SAS® Forecast Server 1.4

Post-Installation Tasks

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SAS® Forecast Server 1.4: Post-installation Tasks

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Post-installation Tasks

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Post-installation Tasks

Post-installation Tasks Checklist

There are tasks that you must perform manually after you successfully install your SAS Forecast Server software and after you complete the SAS Configuration Wizard tasks. Table 1 is a tool that you can use to keep track of your progress. You can print this checklist and add check marks in the Done column after you complete each task.

Table 1. Post-installation Tasks Checklist

Step	Tier	Task	Done
Before You Begin			
1	Server tier	Install current hot fixes.	[ ]
UNIX Operating Environments			
1	Server tier	Define a user group and permissions to access metadata.	[ ]
2	Middle tier	Configure the SAS Analytics Platform to run as a background process.	[ ]
3		Complete the post-installation tasks for all environments.	[ ]
All Operating Environments			
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3	Middle tier	Create the file directory.	[ ]
4	Middle tier	Import the default set of stored processes.	[ ]
5	Middle tier	Configure the stored process service.	[ ]
6	Middle tier	Enable the Search for Servers functionality (optional).	[ ]
Windows Operating Environment			
1		Complete the post-installation tasks for all environments.	[ ]
2	Server tier	Set file system permissions.	[ ]
3	Middle tier	Configure the SAS Analytics Platform as a Windows service.	[ ]

Before You Begin

Server Tier

Install Current Hot Fixes

You must install the current hot fixes for SAS 9.1.3 on the machine that is running the SAS Workspace Server (server tier). You must install the hot fixes on the server tier before you start the SAS Forecast Server post-installation tasks.

The required hot fixes can be downloaded from the following Web address: http://ftp.sas.com/techsup/download/hotfix/e9_sbcs_home.html

1. Select **Sorted by SAS Product** and then **Base SAS** or **SAS Integration Technologies**.
2. To search for SAS Forecast Server hot fixes, select **Hot Fixes for Additional SAS Products and Solutions** and scroll to **Forecast Server 1.4**. If no hot fixes exist, then you will not see a Forecast Server 1.4 selection. Do NOT install any previous versions of SAS Forecast Server hot fixes. These hot fixes already exist in SAS Forecast Server 1.4 software.

CAUTION: At the minimum, you must install the following system hot fixes in order for the system to function:

- E9BA16 (Base SAS)
- E9BA20 (Base SAS)
- E9BA26 (Base SAS)
- E9BA27 (Base SAS)
- E9BB05 (Base SAS —Windows only)
- E9IH01 (SAS Integration Technologies)

CAUTION: Service Pack 4 for SAS 9.1.3 and the hot fixes for Service Pack 4 are required in order for SAS Forecast Server to function correctly.

In order to receive Problem Alert Notices or Problem Correction Notices (hot fix notifications) when they are made available, you can subscribe to the TSNEWS-L mailing list. To subscribe, send e-mail to LISTSERV@VM.SAS.COM. The body of the e-mail should read SUBSCRIBE TSNEWS-L. To subscribe through the SAS Technical Support Web site, complete the Web form located at: http://support.sas.com/techsup/news/tsnews.html.

UNIX Administration Tasks

Server Tier

Define a User Group and Permissions to Access Metadata

Different users have different operating system privileges when using the SAS Workspace Server. By defining operating system user groups, you can grant host permissions to all of the SAS Forecast Server users as members of the same group. For SAS Forecast Server, there is a central physical repository of workspace server project files (forecast-studio-project-directory) that must be accessible to the SAS Workspace Server.

For a more secure deployment, you can create a SAS Forecast Server user group, and ensure that the group contains all of the SAS Forecast Server users. You must include any user who might run code that is created from a SAS Forecast Server project in a SAS session as part of the group. Also, the group should be the primary group. For more information about SAS Intelligence Platform security, see the SAS Intelligence Platform documentation set at the following Web site:
`http://support.sas.com/onlinedoc/913/docMainpage.jsp`

If you already created a SAS Forecast Server user group as a pre-installation task, then you can grant the same permissions to everyone in the user group. Later when you create the SAS Forecast Server directories, you must grant Write permission on the SAS Forecast Server directory on all machines where you installed SAS Forecast Server. Be sure to verify that SAS Forecast Server users have Read, Write, and Execute permissions on the SAS Forecast Server file directory. The exact details of how to do this varies according to which operating system groups are defined and how restrictive you want your security to be.

The following method is one suggestion. This method might not be applicable to your situation. Typically, you can create an operating system group for SAS Forecast Server users. The following examples might require changes as per your server configurations. In particular, these examples could result in changed permissions on other SAS files, such as OLAP cubes. For example, if you are working with multiple UNIX groups and have a SAS OLAP Server, you must ensure that the account under which the SAS OLAP Server runs still has read and execute permissions to OLAP files.

You can grant permissions to the SAS Forecast Server users by specifying the umask option on a conditional basis if the user is part of the SAS Forecast Server user group.

1. Set the umask option in the following shell scripts only if the user is a member of the SAS Forecast Server user group:

   - sas.sh
     (located in the **`!SASROOT/`**<*your-configuration-directory*>**`/Lev1/SASMain`** path)
   - sas_SPS.sh
     (located in the **`!SASROOT/`**<*your-configuration-directory*>**`/Lev1/SASMain/StoredProcessServer`** path)

2. A umask setting of 007 is recommended.

On a UNIX operating environment, several lines that are shown in the following script need to be updated based on your machine-specific information.

```
CMD=<your-operating-system-path>
CURR_GID=eval $CMD -g
GID=<solution-group-id>
if [$CURR_GID -eq $GID]; then umask 007 fi
```

1. `CMD=<your-operating-system-path>`
   Replace the CMD= command with the full path on your server where the ID command is stored. This information can be obtained by typing a **`which id`** or **`whence id`** command on your console.
2. `GID=<solution-group-id>`
   Replace the GID variable setting with your group ID. You can type **`id`** on your console in order to get the GID and UID information.

By using the preceding example values, the resulting command lines look like the following for each of the platforms on which you can install SAS Forecast Server:

- AIX:
  ```
  CMD=/usr/bin/id
  CURR_GID=eval $CMD -g
  GID=201
  if [$CURR_GID -eq $GID]; then umask 007
  fi
  ```
- H64 (HP-Risc):

  ```
  CMD=/usr/bin/id
  CURR_GID=eval $CMD -g
  GID=201
  if [ $CURR_GID -eq $GID ] ; then umask 007
  fi
  ```
- H64I (HP-Itanium):
  ```
  CMD=/usr/bin/id
  CURR_GID=eval $CMD -g
  GID=201
  if [ $CURR_GID -eq $GID ] ; then umask 007
  fi
  ```
- S64 (Solaris):
  Note: The following code uses grave accents and not quotation marks.

```
CMD=/usr/xpg4/bin/id
CURR_GID=`$CMD -g`
GID=201
if [ $CURR_GID -eq $GID ] ; then umask 007
fi
```

Middle Tier

Configure the SAS Analytics Platform to Run as a Background Process

By default, the SAS Analytics Platform server terminates when the X Window session that starts the server is closed. In order for the SAS Analytics Platform server to continue to run after the X Window session is closed, perform the following steps:

1. If the SAS Object Spawner is not running, then start the SAS Object Spawner, which starts the SAS Metadata Server and SAS Workspace Server.
2. If other SAS products that you licensed include a Web tier with Remote Services, then start the Remote Services.
3. Run the SAS Analytics Platform Configuration Wizard by submitting the command **`./apserver config`**. Use the sasadm user account and be sure to check the box **Remember password** in order to store your credentials. If you do not store your credentials, then you cannot run the SAS Analytics Platform as a background process.
4. Accept all the default values and settings. For more information about the SAS Analytics Platform, see *SAS Analytics Platform User's Guide* at the following Web address:
   `http://support.sas.com/documentation/onlinedoc/apcore`

   Note: The apserver script is typically found in the following location:
   !SASROOT/SASAPCore/bin
5. Edit the apserver script by adding the **`nohup`** command to the beginning of the Java command. Add an ampersand (**&**) at the end of the Java command as shown in the following example:

   Note: The values shown in these examples may differ slightly from the values in the script at your site.
   Original command:

```
# was $JAVACMD
/SAS_9.1/sasjre/1.4.2/bin/java $CLOPTS
-Djava.rmi.server.hostname=10.16.150.72 -Dap.home="${AP_HOME}"
$OPTIONS com.sas.apps.session.server.Main"$@"
```

   Revised command:

```
 # was $JAVACMD
nohup /SAS_9.1/sasjre/1.4.2/bin/java $CLOPTS
 -Djava.rmi.server.hostname=10.16.150.72 -Dap.home="${AP_HOME}"
 $OPTIONS com.sas.apps.session.server.Main"$@" &
```

6. Stop and restart the SAS Analytics Platform platform server by submitting the following commands:

   ```
   ./apserver stop
   ./apserver start
   ```

   After the SAS Analytics Platform server is restarted, the server remains active even when the X Window session closes.

Complete the Post-installation Tasks for All Operating Environments

After you compete the post-installation tasks for the UNIX operating environment, you must complete the post-installation tasks for all operating environments. For information about these post-installation tasks, see "All Operating Systems Administration Tasks."

All Operating Systems Administration Tasks

Server Tier

Pre-assign Libraries in SAS Management Console

To use your SAS data sets with SAS Forecast Server, you must enable SAS Forecast Server to access the SAS data sets that contain appropriate input data. To enable SAS Forecast Server to access the input data sets, you must define a SAS library that specifies the data set location. All data sets that exist in selected libraries are displayed. Therefore, to enable SAS Forecast Server to access your data, you must create the following:

- an input SAS data set that contains the appropriate time series data.
- a SAS library that specifies the SAS libref, engine, and path of the input data set

To create an input data set and user-defined library, perform the following steps:

1. Create a SAS data set.
   To enable SAS Forecast Server to read a SAS data set, you can create a SAS program that reads your raw data into a SAS data set.

2. Define the library for the SAS Forecast Server input data set.
   To enable SAS Forecast Server to read the input data set, use SAS Management Console to define a library that specifies the SAS libref, engine, and path of the input data set.

   Use the **Data Library Manager** plug-in of SAS Management Console to define a library that is pre-assigned to a server or servers, and specify the location of the input data set. To specify a library as pre-assigned for a server or servers, perform the following steps:

   (a) Open SAS Management Console as the SAS Administrator (e.g., sasadm), and connect to a metadata repository.
   (b) Expand the **Data Library Manager** node, and select **SAS Libraries**.
   (c) Right-click the library that you want to pre-assign, and select **Properties**.
   (d) Select the **Options** tab.
   (e) Click **Advanced Options**.
   (f) Select the **Library is Pre-Assigned** checkbox. This window is accessible from the Library Options window of the New Library Wizard when you create a new data library.
   (g) Ensure that the library is assigned to the correct SAS server(s). The selected library is assigned whenever one of the selected servers starts.
   (h) Click **OK**.

3. Add the METAAUTOINIT option to the server definitions. You need to add the METAAUTOINIT option only once in order to retrieve any pre-assigned library definitions.

   When a SAS Workspace Server starts and the METAAUTOINIT option is specified, the SAS Workspace Server connects to the SAS Metadata Server to retrieve any pre-assigned library definitions. The SAS Workspace Servers that are used by SAS Forecast Server require the METAAUTOINIT option in order to retrieve pre-assigned library definitions from the SAS Metadata Server.

   To add the METAAUTOINIT option to a workspace server definition that is used by SAS Forecast Server, perform the following steps:

   (a) In SAS Management Console, expand the **Server Manager** node. Fully expand all three levels of **SASMain** and any other logical servers that you defined.
   (b) Select a server that is used by SAS Forecast Server
   (e.g., SASMain - Workspace Server, or any other workspace servers that you defined).
   (c) Right-click, and select **Properties**.
   (d) Select the **Options** tab.
   (e) In the **Object Server Parameters** field, enter METAAUTOINIT as shown in Figure 1, and click **OK**.
   (f) Repeat the preceding steps for all workspace servers that SAS Forecast Server uses.

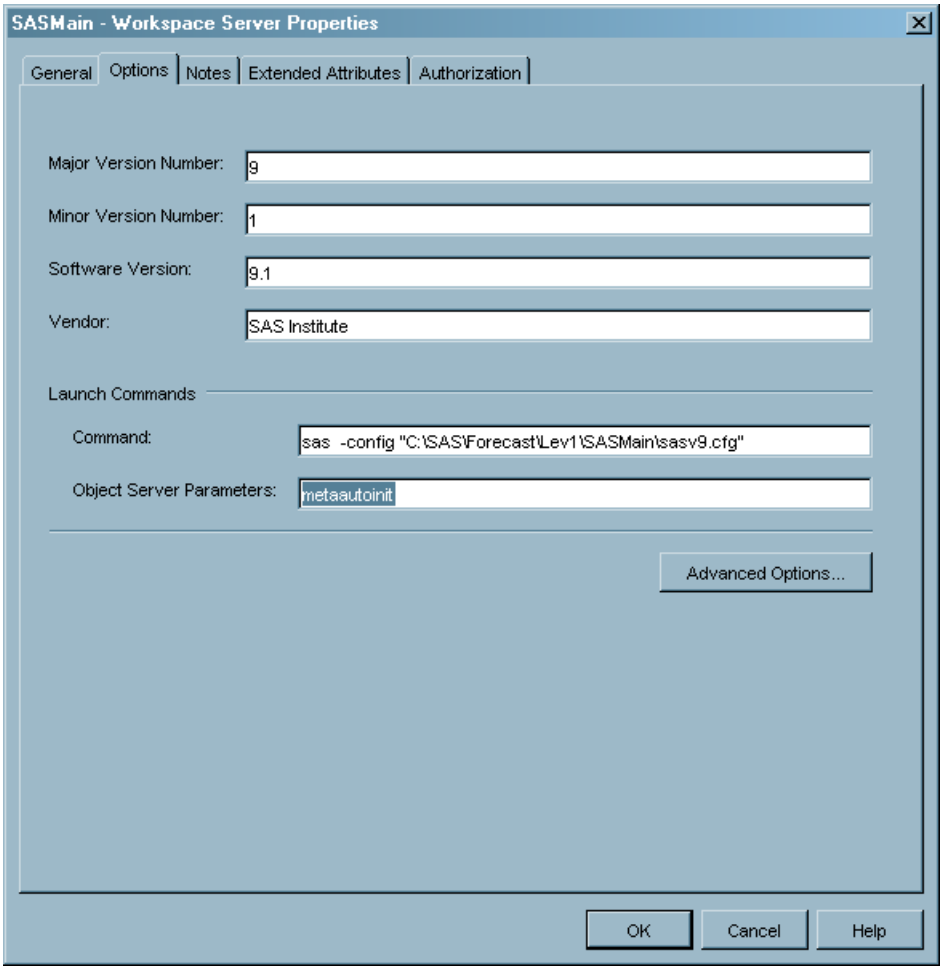

Figure 1. METAAUTOINIT Option in a Workspace Server Definition

4. Create the metadata identity for the SAS Forecast Server administrative user (e.g., fsadm). To create the necessary account, metadata identity, and group membership assignments, complete the following steps:

   (a) Log on to SAS Management Console by opening a metadata profile with your administrative user account (or with the unrestricted user account).Access the foundation repository. You should create all of your user and group definitions in a single foundation metadata repository.

   (b) In the navigation panel of SAS Management Console, select **User Manager**.

   (c) Open the **New User properties** dialog box by selecting this path from the menu bar:
   Actions→ **New**→ **User**

   (d) On the **General** tab, enter the user's name in the **Name** field. The other fields on this tab are optional.

(e) On the **Logins** tab, add a login that the metadata server can use to determine the SAS Forecast Server administrative user's metadata identity. This login must contain the fully qualified form of the user ID for the primary account that you created for the SAS Forecast Server administrative user.

(f) On the **Groups** tab, define the user's group memberships. Each user can belong to multiple groups.

(g) Click **OK** to save and close the user definition.

Note: By default, only administrative users, unrestricted users, and the user who is represented by a particular user definition can make changes to that user definition.

5. Set the metadata permissions on the libraries for the administrator.

(a) In SAS Management Console, expand the **Data Library Manager** node, and select **SAS Libraries**.

(b) Right-click on the library that you want to grant permissions, and select **Properties**.

(c) Select the **Authorization** tab.

(d) Select the SAS Forecast Server administrative user (e.g., fsadm) and grant permissions to the administrative user by checking the **Grant** boxes. All the libraries that you want to use with SAS Forecast Server must have Read and ReadMetadata permissions granted.

6. Set the metadata permissions on the libraries for users.
Note: For a more secure deployment, you can create a SAS Forecast Server group.

(a) In SAS Management Console, expand the **Data Library Manager** node, and select **SAS Libraries**.

(b) Right-click on the library to which you want to grant permissions, and select **Properties**.

(c) Click the **Authorization** tab.

(d) If the user does not exist in the list when you open the Authorization tab, then perform the following the steps:

i. Click **Add**.

ii. Select the user from the Available Identities list in the left pane, and move the user to the Selected Identities list in the right pane by clicking the right arrow.

iii. Click **OK**.

(e) Select the list of user IDs, and grant permissions to the users by selecting the **Grant** boxes. All the libraries that you want to use with SAS Forecast Server must have Read and ReadMetadata permissions granted. For all users that you want to have access at the data library level, grant Read and ReadMetadata permissions.

7. Restart the SAS Object Spawner.

Configure SAS Forecast Server and SAS Add-In for Microsoft Office

In order to use the SAS Add-in for Microsoft and SAS Enterprise Guide with SAS Forecast Server, you must use the SAS Analytics Platform that provides an embedded Web server. By default, the SAS Analytics Platform is shipped and configured with an embedded Web server.

In order for the SAS Add-In for Microsoft Office functionality to work, you must configure a server in the SAS metadata server by using SAS Management Console. To configure a server, perform the following steps:

1. Open SAS Management Console as the SAS Administrator (e.g., sasadm) and connect to a metadata repository.
2. Right-click on **Server Manager** and select **New Server**.
3. Select the Http Server template and click **Next**.
4. Select **HPF** as the name and click **Next**.
5. Add a new base path by clicking **New**.
6. Type a forward slash (**/**) in the **Base Path** field, and click **OK**.
7. Click **Next**.
8. Provide the host name of the SAS Analytics Platform and port number of the embedded Web server. The default port is 6098 unless you changed it in the SAS Analytics Platform configuration. Click **Next**.
9. Click **Finish**.

Middle Tier

Create the SAS Forecast Server File Directory

1. Create a **`Forecast Studio`** directory and **`Projects`** folder in the BI Manager by performing the following steps:

   (a) In SAS Management Console, right-click on the **BI Manager** and select **New Folder**.

   (b) Enter **`Forecast Studio`** as the name of the folder and click **Next**.

   (c) Select **No content mapping** and click **Finish**.

   (d) Right-click on the **Forecast Studio** folder and select **New Folder**.

   (e) Enter **`Projects`** as the name of the new folder and click **Finish**.

2. If you have not created a SAS Forecast Server administrative user metadata identity, then you must create a SAS Forecast Server administrative user metadata identity or grant administrative permissions to an existing user in the metadata.

   CAUTION: Do NOT use the SAS Administrator (e.g., sasadm) account as the SAS Forecast Server Administrator (e.g., fsadm) account.

3. Grant folder privileges to the SAS Forecast Server administrative user.

   (a) Start SAS Management Console by logging on with the SAS administrator account (e.g., sasadm).

   (b) Expand BI Manager.

   (c) Expand the **`Forecast Studio`** folder.

   (d) Right-click on the **Projects** folder and select **Properties**.

   (e) Select the **Authorization** tab and click **Add**.

   (f) Move the SAS Forecast Server administrator account (fsadm) to the right hand pane by selecting the administrator account in the left pane and click the single arrow icon between the two panes. Click **OK**.

   (g) With the SAS Forecast Server administrator's account selected in the upper pane, click to select all available check boxes under the Grant heading in the lower pane. Click **OK**.

4. If the SAS Analytics Platform is not started already, then start the SAS Analytics Platform by performing the following steps:
   Note: If you installed the SAS Metadata Server on a different machine from the one where you installed the middle tier, then you must change the server information by reconfiguring the SAS Analytics Platform. For information about configuring the SAS Analytics Platform, see the *SAS Analytics Platform Administrator's Guide* at the following Web address:
   `http://support.sas.com/documentation/onlinedoc/`

Windows operating environment:

(a) Navigate a shortcut that is created to where the SAS Analytics Platform is installed:
Start→ Programs→ SAS→ SAS Analytics Platform→ Start AP Server

(b) If you are prompted for the user name and server location, then specify the following values:
User name: sasadm (SAS Administrative account) and click **Remember my password**.

Server: The server is the name of the server where the SAS Analytics Platform is running.

(c) Click **LogOn** to start the SAS Analytics Platform.

UNIX operating environment:

(a) Navigate to the installation directory of the SAS Analytics Platform (e.g., !SASROOT/SASAPCore/bin)

(b) Run the command **`./apserver start`**. The server is ready to receive clients when the message "Waiting for clients" appears at the bottom of the screen.
Note: If you are running the SAS Analytics Platform as a background process, then you do not see this message.

(c) If you chose not to persist the user credentials needed to start the server, then you are prompted for a user ID and password. Specify the SAS Administrator user ID (e.g., sasadm) and password. However, for this to work you need an X display session.

5. Run the SAS Forecast Server setup file, which executes the SAS Forecast Server administrative setup. This process must be executed on the physical machine that is running the SAS Analytics Platform. However, the script creates a directory structure on the server that contains your SAS Workspace Server, and metadata structures are modified to point to it. By default, the location of the SAS Forecast Server (*forecast-studio-project*) directory is the following:
UNIX: <*config-dir*>/SAS/ForecastStudio
Windows: c:\SAS\ForecastStudio

   The SAS Forecast Server administrative user's credentials must be used when running this script, so that the physical path on the SAS Workspace Server machine is created by the SAS Forecast Server administrative user (e.g., fsadm). If the folders are not created by the SAS Forecast Server administrative user, then an error is displayed. You can specify a different default location of the forecast-studio-project directory when you run the SAS Forecast Server setup file.

   Note: If you change the project location after you created projects in SAS Forecast Server, then using the ForecastStudioSetup script to change the project location only changes the location for new projects. All of your existing

projects still reference the original location because this physical location is stored in metadata with the project information, as well as in the project.xml file found in the project directory.

Windows: Run the ForecastStudioSetup.bat script that is located in the following directory:
!SASROOT\SASAPCore\apps\Forecasting\bin

Note: If you want to change the file location, then specify a new directory pathname when you execute the ForecastStudioSetup.bat file with the following option:
ForecastStudioSetup.bat "location=<new-directory-pathname>ForecastStudio"

Example:

```
ForecastStudioSetup.bat "location=D:\myprojects\ForecastStudio"
```

UNIX: Run the ForecastStudioSetup.sh script that is located in the following directory:
!SASROOT/SASAPCore/apps/Forecasting/bin

Note: If you want to change the file location, then specify a new directory pathname when you execute the ForecastStudioSetup.sh script with the following option:
ForecastStudioSetup.sh "location=<new-directory-pathname>/ForecastStudio"

Example:

```
ForecastStudioSetup.sh "location=/myprojects/ForecastStudio"
```

A logon dialog box appears. Log on as the SAS Forecast Server administrative user (e.g., fsadm) to the server where you installed the SAS Analytics Platform.If you specify the server, then use the form hostname:port.

Import the Default Set of SAS Forecast Server Stored Processes

You can write SAS Stored Processes in order to extend the functionality of SAS Forecast Server. The solution ships with a default set of stored processes that provide report programs, or you can use the default set of stored processes as illustrations of how to use stored processes with SAS Forecast Server.

Tip: Before you modify any of the stored processes that SAS provides, it is recommended that you make a copy of the stored process and make your changes to the copied version of the stored process. You can save your changes to the stored process by saving the stored process with a new name. If you make changes to the original version of the stored process that SAS provides without saving the stored process with a new name, and you want to restore the stored process back to the original version, then you can import the stored process from the solution CD that contains the SAS Forecast Server stored processes.

Note: If the SAS Forecast Server Mid-Tier and server tier are installed on two different machines, then you need to copy the StoreProcesses.spk

file to the server tier and then import the stored processes by using BI Manager. The default location of the StoreProcesses.spk file is **`!SASROOT\SASAPCore\apps\Forecasting\samples\StoredProcess.spk`**

You import the default set of SAS Forecast Server stored processes by performing the following steps:

After the default directory structure for the SAS Forecast Server stored processes is created, you can import the stored processes by using the BI Manager. The BI Manager is part of SAS Management Console. The default SAS Forecast Server stored processes are provided in a SAS Package file with an extension of .spk, which is created when the SAS Forecast Server Mid-Tier is installed.

1. Start SAS Management Console on the server host and connect to a metadata repository as the SAS Forecast Server Administrator (e.g., fsadm).

   CAUTION: If you have a SAS Management Console session open from a preceding task, then close SAS Management Console and open a new session. You must be logged on to SAS Management Console as the SAS Forecast Server Administrator (e.g., fsadm).

2. Expand the BI Manager as shown in Figure 2.

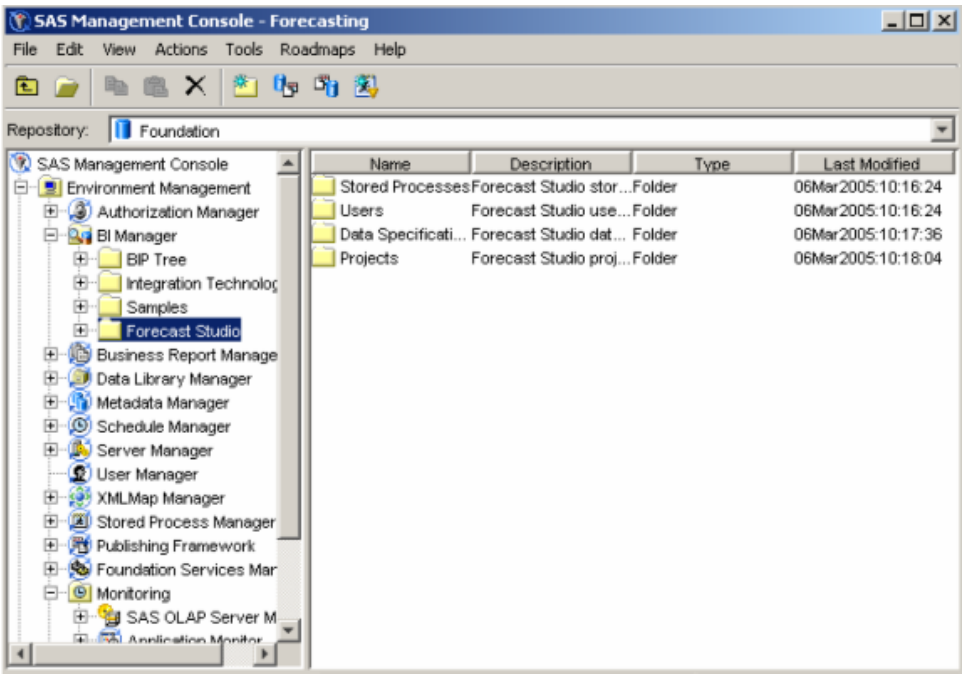

Figure 2. BI Manager

3. Right-click the **Forecast Studio** folder, and select **Import**.

4. Browse to the Forecast Server Mid-Tier installation directory to import the StoredProcesses.spk file:
   `!SASROOT\SASAPCore\apps\Forecasting\samples\StoredProcesses.spk`

   Note: Because the SAS Forecast Server Mid-Tier is installed as a SAS Analytics Platform application, it is located under the **`SASAPCore`** directory.
5. Select **All Objects** as the Import Options and click **Next**.
6. Click **Next** to confirm the selected objects.
7. Click **Next** to select the application server and source code repository.
8. Select the appropriate server and click **Next**. Typically, the server is SASMain. The window where you specify the application servers appears as shown in Figure 3.

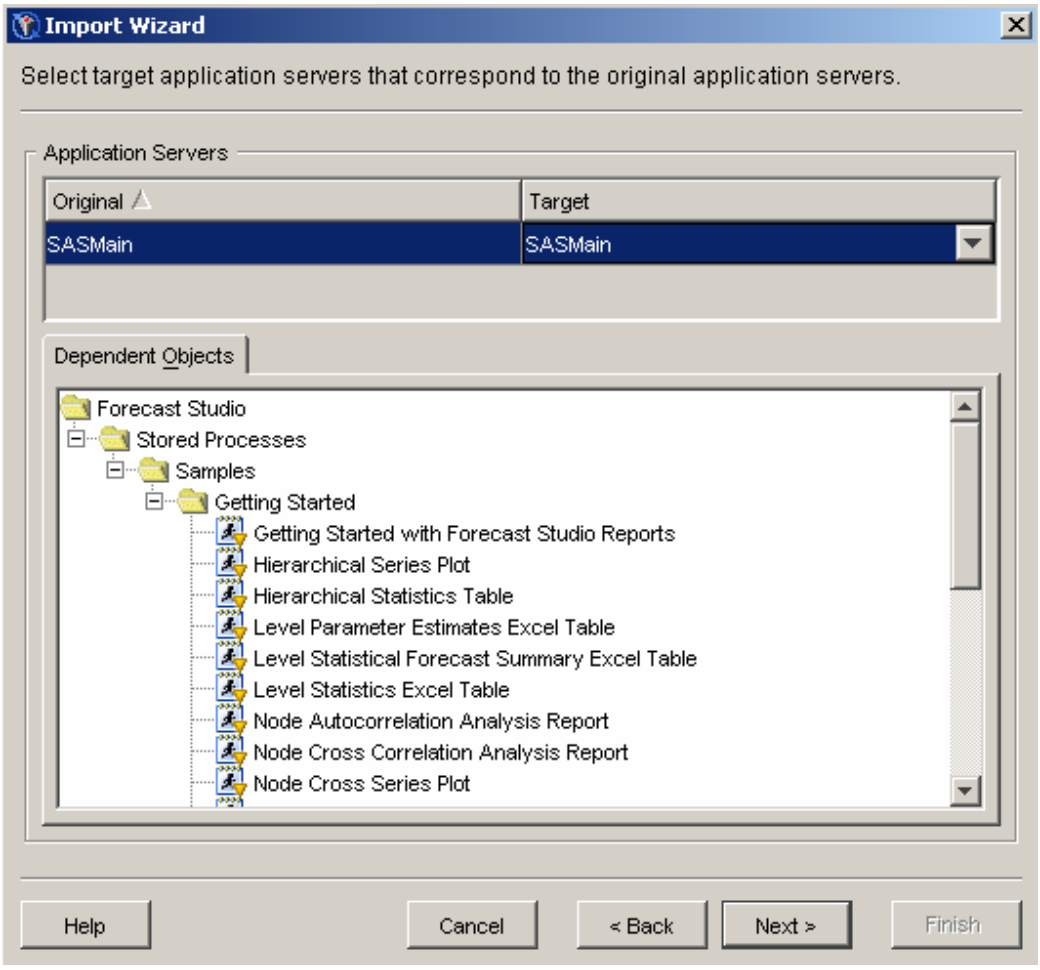

Figure 3. Import Wizard: Original and Target Application Servers

9. Keep the default value in the **Original Path** field. When the stored process directory structure was created in the previous post-installation task, a new

source code repository was created as well. Select this entry to specify the target path where you want the stored processes to be imported. This location is the path that you specified above. Click **Next**.

Figure 4 shows the window where you specify the target path for the new source code repository.

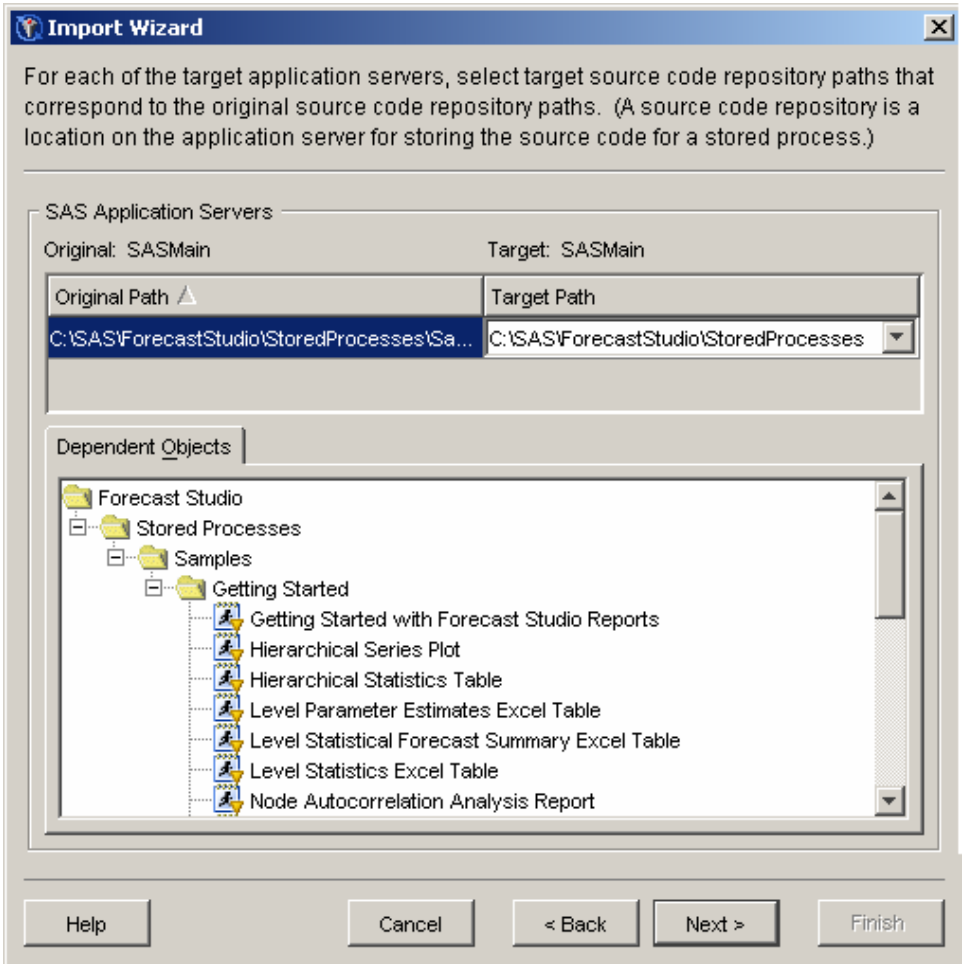

Figure 4. Import Wizard: Target Source Code Repository Paths

10. Click **Import** at the information step.
    Note: You might need to re-authenticate to the metadata server by logging on again. Use the SAS Forecast Server administrative user account (e.g., fsadmin).
11. As the BI Manager imports the sample stored processes from the SAS Package file, you see a progress dialog box similar to the one in Figure 5.

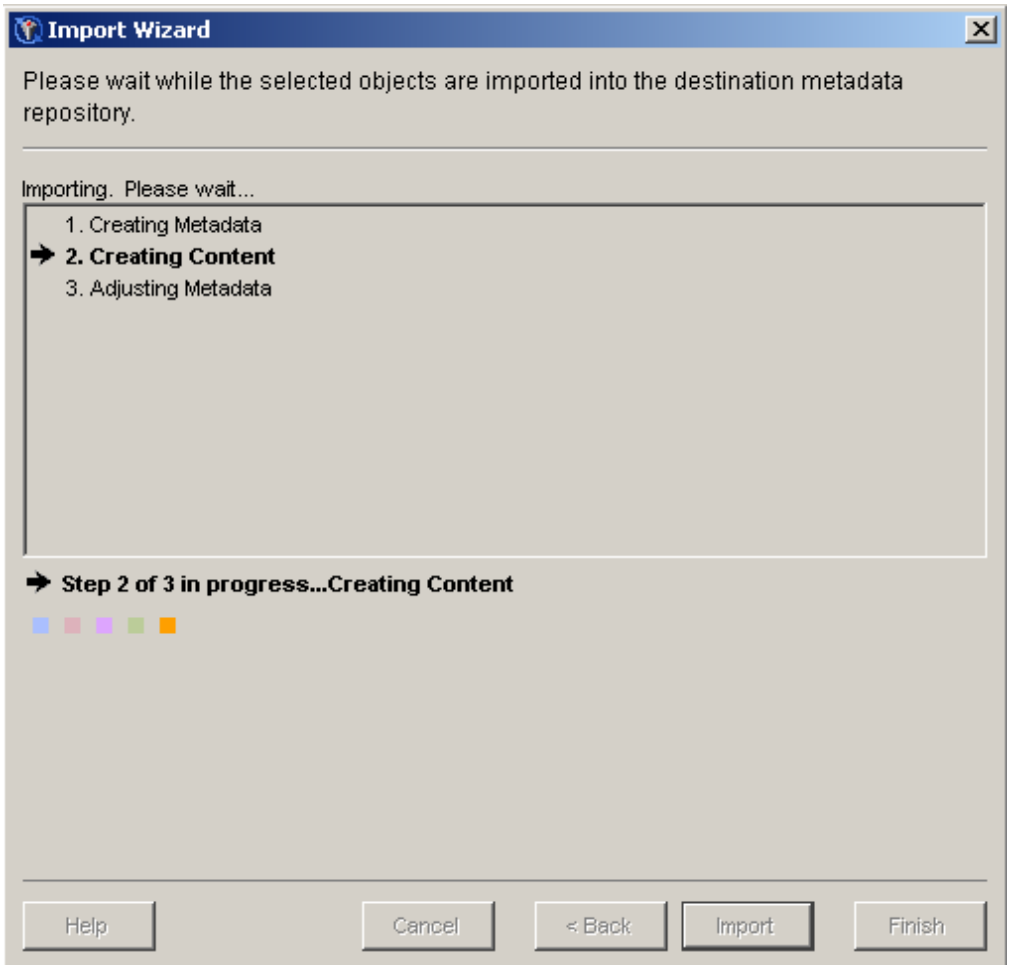

Figure 5. Import Wizard: Information Summary

12. When the import is done, you get a summary as shown in Figure 6. If everything imported properly, then click **Finish**.
13. Close SAS Management Console.

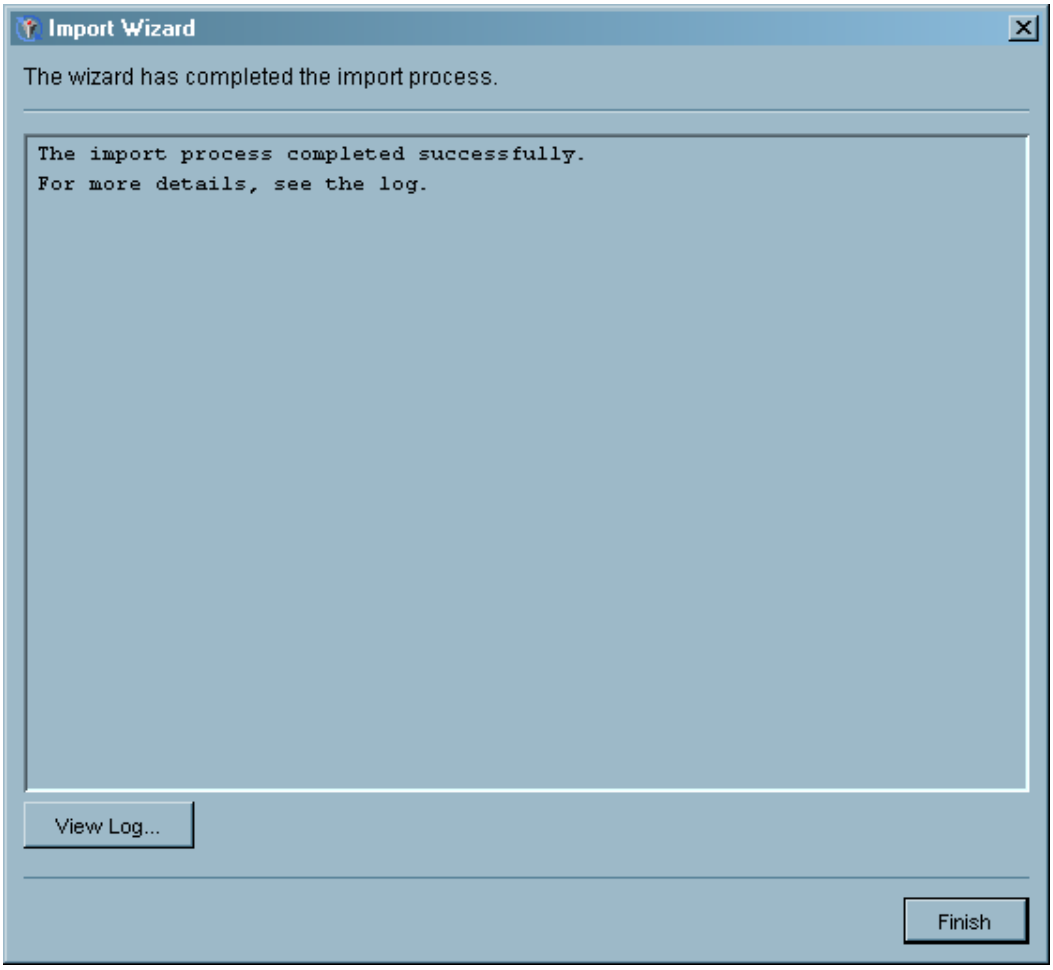

Figure 6. Import Wizard: Summary Window

Configure the Stored Process Service

After you import the SAS Forecast Server stored processes, then you must configure the stored process service by using SAS Management Console.

1. Open SAS Management Console and connect to a metadata repository as the SAS Administrator (e.g., sasadm).
2. Expand the **Foundation Services Manager** folder.
3. Expand the **Analytics Platform - Foundation Services** folder.
4. Expand the **Core Services** folder. If there is a **Stored Process Service**, then you do not need to continue.
5. Right-click on the **Core Services** folder, and select **New Service**.

   If prompted, then permit SAS Management Console to import the foundation service prototypes.

6. In the New Service wizard, select **service: Stored Process**. Click **Next**.
7. Enter **`Stored Process Service`** as the name and a description if you like. Click **Next**.
8. Click **Next** until you reach the last step and click **Finish** to complete the configuration process.
9. Restart the SAS Analytics Platform.

Enable the Search for Servers Functionality (Optional)

By default, the server discovery functionality is disabled. When you install the SAS Analytics Platform, the default value is false. If you want users to be able to discover the server, then you can use the **AP Server Advanced Configuration** tool to enable the discovery functionality. To enable the server discovery functionality, perform the following steps:

1. Start the Analytics Platform Configuration Wizard tool.
   Windows: Open the AP Server Advanced Configuration tool by selecting **Start→Programs→SAS→SAS Analytics Platform→ AP Server Advanced Configuration**

   UNIX: Open the AP Server Advanced Configuration tool by performing the following steps:

   (a) Open a terminal session with an X server running and available.
   (b) Navigate to the . . . /SASAPCore/bin directory.
   (c) Issue the following command:
   `./apserver config`
2. After the Analytics Platform Configuration Wizard starts, proceed to step 2 of the wizard.
3. Check the **Allow clients to discover this server** checkbox as shown in Figure 7.

   Note: There are limitations to the server discovery. Servers must be on the same subnet as the client and if there are firewalls that restrict UDP multicast messages, then the discovery does not function.

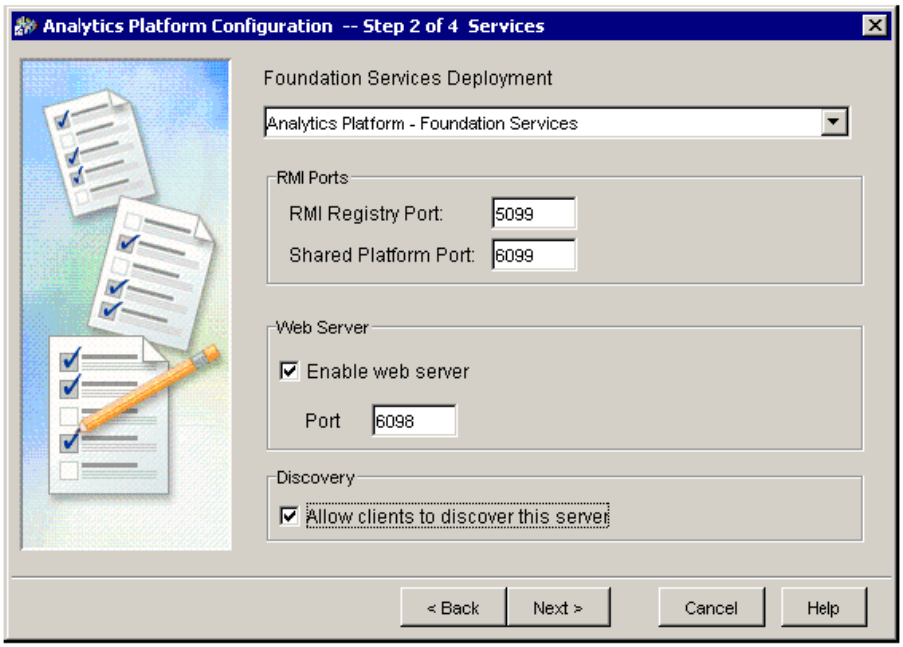

Figure 7. SAS Analytics Platform Configuration Wizard —Step 2 of 4

4. Click **Next** until you reach the last step. Click **Finish**.

Windows Administration Tasks

Complete the Post-installation Tasks for All Operating Environments

Before you compete the post-installation tasks for the Windows operating environment, you must complete the post-installation tasks for all operating environments. For information about these post-installation tasks, see "All Operating Systems Administration Tasks."

Server Tier

Set File System Permissions

On a Windows server, allowing SAS users with differing permissions to update a file creates a security setup issue that needs to be corrected. You must set file system permissions for all SAS users to be the same in the areas that are used by SAS Forecast Server.

To set file system permissions for all SAS users to be the same, perform the following steps:

1. Open Windows Explorer and select the root directory used by SAS Forecast Server. By default, the directory is `c:\SAS\ForecastStudio`.

2. Right-click and select **Properties**.
3. Click the **Security** tab.
4. Select the users for the current machine.
5. Enable **Full Control** for the specified group of users.
6. Click **OK**.

Note: Because temporary files are created in the BI directory as well, you should apply the appropriate security to this directory. The default directory is **`c:\SAS`**. By default, the BI directory is the parent of the **`ForecastStudio`** folder. If this is true, then you need to set the security on the parent directory only.

Middle Tier

Configure the SAS Analytics Platform as a Windows Service

By default, the SAS Analytics Platform is not installed as a Windows service. It is recommended that you install the SAS Analytics Platform as a Windows service. When you install the SAS Analytics Platform as a Windows service, the SAS Analytics Platform restarts when its machine reboots and runs even when users log off of the machine.

You can install and start the SAS Analytics Platform as a Windows service by performing the following steps:

1. If the SAS Metadata Server is installed on the same machine as the SAS Analytics Platform, then modify the **`!SASROOT\SASAPcore\conf\wrapper.conf`** file.

   (a) Open your Windows services by selecting **Start→Settings→Control Panel→Administrative Tools→Services**. Look for the SAS metadata service (i.e. SAS Lev1 MS - Forecast), as shown in the example in Figure 8. You must use the exact name of the service in the next step.

Figure 8. SAS Lev1 MS - Forecast Service

   (b) Near the end of the file, you see a property **`wrapper.ntservice.dependency.1=`** *value*. The *value* must be the exact name of the metadata service from the preceding step, as shown in the example in Figure 9.

```
111 # Service dependencies.  Add dependencies as needed starting from 1
112 # rjc - service dependency.
113 # NOTE: If you are running the metadata server on another machine,
114 # comment out the following line:
115 wrapper.ntservice.dependency.1=SAS Lev1 MS - Forecast
116
117 # Mode in which the service is installed.  AUTO_START or DEMAND_START
118 wrapper.ntservice.starttype=AUTO_START
119
120 # Allow the service to interact with the desktop.
121 wrapper.ntservice.interactive=false
```

Figure 9. Property Value for **`wrapper.ntservice.dependency.1=`** Entry

By default, the SAS Analytics Platform service is configured to include the SAS Metadata Server as a dependency. If you choose to run the metadata server on another machine, then this dependency must be removed. To remove the dependency, perform the following steps:

(a) Navigate to the **`!SASROOT\SASAPcore\conf\`** directory.

(b) Edit the wrapper.conf file. Comment out the following line that is located near the end of the file by adding a # character at the start of the line as follows:
 # wrapper.ntservice.dependency.1=*value*

2. Navigate to **`!SASROOT\SASAPCore\bin`** at a DOS prompt, and run the **`AnalyticsPlatformService.bat install`** command. This script installs the SAS Analytics Platform as an automatic service, but does not start the SAS Analytics Platform initially.
3. Start the service from the Services application as shown in Figure 10, or by using the **`AnalyticsPlatformService start`** command, or by rebooting the machine.

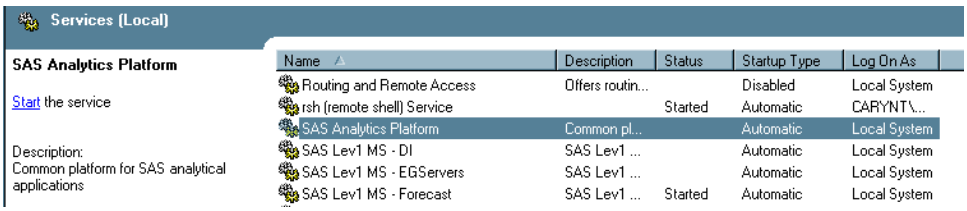

Figure 10. SAS Analytics Platform Starts as a Service

The SAS Analytics Platform is configured to start automatically when your computer boots, so you should not have to start the SAS Analytics Platform manually in the future.

Note: To uninstall a server that is installed as a service, perform the following steps:

1. Navigate to **`!SASROOT\SASAPCore\bin`** at a DOS prompt, and run the **`AnalyticsPlatformService.bat stop`** command.

2. Run the **`AnalyticsPlatformService.bat remove`** command.

Note: To uninstall a server that is installed as a service, perform the following steps:

1. Navigate to **`!SASROOT\SASAPCore\bin`** at a DOS prompt, and run the **`AnalyticsPlatformService.bat stop`** command.
2. Run the **`AnalyticsPlatformService.bat remove`** command.

Verify Your SAS Forecast Server Installation

Start and Verify the SAS Servers

What Are the SAS Servers?

For more information about the SAS servers, refer to the SAS Intelligence Platform documentation set. You can access the SAS Intelligence Platform documentation set in the SAS OnlineDoc at the following Web address:
`http://support.sas.com/onlinedoc/913/docMainpage.jsp`

Before you start your client application, you must have the following SAS servers and object spawner running:

- SAS Metadata Server
- SAS Object Spawner
- SAS Workspace Server(started by the SAS Object Spawner)
- SAS Stored Process Server (started by the SAS Object Spawner)
- SAS Analytics Platform

Each server or object spawner is represented by a directory inside the **SASMain** directory. For example, you might see a **WorkspaceServer** folder or an **ObjectSpawner** folder. If you choose to start the servers by using scripts, then each directory for a server that you can start directly contains a script called start*server-type.extension*.

- On UNIX systems, you call these scripts directly to start servers and spawners.
- On Windows systems, you can call these scripts directly by using the Start menu. For example, select
  `Start`→**`Programs`**→**`SAS`**→*configuration-directory*→ **`Start SAS Object Spawner`**.

SAS Metadata Server

Definition

The SAS Metadata Server controls access to a central repository of metadata, which is shared by all of the applications in the system. This repository contains metadata that represents items such as SAS servers, users, libraries, and data sets. For more information about the SAS Metadata Server, refer to the SAS Intelligence Platform documentation set, which can be found in the SAS OnlineDoc at
`http://support.sas.com/onlinedoc/913/docMainpage.jsp`.

Verify the SAS Metadata Server Is Running

Windows Operating Environment

If your SAS Metadata Server is running on a Windows machine and you choose to run the servers as services, then the servers start automatically when you restart your machine. However, you can use the services window to stop or restart services by performing the following steps:

1. Navigate to the Services window by selecting: **`Settings`**→**`Control Panel`**→**`Administrative Tools`**→**`Services`**.
2. Right-click the server item.
3. Select **Start**, **Stop**, or **Restart**.

If your server is running on a Windows machine and you choose to start the servers by using scripts, then start the servers by using the **Start** menu and selecting: **`Start`**→**`Program`**→**`SAS`**→ *configuration-directory*→**`Start SAS Metadata Server`**.

Note: You can start a server by executing a .bat file. You find the .bat file for a particular server in the following folder: *path-to-config-dir***`Lev1`****`SASMain`****`MetadataServer`**

UNIX Operating System

On a UNIX operating environment, you start a server by performing the following steps:

1. Log on using the SAS installer account.
2. Navigate to the following path: *path-to-config-dir***`/Lev1/SASMain/MetadataServer`**
3. Execute the script in the directory that starts the server.

SAS Workspace Server

Definition

The SAS Workspace Server executes any type of SAS program. The SAS Object Spawner starts the SAS Workspace Server. For more information about the SAS Workspace Server, see the *SAS Integration Technologies Administrator's Guide*.

Test the SAS Workspace Server Connection

You can test your connection to the SAS Workspace Server by performing the following steps:

1. Start a SAS Management Console session, and log on as a SAS Administrator (e.g., *sasadm*).
2. Expand the **Server Manager** node.

3. Expand the **SASMain** node.
4. Expand the **SASMain-Logical Workspace Server** node.
5. Select **SASMain-Workspace Server**.
6. In the right panel, right-click **Connection: SASMain - Workspace Server**.
7. Select **Test Connection** as shown in Figure 11.
8. Enter the SAS Demo User account (e.g., sasdemo). A Test Connection Successful message appears.

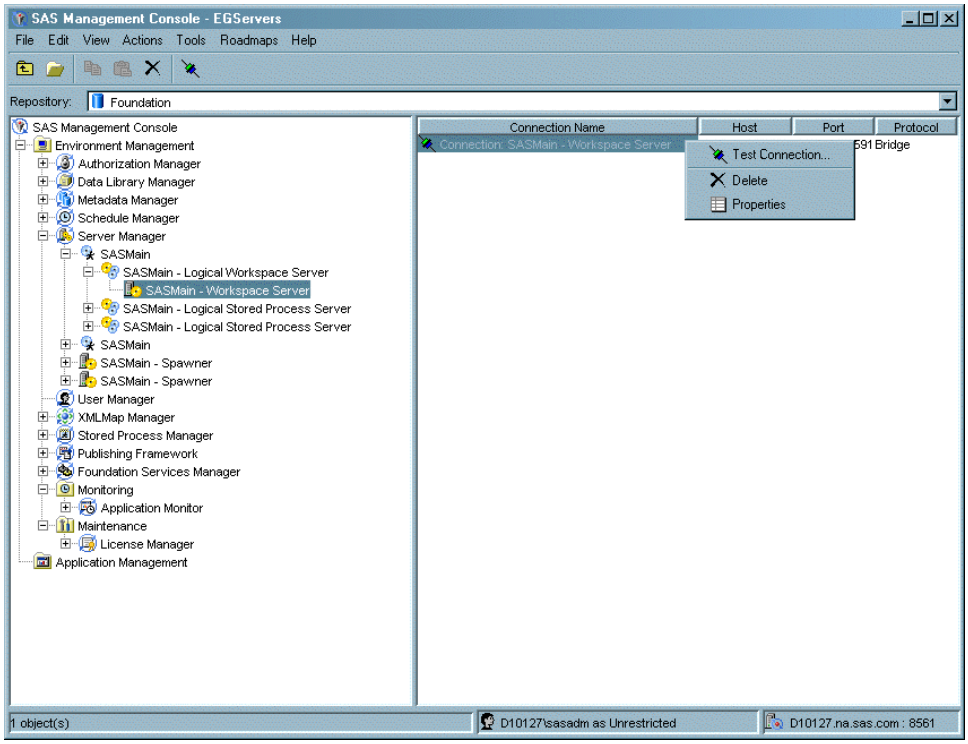

Figure 11. SAS Workspace Server: Test Connection

SAS Stored Process Server

Definition

The SAS Stored Process Server executes stored processes, which support input parameters. The SAS Object Spawner starts the SAS Stored Process Server. For more information about the SAS Stored Process Server, see the *SAS Integration Technologies Administrator's Guide*.

Test the SAS Stored Process Server Connection

You can test your connection to the SAS Stored Process Server by performing the following steps:

1. Start a SAS Management Console session, and log on as a SAS Administrator (e.g. *sasadm*).

2. Expand the **Server Manager** node.
3. Expand the **SASMain** node.
4. Expand the **SASMain-Logical Stored Process Server** node.
5. Select **SASMain-Stored Process Server**.
6. In the right panel, right-click **Connection: SASMain - Stored Process Server**.
7. Select **Test Connection** as shown in Figure 12. A Test Connection Successful message appears.

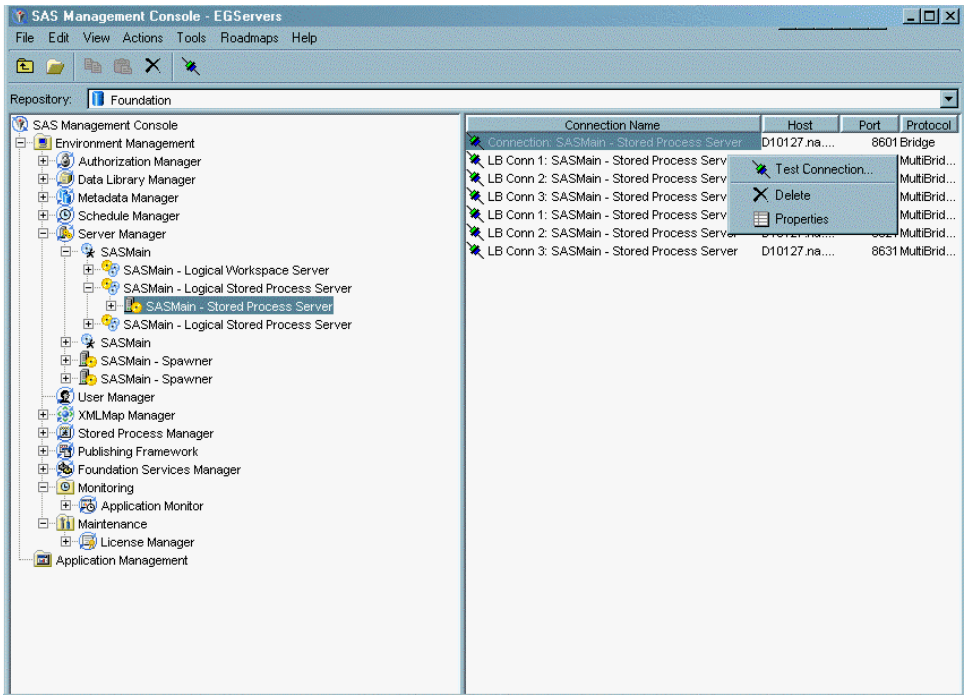

Figure 12. Stored Process Server: Test Connection

SAS Analytics Platform

Definition

The SAS Analytics Platform is a RMI middle-tier server that enables SAS Forecast Server to use the SAS Foundation Services. The SAS Forecast Server Mid-Tier must be installed on the same machine as the SAS Analytics Platform. You must start the SAS Analytics Platform before you start the SAS Forecast Studio client.

Start the SAS Analytics Platform

You can start the SAS Analytics Platform by performing the following steps:

Windows operating environment:

1. Navigate a shortcut that is created to where the SAS Analytics Platform is installed:

Start→ Programs→ SAS→ SAS Analytics Platform→ Start AP Server

2. If you are prompted for the user name and server location, then specify the following values:
   User name: sasadm (SAS Administrative account) and click **Remember my password**.

   Server: The server is the name of the server where the SAS Analytics Platform is running.

3. Click **LogOn** to start the SAS Analytics Platform.

UNIX operating environment:

1. Navigate to the installation directory of the SAS Analytics Platform (e.g., !SASROOT/SASAPCore/bin)
2. Run the command **`./apserver start`**. The server is ready to receive clients when the message "Waiting for clients" appears at the bottom of the screen.
   Note: If you are running the SAS Analytics Platform as a background process, then you do not see this message.
3. If you chose not to persist the user credentials needed to start the server, then you are prompted for a user ID and password. Specify the SAS Administrator user ID (e.g., sasadm) and password. However, for this to work you need an X display session.

SAS Object Spawner

Definition

The SAS Object Spawner is a process-spawning service that represents object servers that use the IOM bridge protocol engine, such as the SAS Workspace Server and the SAS Stored Process Server. In effect, the object spawner is a daemon on the server that listens for incoming client requests for IOM services. When the daemon receives a request from a new client, it launches an instance of either a SAS Workspace Server or a SAS Stored Process Server to fulfill the request. After the request is fulfilled, and nothing else is in the spawner's queue, then the spawner returns to its wait state. For more information about the SAS Object Spawner, refer to the *SAS Integration Technologies Administrator's Guide*.

Start the SAS Object Spawner, SAS Workspace Server, and SAS Stored Process Server

Windows Operating Environment

If the SAS Object Spawner is running on a Windows machine and you choose to run the servers as services, then the servers start automatically when you restart your machine. When the SAS Object Spawner starts, then the SAS Workspace Server and the SAS Stored Process Server start automatically. However, you can stop or restart services by performing the following steps:

1. Navigate to the Services window:
   Settings → **Control Panel** → **Administrative Tools** → **Services**.
2. Right-click the server item.
3. Select **Stop** or **Restart**.

If your server is running on a Windows machine and you have chosen to start the servers by using scripts, then start the servers by using the **Start** menu and selecting: **Start** → **Program** → **SAS** → *configuration-directory* → **Start SAS Object Spawner**.

UNIX Operating Environment

On a UNIX system, you start a server by performing the following steps:

1. Log on using the SAS installer account.
2. Change directories to *path-to-config-dir*/**Lev1/SASMain/**ObjectSpawner.
3. Execute the script in the directory that starts the server.

Create a SAS Forecast Server Project

You can verify the successful installation of SAS Forecast Server by starting the client on a Windows machine where you installed the client, and by creating a project.

1. You can start the SAS Forecast Studio client by performing the following steps:
   (a) Navigate to the SAS Forecast Studio client by selecting:
   Start → **Programs** → **SAS** →**SAS Forecast Studio** → **SAS Forecast Studio 1.4**.
   (b) In the Log On dialog box, enter your user ID and password, and specify a server with a fully qualified <*server-name:port-number*> name.
   (c) Click **Log On**.
2. To create a new project when you open SAS Forecast Studio, select **Create a new project** in the Welcome to SAS Forecast Studio dialog box.
3. Specify the name of the project such as **Test_Project**. By default, the project name is Project*n* , where *n* is the lowest available integer value. The project name must be a valid SAS name. The project name can be 32 characters long, and it must start with a letter (A-Z). Subsequent characters can be letters or numeric digits (0-9). Both uppercase and lowercase letters are valid. Click **Next**.
4. In the New Project Wizard, select a data set by double-clicking the library **SASHELP**.
5. Select the data set **ORSALES**.
6. Assign variables to the following roles:

   (a) Move the YEAR variable to the TIME_ID role.
   (b) Move the PROFIT variable to the DEPENDENT VARIALBE role.
   (c) Click **Next**.

7. Click **Next** to move to the next step.
8. Click **Next** to move to the next step.
9. Select **Produce Forecasts**, and click **Finish**.

One series is forecasted, and your installation is complete and verified. For information about ongoing and optional administrative tasks, see the *SAS Forecast Server Administrator's Guide*.

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Your Turn

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