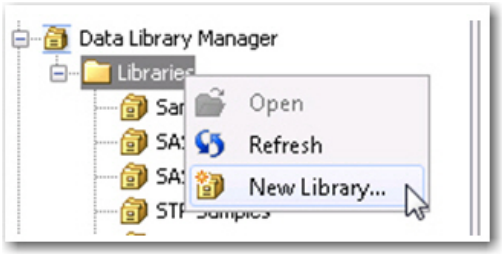
In addition to your SAS SPD Server data libraries, you also must define a library named SPDTemp. This temporary location is used to create temporary files that are required by SAS Web Report Studio. The next section, "Defining Your Query Cache (WRSTEMP) Library," provides more information about these temporary files.

To define your SPDTemp library:

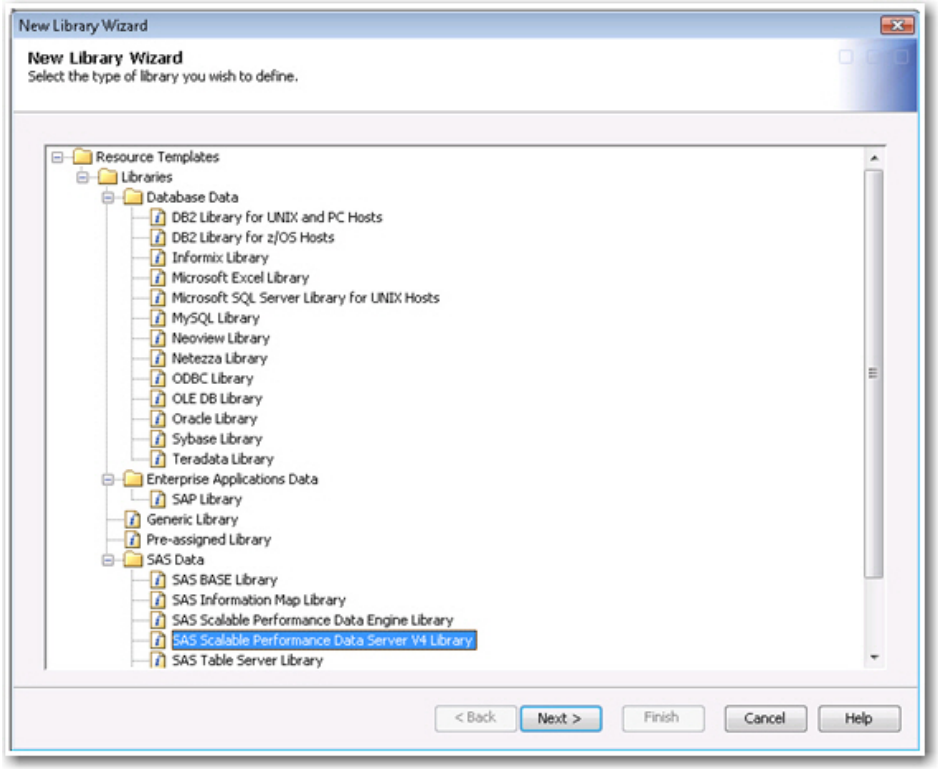
1. Define the SPDTemp library in the libnames.parm file, as follows:

```
libname=SPDTemp pathname=library-pathname owner=your-user-id
                roptions="metapath=('your-meta-path')
                datapath=('your-data-path')
                indexpath=('your-index-path');
```

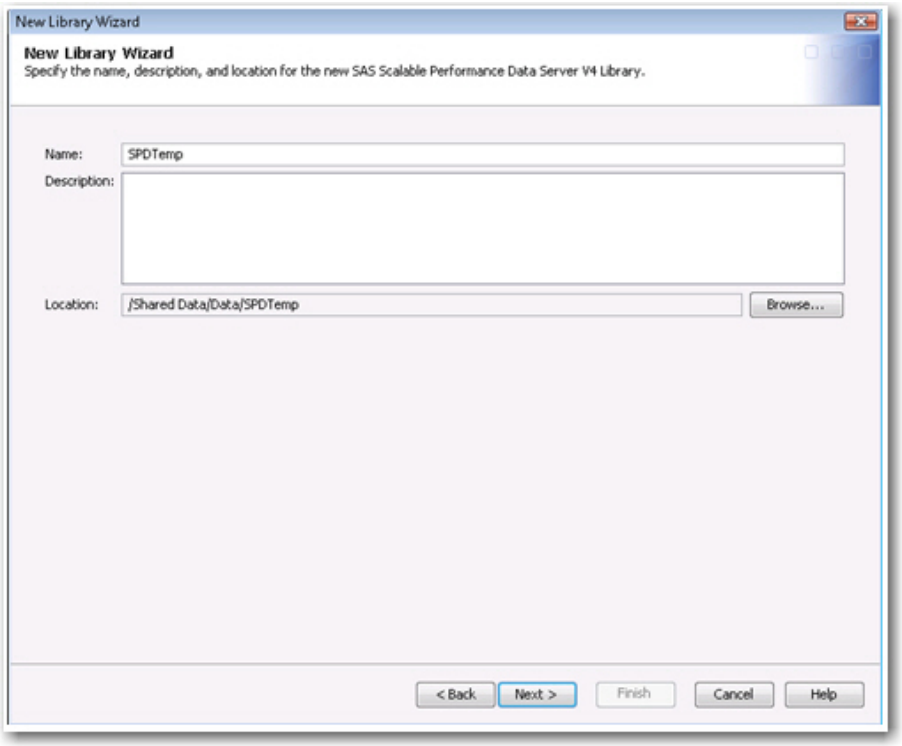
2. In SAS Management Console, select **SAS Libraries ► New Library** to open the New Library Wizard.



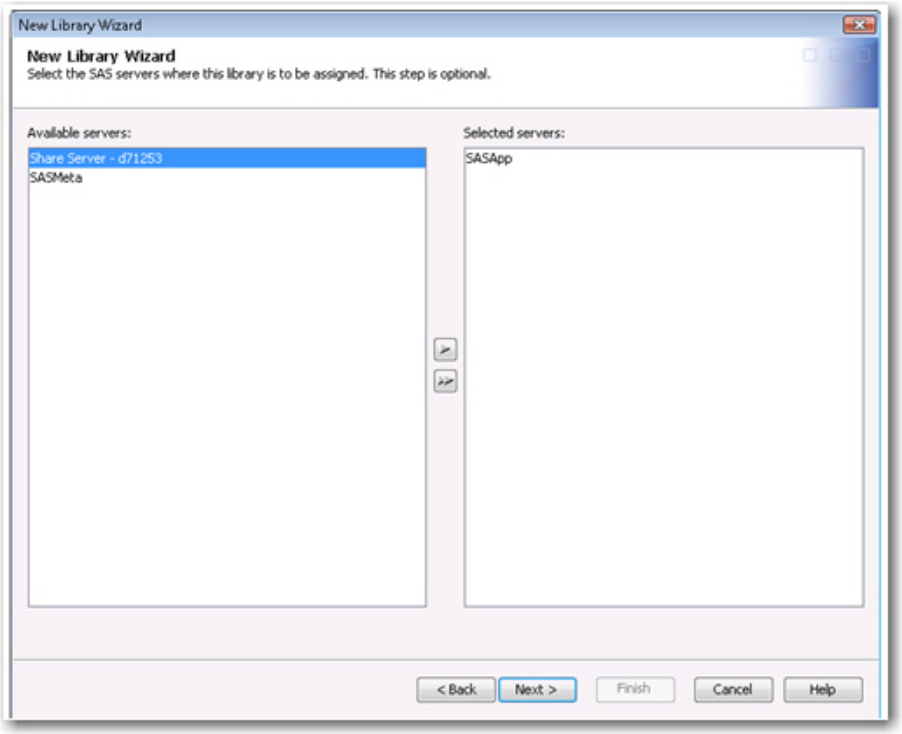
3. Select **SAS Scalable Performance Data Server V4 Library** as your library type.



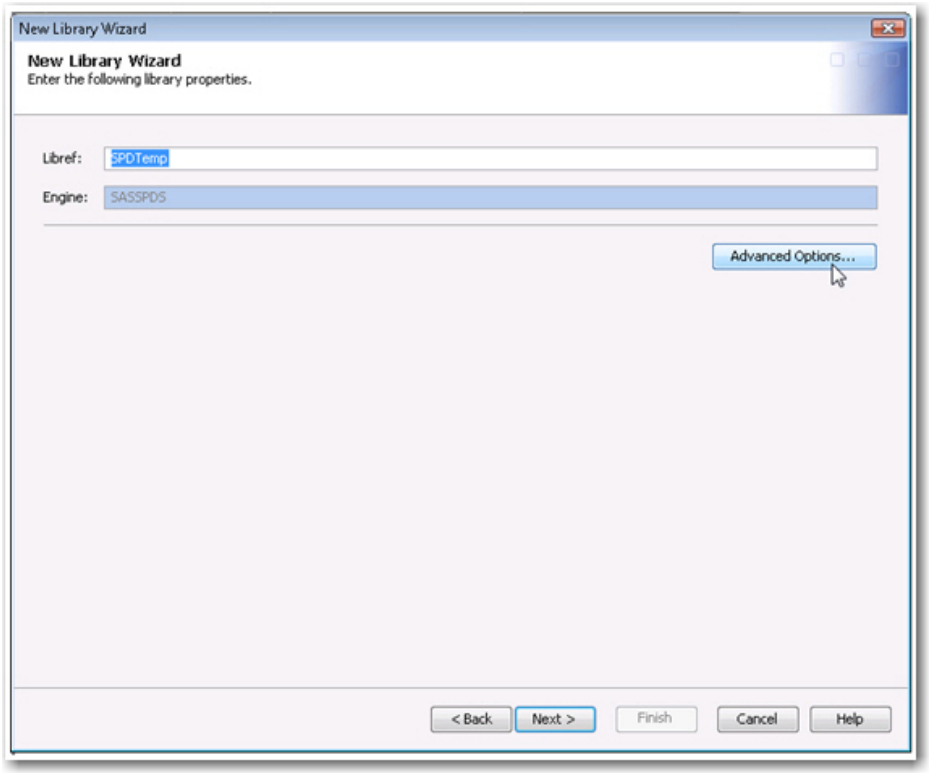
4. Enter **SPDTemp** as the name of your SAS SPDTemp library, and specify a metadata location. **Note:** You must use SPDTemp as the name for this library.



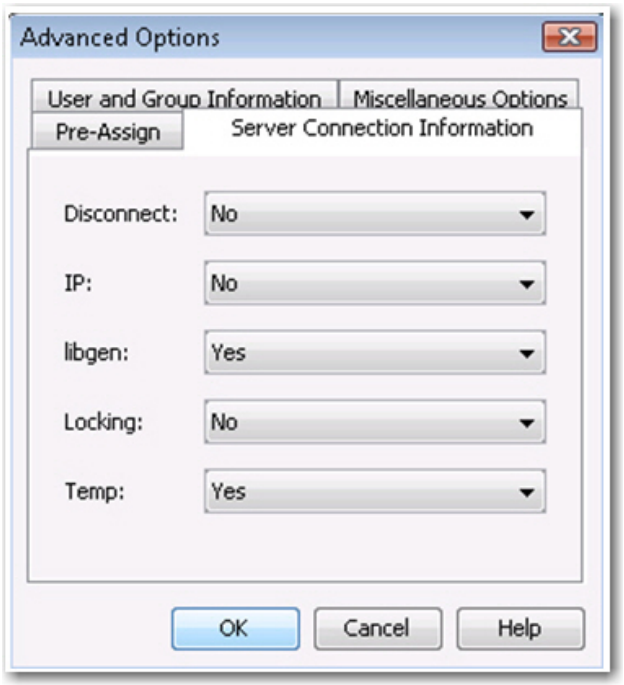
5. Select the application server with which to associate the library. Select the appropriate server in the **Available Servers** list. Click the single arrow to move the server to the **Selected servers** list. Then click **Next**.



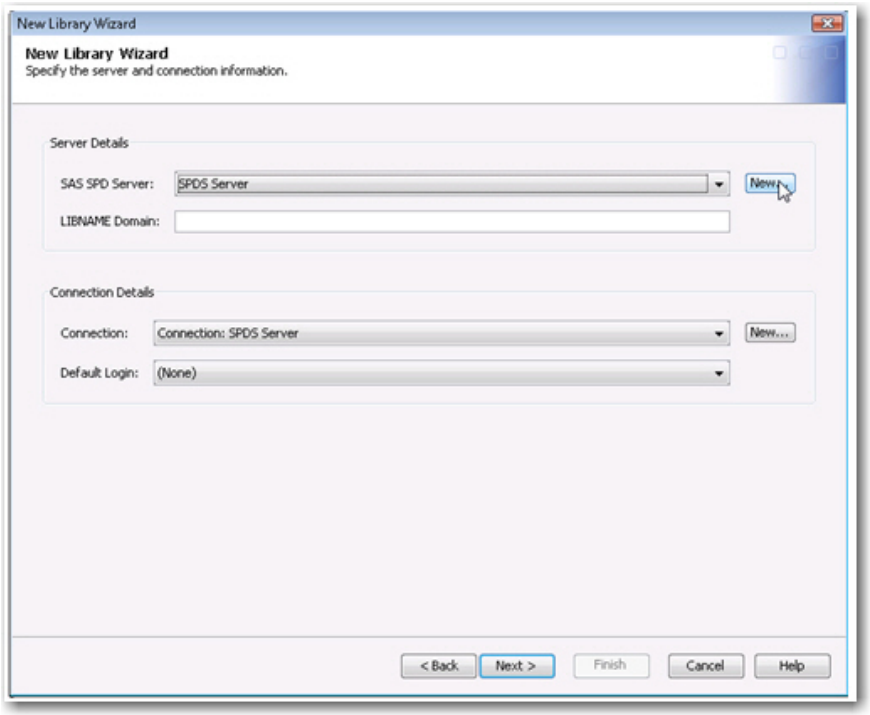
6. Enter a library reference for you library in the **Libref** text box, as shown in the following display:



7. Click **Advanced Options** to display the Advanced Options dialog box. On the **Server Connection Information** tab, select **Yes** for both the **libgen** and the **Temp** list boxes, as shown below. Then click **OK** to return to the wizard.

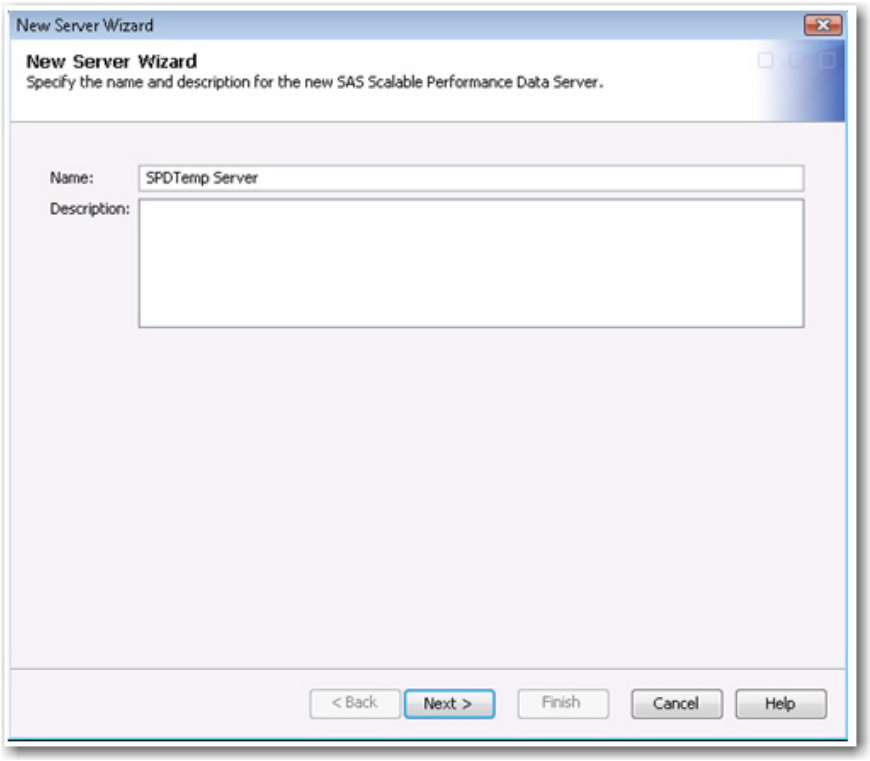


8. Click **New** to the right of the **SPD Server** list box.

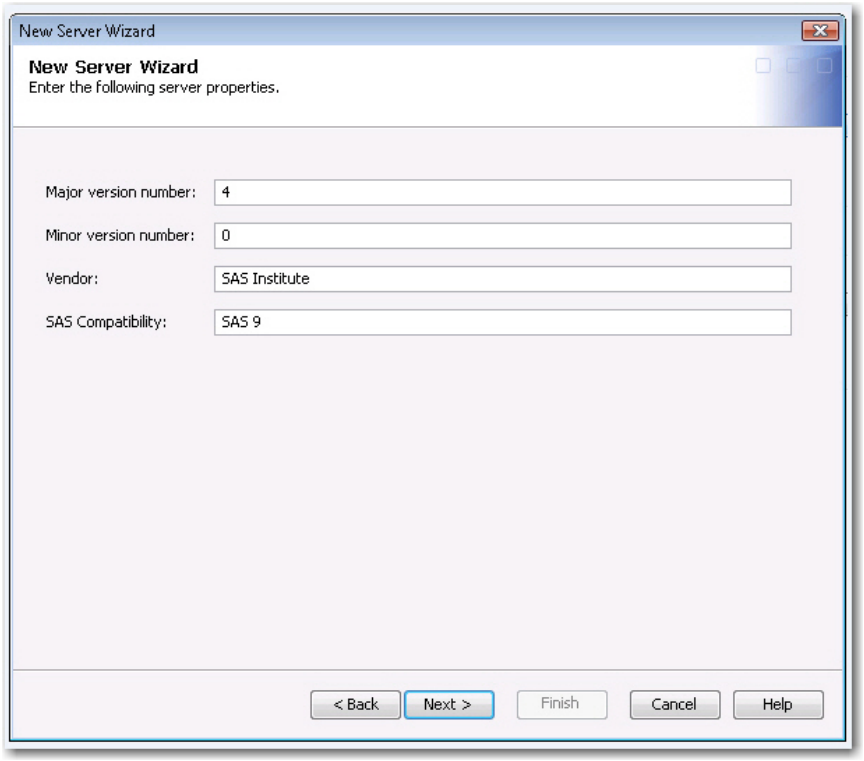


This action opens the New Server Wizard page, from which you can define a SAS SPD Server connection.

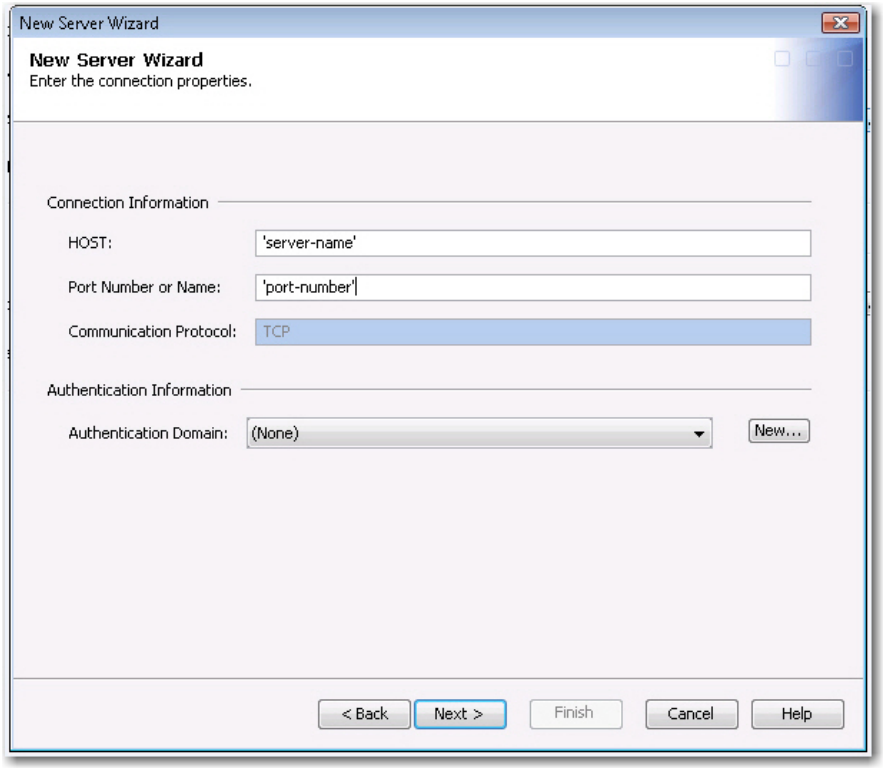
9. Provide a name for your SAS SPD Server connection, as show below. Then click **Next**.



10. Leave the default version numbers and click **Next**.

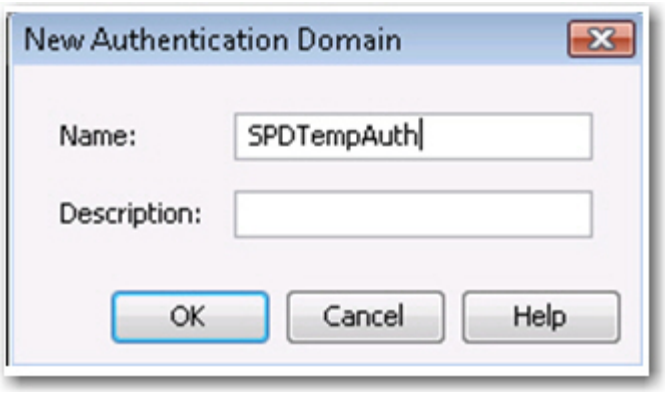


11. Provide the SAS SPD Server host information and port number for SAS SPD Server. As shown in the following display, single quotation marks are required around the server and port name.

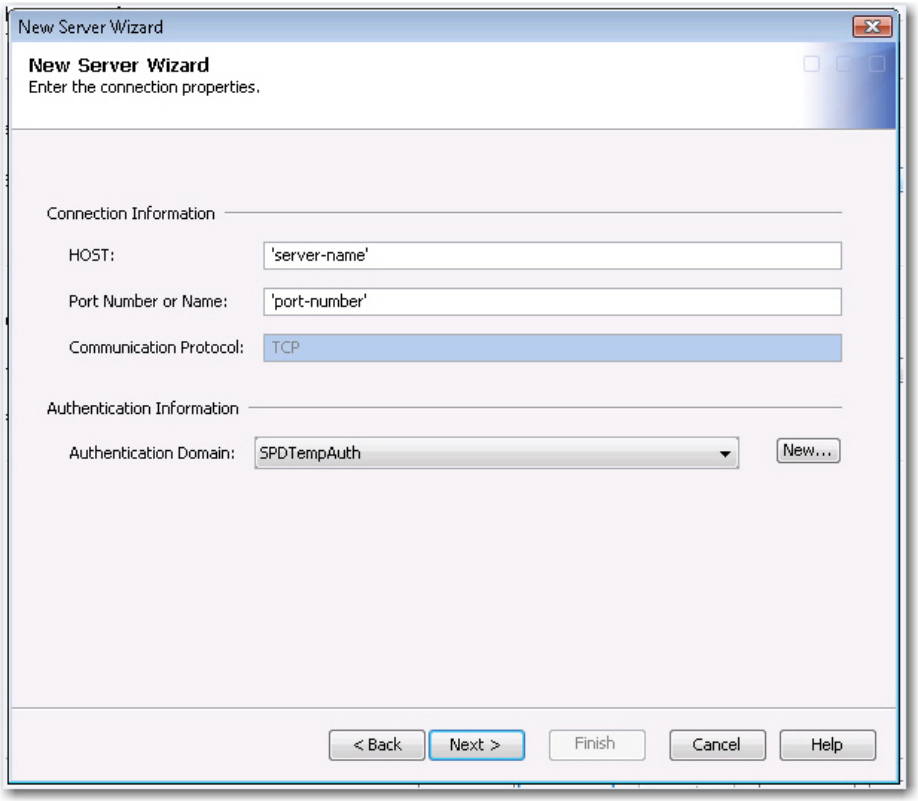


12. Click **New** (next to **Authentication Domain**) to open the New Authentication Domain dialog box, which enables you to define a new authorization domain for SPDTemp.

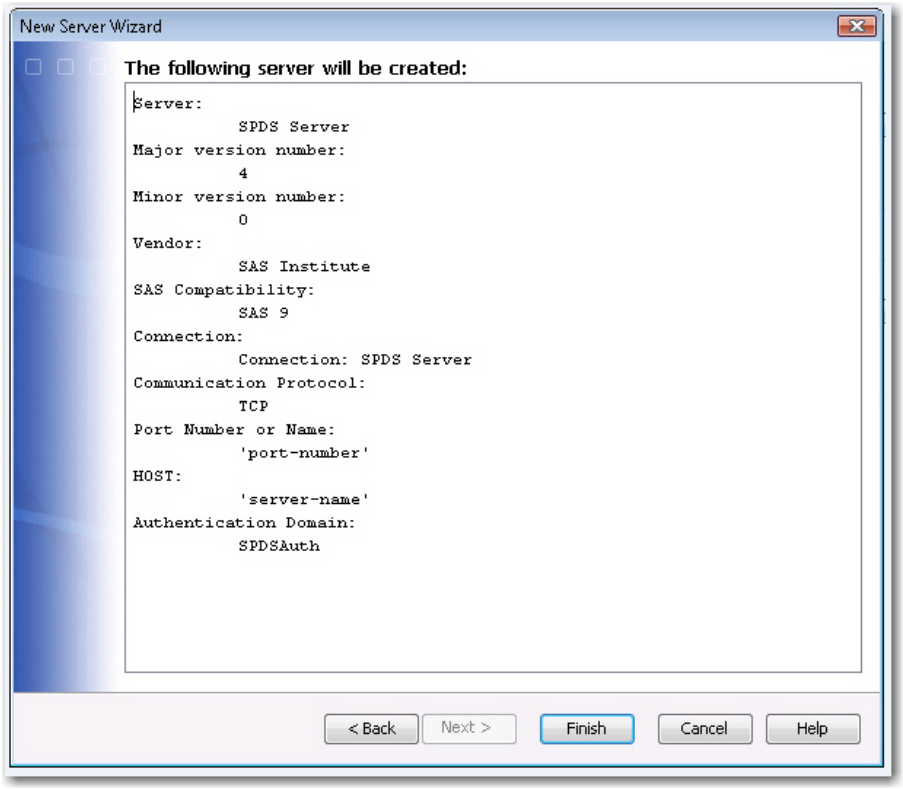
13. Enter a name for your new authorization domain, as shown below. Then click **OK** to return to the wizard.



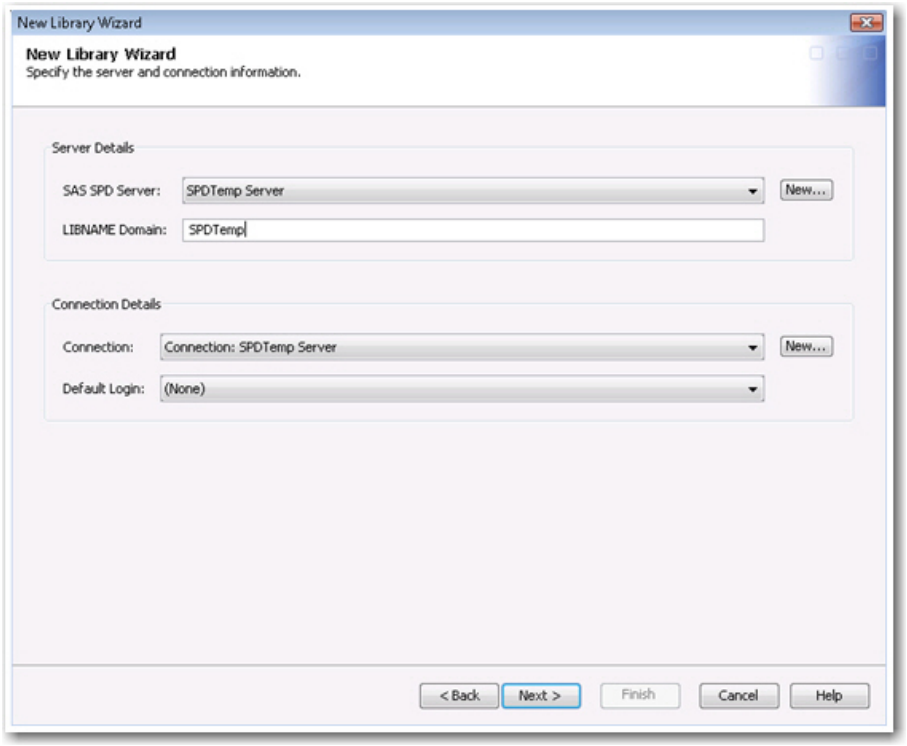
14. Ensure that your new authentication domain is listed appropriately in the **Authentication Domain** list box, as shown in the following display. Then click **Next**.



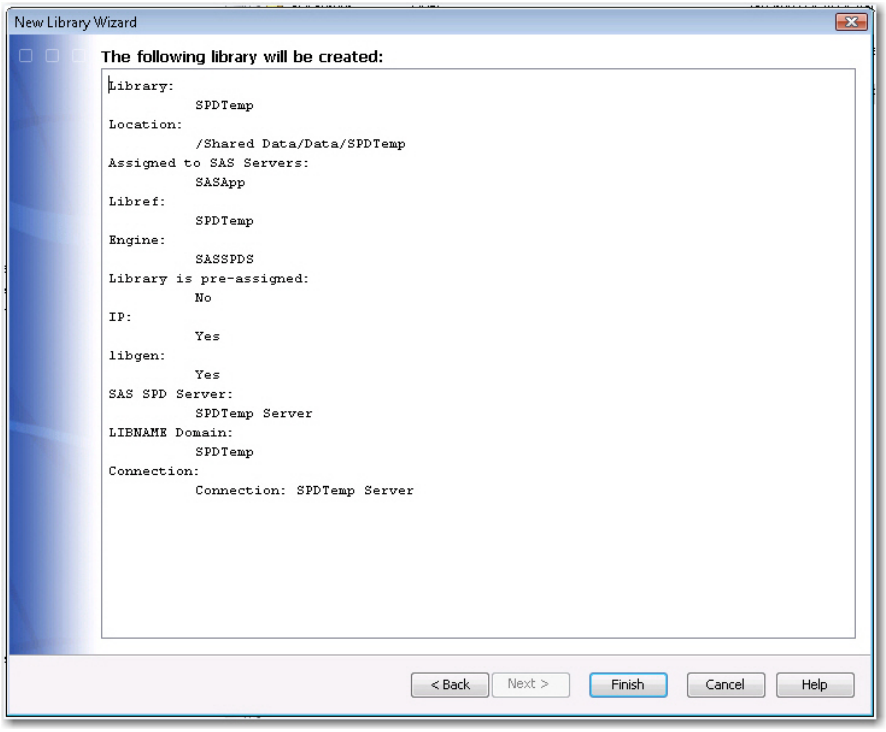
15. Verify your new server definition. Then click **Finish** to continue to the next page of the wizard.



16. Enter **SPDTemp** as the value for **LIBNAME Domain**. Then click **Next**.



17. Verify the new library definition. Then click **Finish** to complete you SAS SPD Server library definition.



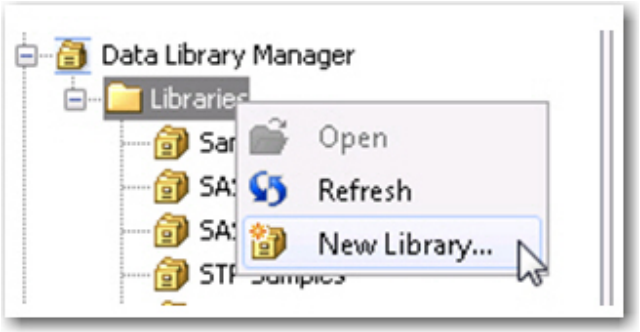
Defining Your Query Cache (WRSTEMP) Library

By default, SAS Web Report Studio uses a large query cache to improve performance. For reports that contain more than one data-driven object, this cache maximizes efficiency. The query cache builds a temporary, common data table that can fulfill the needs of all data-driven objects in the report. When the query cache is used, complex queries that include functions such as joins and filters are run only once (to build the common data table). Each data-driven object in the report can then run simple extraction queries against the common data table. For additional information about the query cache, see *SAS® 9.2 Intelligence Platform: Web Application Administration Guide, Third Edition* (support.sas.com/documentation/cld/en/biwaag/63536/PDF/default/biwaag.pdf).

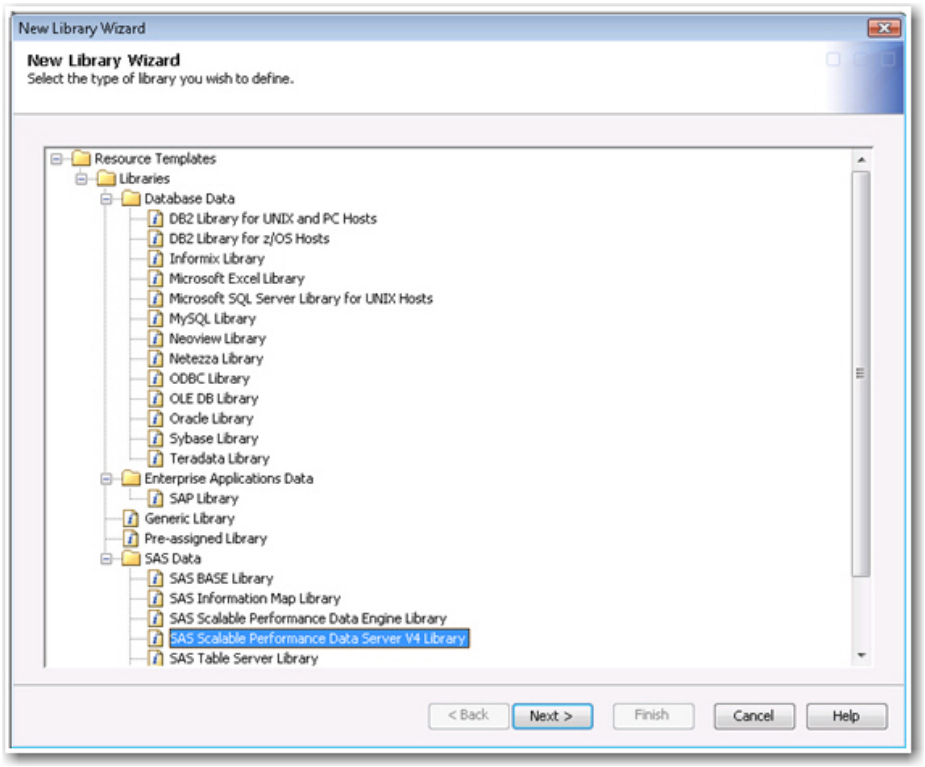
Note: The WRSTEMP location must point to the SPDTemp library created in the previous section.

To define the WRSTEMP library:

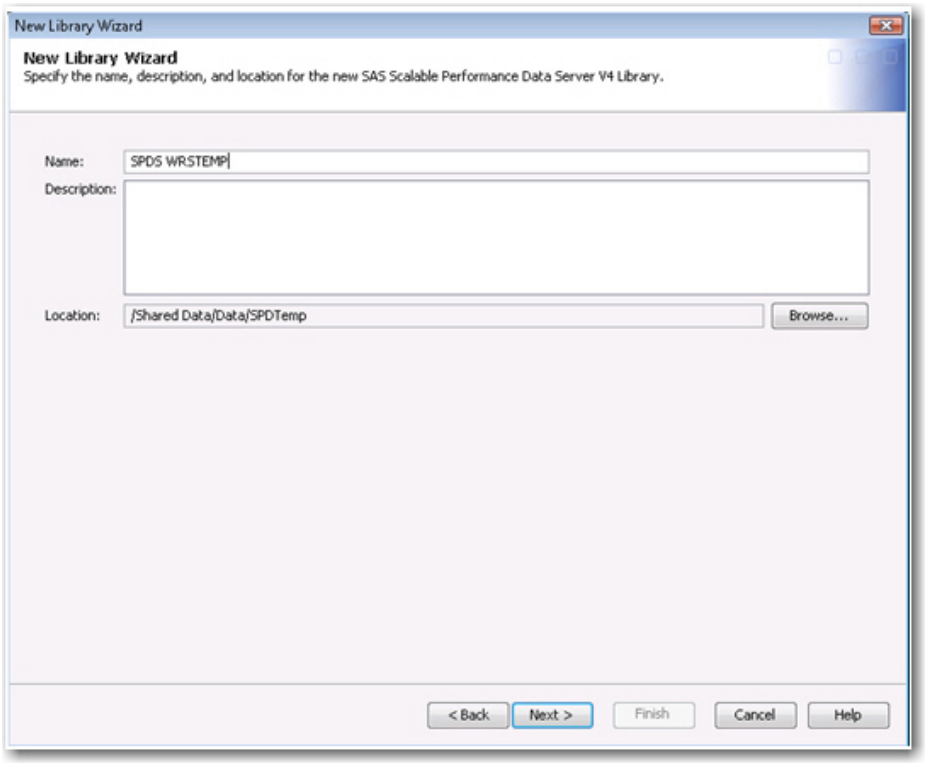
1. In SAS Management Console, select **Libraries ► New Library**.



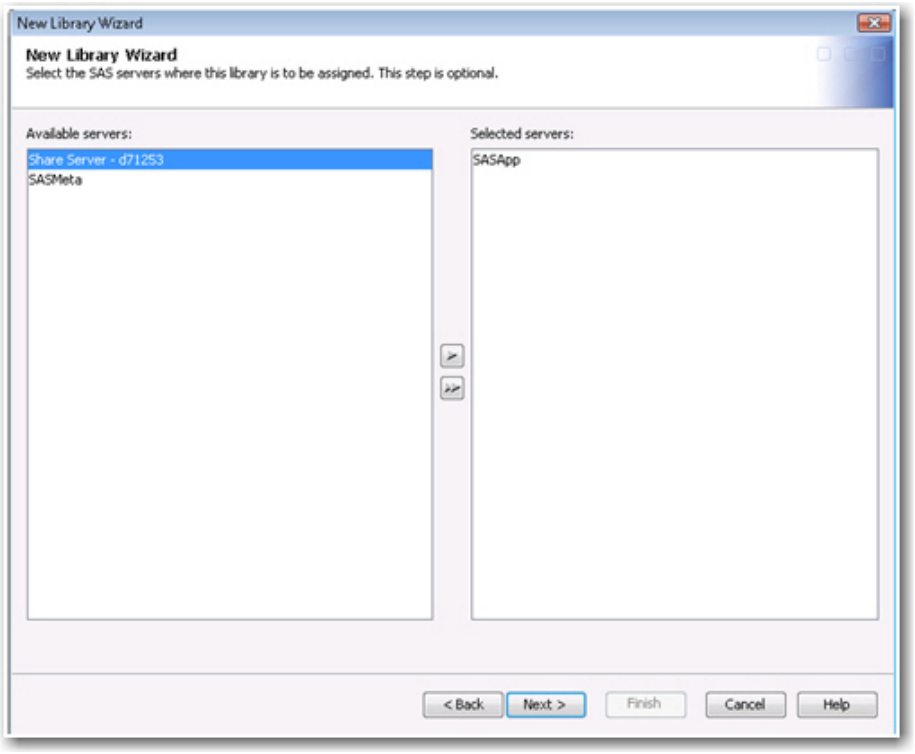
2. Select **SAS Scalable Performance Data Server V4 Library** as your library type. Then click **Next**.



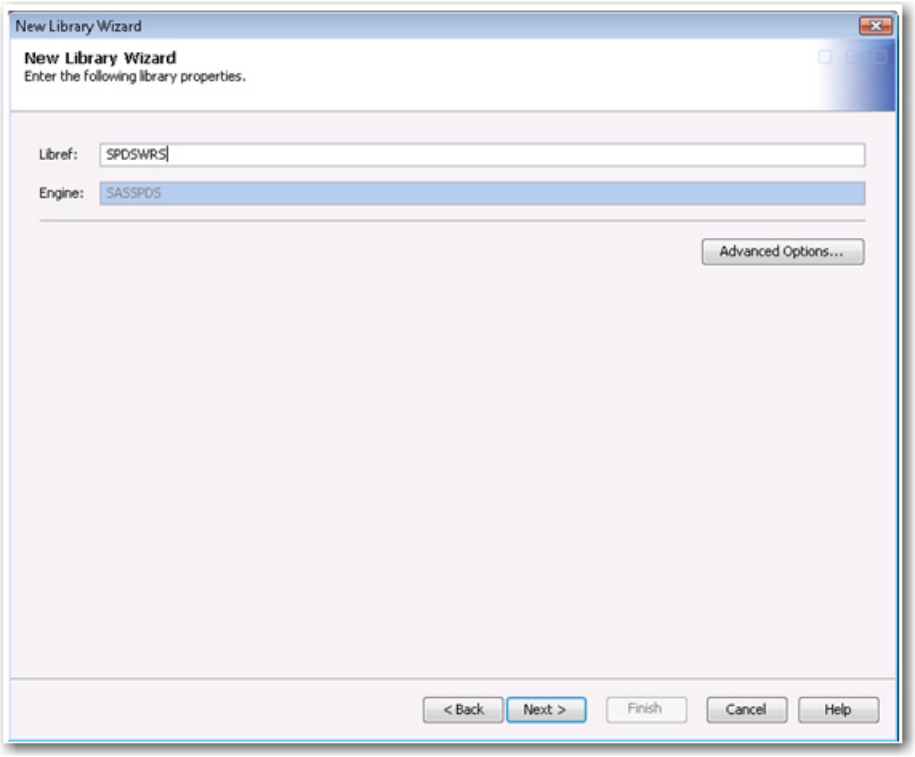
3. Enter a name and a metadata location for your SAS SPD Server WRSTEMP library. Then click **Next**.



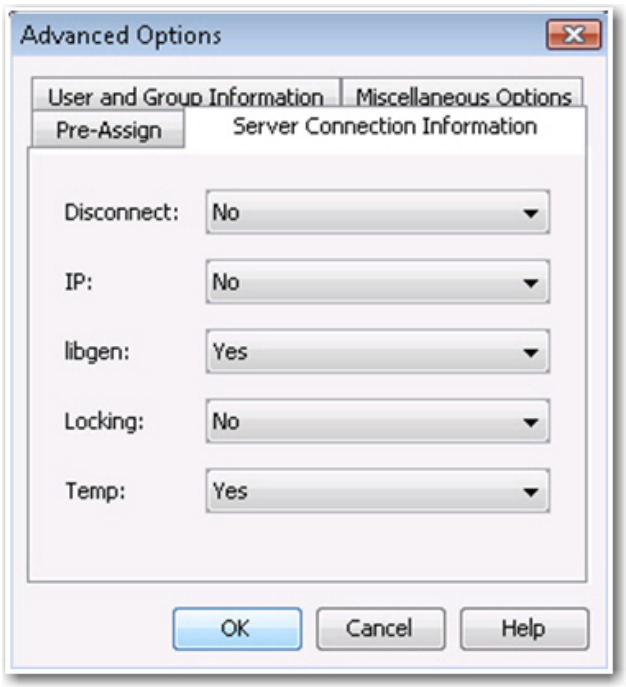
4. Select the application server with which to associate the library. Select the appropriate server in the **Available Servers** list. Click the single arrow to move the server to the **Selected servers** list. Then click **Next**.



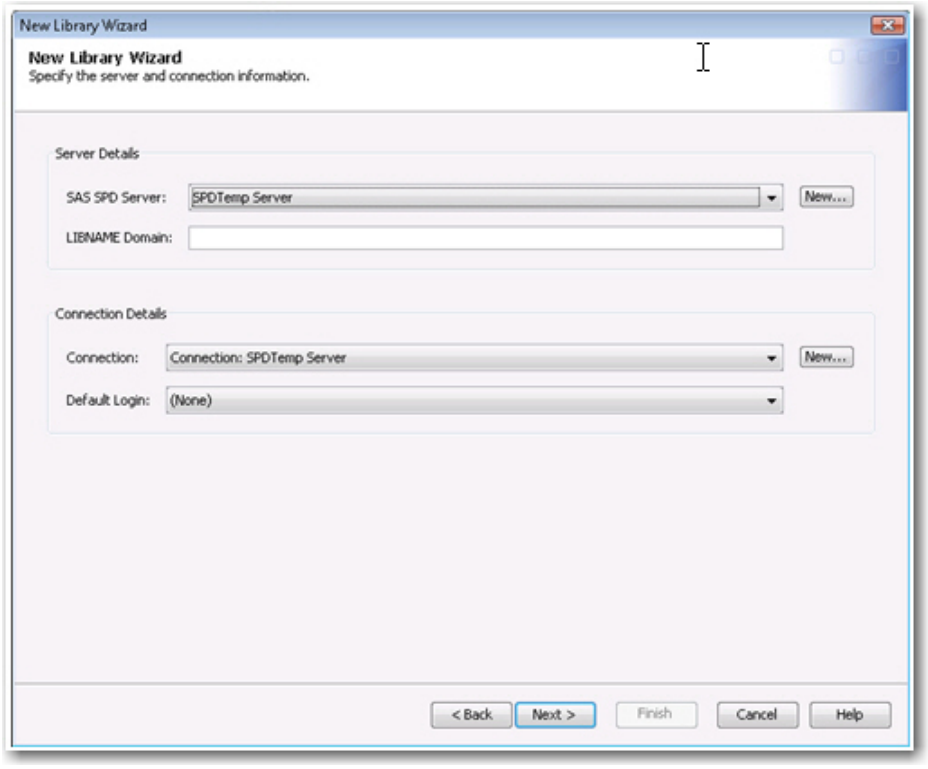
5. Enter a library reference (libref) for you library. Then click **Next**.



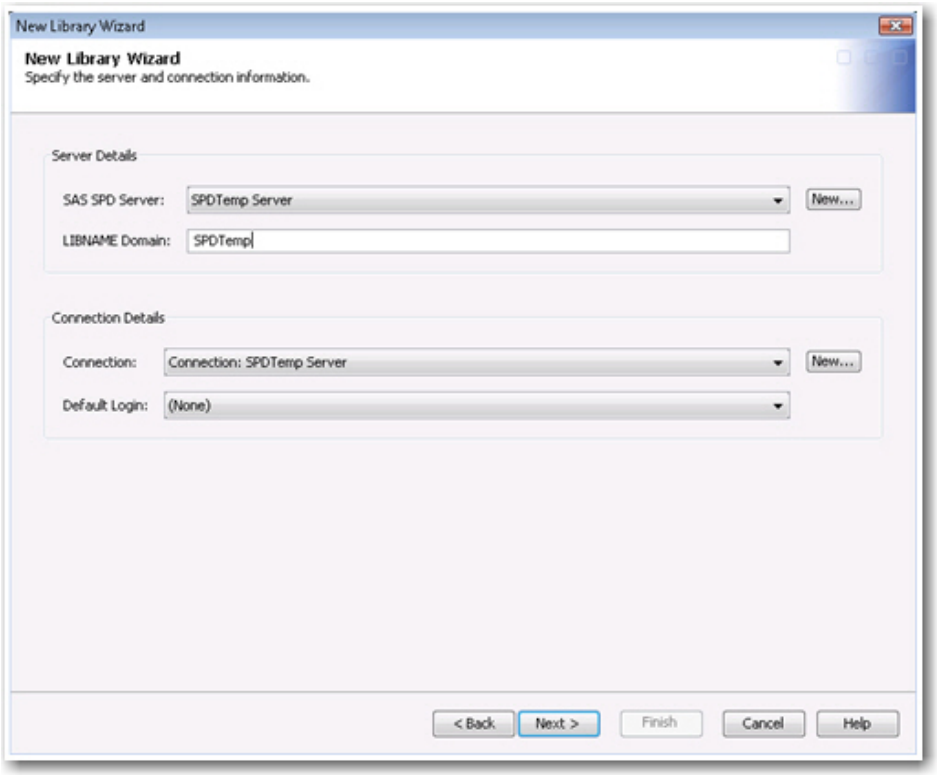
6. Click **Advanced Options** to display the Advanced Options dialog box. On the **Server Connection Information** tab, select **Yes** for both the **libgen** and the **Temp** list boxes, as shown below. Then click **OK** to return to the wizard.



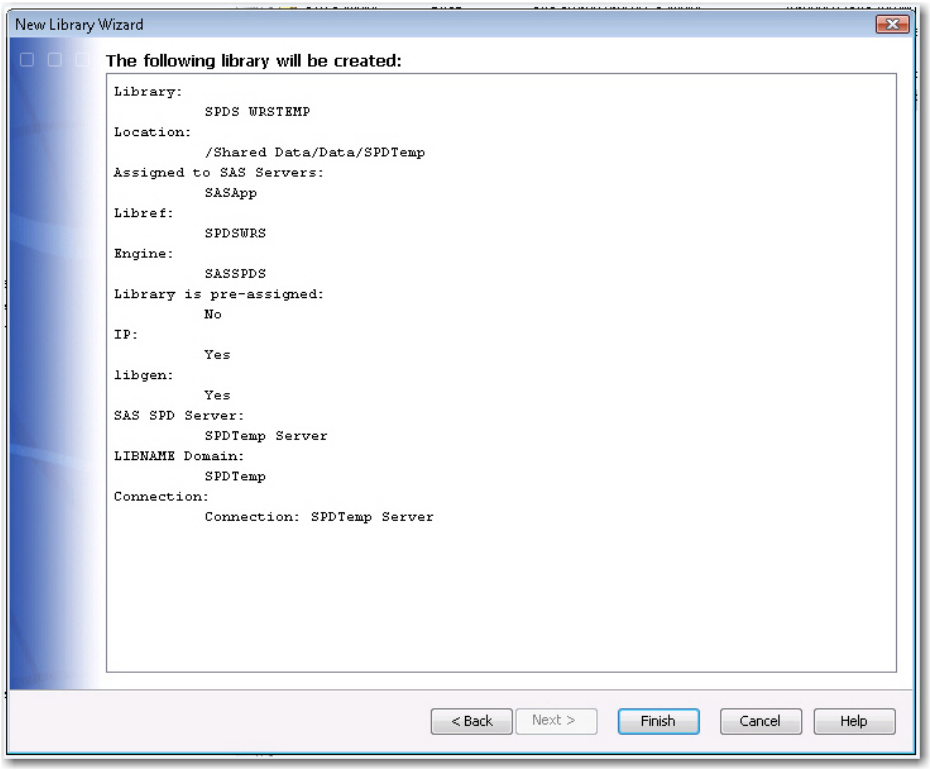
7. From the **SAS SPD Server** list, select **SPDTemp Server**, which you created in the previous section. Then click **Next**.



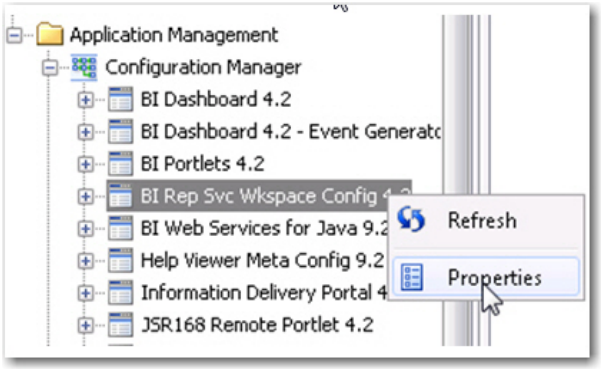
8. Enter **SPDTemp** as the value for **LIBNAME Domain**.



9. Click **Finish** to complete you SPDS WRSTEMP library definition.

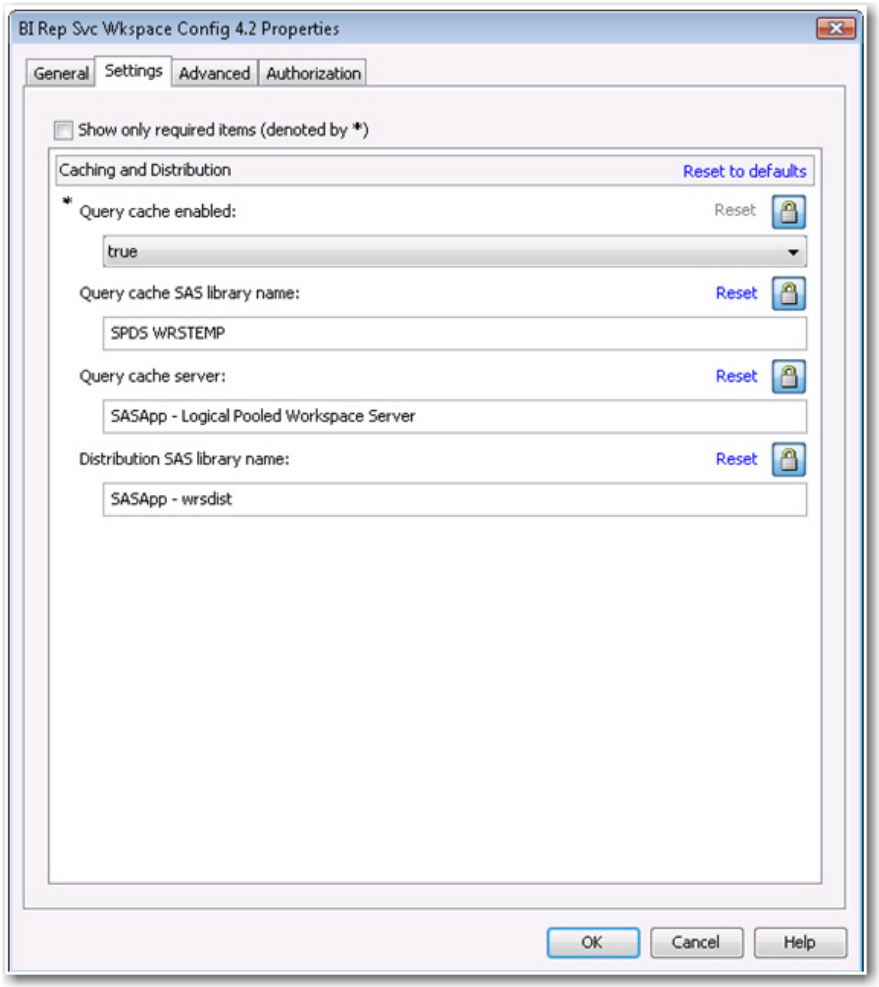


10. Select **Application Management ► Configuration Manager**. Then right-click **BI Rep Svc Wkspace Config 4.2**. and select **`Properties`**.



Note: The name of the configuration property for SAS Web Report Studio 4.3 will differ.

11. In the BI Rep Svc Wkspace Config 4.2 Properties window, change the query cache SAS library name to **`SPDS WRSTEMP`**. Then click **`OK`**.



12. Restart your Web application server for this change to be honored.

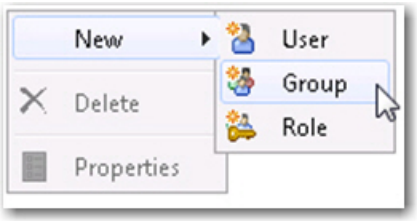
Creating and Organizing Users and Groups

Now you are ready to define the users and groups that will access the various data in these SAS SPD Server libraries. This section demonstrates how to use shared credentials in metadata groups to allow access to appropriate data.

Defining a Metadata Group to Access a SAS® SPD Server Library

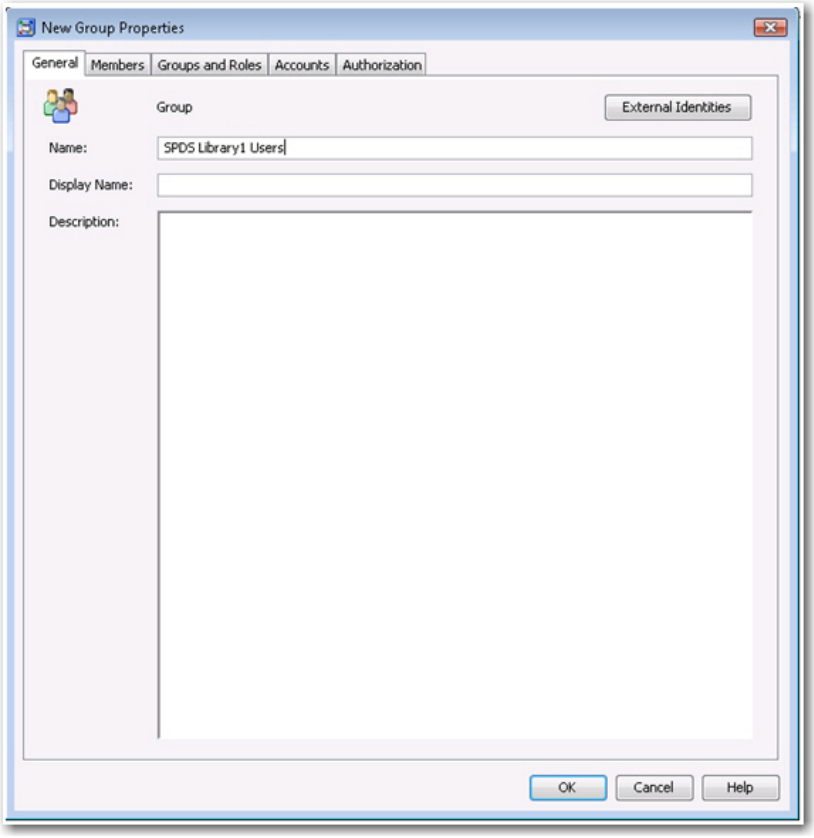
The following steps illustrate how to define a metadata group with Read access to a library called Library1 in SAS SPD Server:

1. In SAS Management Console, select **New ► Group** under the User Manager plug-in.

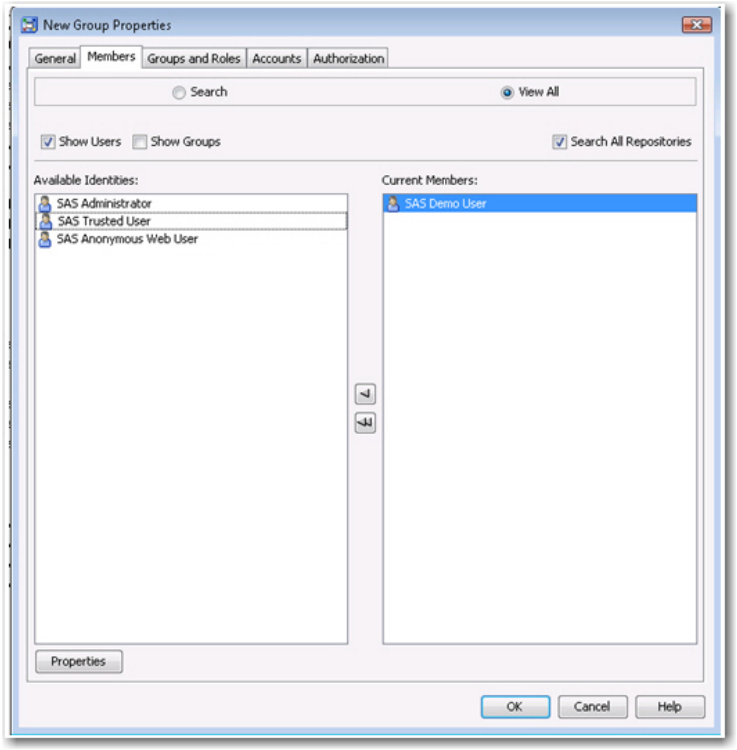


   This selection opens the New Group Properties dialog box.

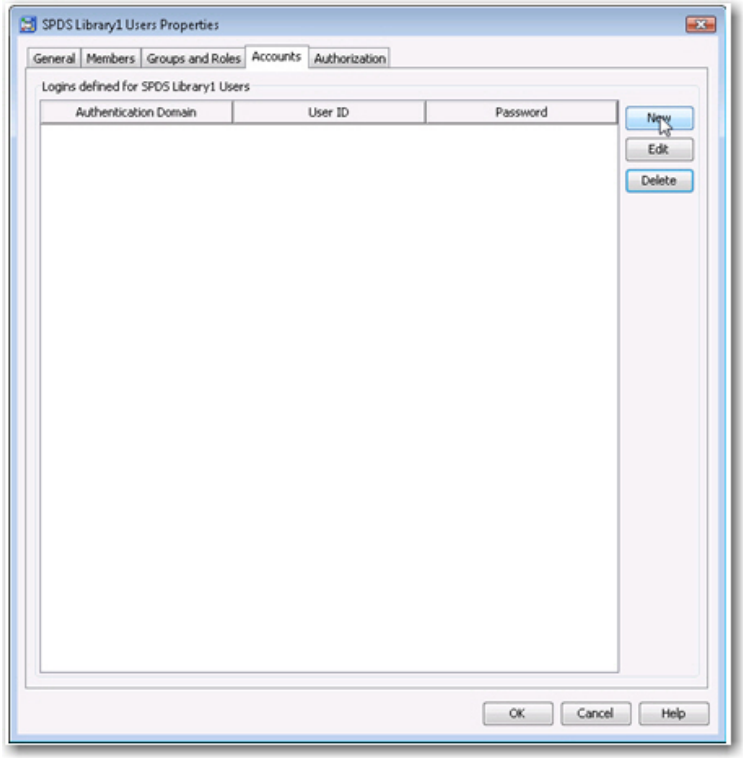
2. On the **General** tab in the dialog box, enter a name for your group. Then click **OK**.



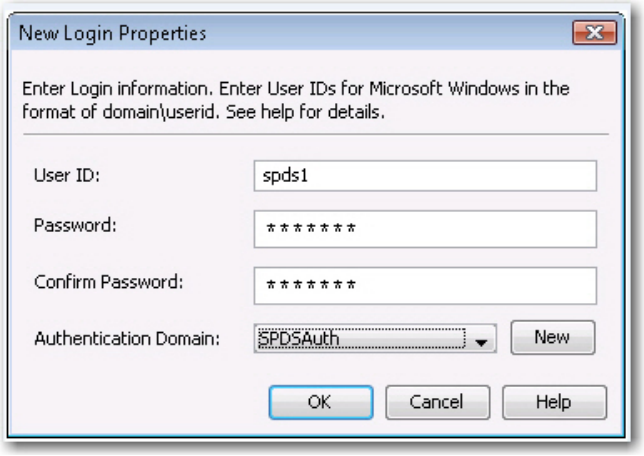
3. On the **Members** tab, add metadata users that you want to have access to Library1. To add the users, select them in the **Available Identities** list. Then click the single arrow to move the selected users to the **Current Members** list. Then click **OK**.



4. On the **Accounts** tab, click **New** to open the New Login Properties dialog box, which enables you to create log-on credentials that can be used to access Library1 in SAS SPD Server. Then click **OK**.



5. Enter the credentials that enable access to the Library1 group in SAS SPD Server. You should add the user ID, the password, and the authentication domain (**`SPDSAuth`**).



Notes:

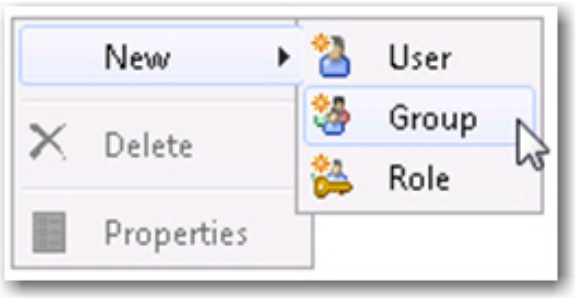
- The credentials you enter should have Read permission for the Library1 library in SAS SPD Server.
- In this example, there are two more groups similar to this one with access to two additional SAS SPD Server libraries (Library2 and Library3). You define these groups in the same way as the first group. These additional groups are used in the next part of the example.

Defining a Metadata Group to Access the Temporary Location of the SAS® Web Report Studio Query Cache

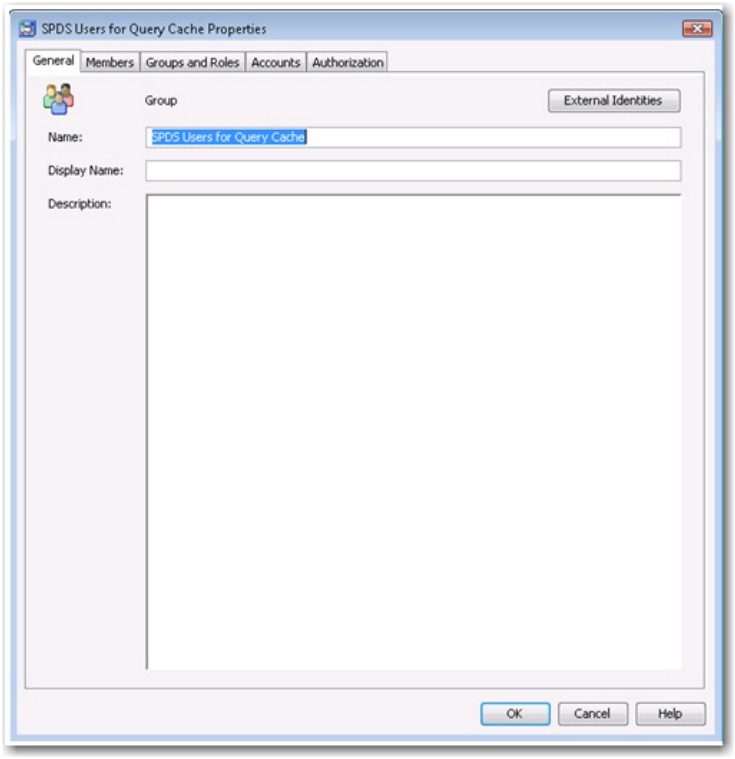
After you create a group that can access both the SAS SPD Server libraries (Library1, Library2, and Library3) and the associated metadata users with this group, you are ready to create a new group. This group will interact with the temporary data location that is used for the SAS Web Report Studio query cache, and it provides access for the users and groups created in the last section.

To set up this new group:

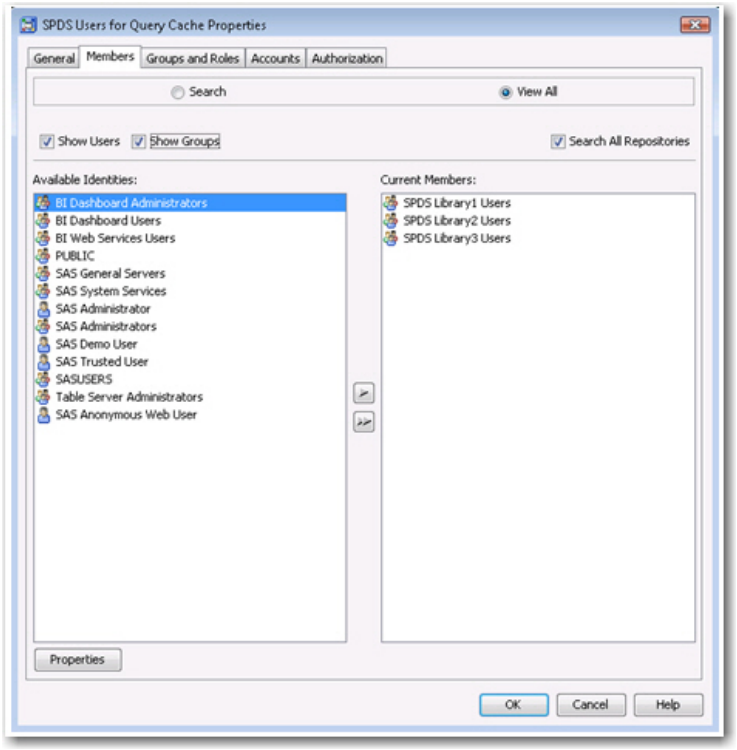
1. Under the User Manager plug-in in SAS Management Console, select **New ► Group**.



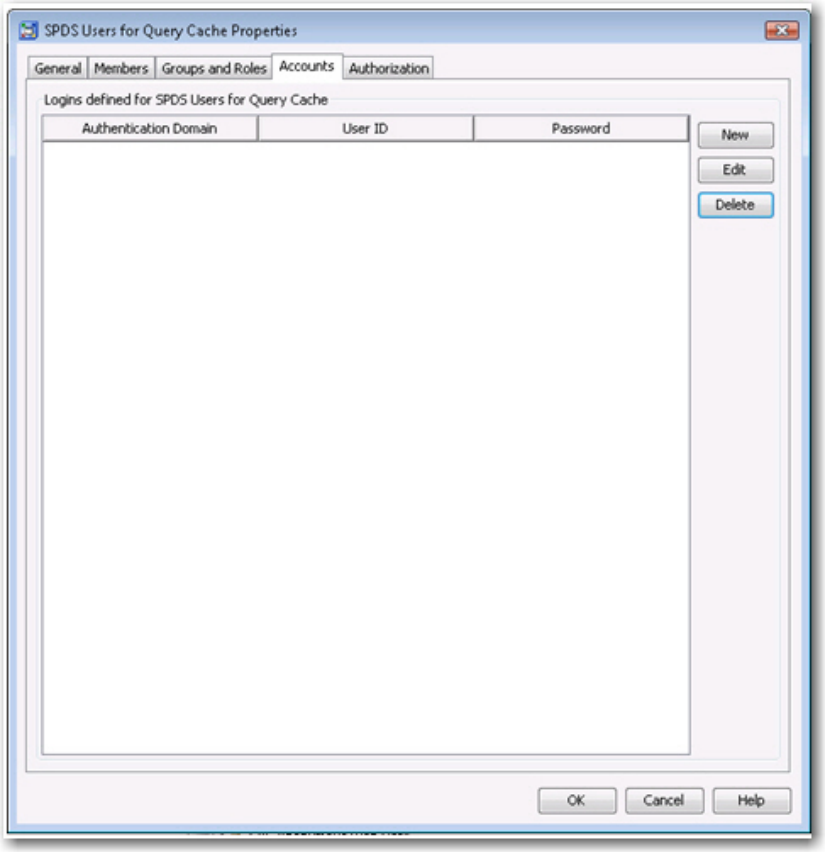
2. Enter a name for the new group:



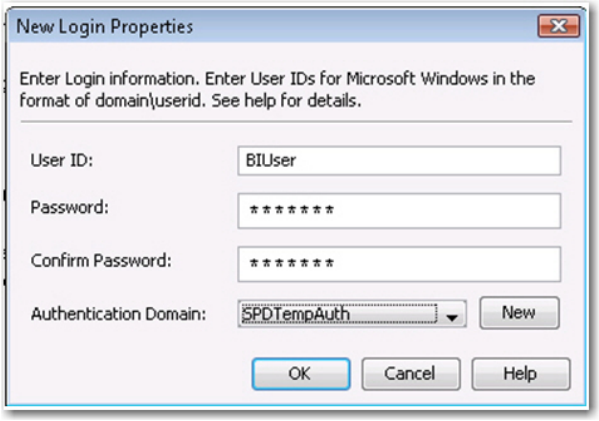
3. On the **Members** tab, add the names of the groups (created in the previous section) that grant access to the data. To add the groups, select them from the **Available Identities** list and click the single arrow to move the selections to the **Current Members** list.



4. On the **Accounts** tab, click **New** to open the New Login Properties dialog box, which enables you to create log-on credentials that can be used to access Library1 in SAS SPD Server. Then click **OK**.



5. Enter the credentials that enable access to the temporary data library. You should add the user ID, the password, and the authentication domain (**SPDSTempAuth**). **Note:** These credentials should have Read and Write permissions for the SPDTemp library in SAS SPD Server.



You have now finished configuring SAS Web Report Studio. Using this configuration, users that are associated with SAS SPD Server data libraries (Library1, Library2, and Library3) have Read access because of their inclusion in their respective groups. Associating all SAS SPD Server groups with the SPDTemp (SPDS Users for Query Cache) ensures that all members in those groups have Read and Write access to the query cache.