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### **SAS Profitability Management 1.3 Installation Instructions**

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## Table of Contents

<b>Chapter 1 - Using These Instructions .....</b>	<b>1</b>
Technical Support.....	1
<b>Chapter 2 - Pre-Installation Guide .....</b>	<b>3</b>
<b>SAS Software.....</b>	<b>3</b>
<b>Java 2 SDK for Servers .....</b>	<b>3</b>
Windows .....	3
UNIX .....	3
Java Runtime for Clients.....	4
<b>Apache Tomcat.....</b>	<b>4</b>
<b>User ID for Installations.....</b>	<b>4</b>
<b>Operating System Help.....</b>	<b>4</b>
<b>Chapter 3 - New Installation Guide.....</b>	<b>5</b>
<b>Installation Set-up .....</b>	<b>5</b>
Creating User Accounts .....	5
Creating and Updating Groups.....	6
Windows .....	6
UNIX .....	7
Granting Permissions on Windows.....	7
Installing on UNIX .....	7
Dual- and Multi-Server Installs .....	7
Client Install.....	7
<b>Single Server Installation.....</b>	<b>8</b>
Getting Started .....	8
Third Party Installation.....	8
Install SAS Software .....	8
Configure SAS Software .....	10
My Configuration Steps .....	11
<b>Dual-Server Installation.....</b>	<b>11</b>
Mid-Tier Installation (Dual-Server) .....	11
Getting Started.....	11
Third Party Installation .....	12
Install SAS Software .....	12
Configure SAS Software .....	13
My Configuration Steps for the Mid-Tier .....	13
SAS OLAP and Transaction Assignment Installation (Dual Server).....	13
Getting Started.....	13
Install SAS Software .....	14
Configure SAS Software .....	15
My Configuration Steps for the Data-tier.....	16
<b>Installing the SAS Profitability Management Tutorial Data.....</b>	<b>16</b>
<b>Windows Client Installation .....</b>	<b>17</b>
Getting Started .....	17
Install SAS Client Software .....	17
<b>Chapter 4 - Post-Installation Guide .....</b>	<b>19</b>
<b>Verification of Metadata and Additional Configurations.....</b>	<b>19</b>
Validate Metadata Configuration. ....	19
Configure the SAS Profitability Management Language.....	20
Configure Apache Tomcat .....	20
<b>Create SAS Profitability Management Users .....</b>	<b>20</b>
Adding Window Users to the PM Users OS Group.....	21
Adding UNIX Users to the PM Users OS Group .....	21
<b>Configure the SAS Profitability Management Database .....</b>	<b>21</b>

<b>Testing Your SAS Profitability Management Installation .....</b>	<b>26</b>
Test SAS Profitability Management Client .....	26
Test the SAS Profitability Web Reporting Client on Windows .....	27
Test the SAS Profitability Web Reporting Client on UNIX.....	27

## Chapter 1 - Using These Instructions

This document has three major sections:

- Pre-Installation Guide
- New Installation Guide
- Post-Installation Guide

Before you start, refer to the *SAS Profitability Management 1.3 Systems Requirements* document for information about third-party software and operating system specifications.

The Pre-Installation Guide contains common steps that may be used for any of the tiers in the new installation guide.

The New Installation Guide (beginning on page 5) outlines the steps that need to be taken for a successful installation of SAS Profitability Management 1.3 along with the SAS Enterprise BI Server.

If you have already installed SAS Metadata Server or SAS Enterprise BI Server **do not use** these instructions. Have your consultant give you the document *Upgrade BI Enterprise Server with SAS Profitability Management* which can be found on the SAS Profitability Management consultants' Web page.

The Post-Installation Guide can be found on page 19.

Late breaking news will be found in the release notes on the consultants' Web page. Ask your consultant for any new information.

### Technical Support

Please visit the SAS Technical Support Web site, <http://support.sas.com>, for documentation and installation updates.



## Chapter 2 - Pre-Installation Guide

### SAS Software

During the installation, you will need to have access to the SAS Software Depot, SAS Installation data file (SID file), and Plan file. Keep these in a location that is accessible to the servers.

Create a SAS Software Depot. For detailed instructions, please refer to the *User's Guide for the SAS Software Navigator* at

<http://support.sas.com/documentation/installcenter/softwarenav/9.1.3/user.pdf>.

The SAS Software Depot contains the SAS Software Navigator referenced in the instructions below.

### Java 2 SDK for Servers

The install scripts need access to the Java 2 Software Developers Kit (SDK). Please ensure that the Java 2 SDK is installed on the server that hosts the Web page and have it in the *Path* systems environment variable. Also ensure that the `JAVA_HOME` environment variable points to the correct Java 2 SDK. See the *SAS Profitability Management 1.3 Systems Requirements* for the minimum level of the SDK for the operating system of your Web server.

Java 2 SDK can be found at the Sun archive download Web site, or you may follow the link from the SAS Technical Support Web site:

<http://support.sas.com/documentation/configuration/thirdpartysupport/v913sp4/thirdparty913sp4.html#jdk>

### Windows

You should install Java 2 SDK 1.4.2\_05 if you also will also have a SAS solution installed. The SAS Solutions include but are not limited to SAS Financial Management and SAS Strategic Performance Management. Otherwise you can install Java 2 SDK 1.4.2\_15.

For example, on a Windows 2000 Server, follow these steps if you installed Java 2 SDK 1.4.2\_15:

1. Select **Start**→**Settings**→**Control Panel**→**System**. Open the **Advanced Tab** and click **Environment Variables**.
2. Under **System Variables**, highlight **Path** and click **Edit**. Add or move the `j2sdk` path to the beginning of the variable value, normally `C:\j2sdk1.4.2_15\bin`. If the path contains another `j2sdk`, remove it. Click **OK** for each of the windows opened.
3. Under **System Variables**, highlight **JAVA\_HOME** and click **Edit**. If **JAVA\_HOME** does not exist, click **New**. Enter the path to the correct `j2sdk`, normally `C:\j2sdk1.4.2_15`. Click **OK** for each of the windows opened.

**Note:** Please close and reopen DOS prompts to pick up environment changes.

4. Verify that the changes are correct by executing the command `java -version` in a command prompt. The results should return `java version "1.4.2_15"`.

### UNIX

The following two commands set the `PATH` and `JAVA_HOME` environment variables. These statements can be added to the `.profile` file of the user that is running the installation.

For example if you installed Java 2 SDK 1.4.2\_10 in the `usr` directory, issue the following commands:

```
export PATH=$PATH:/usr/j2sdk1.4.2_10/bin
export JAVA_HOME=/usr/j2sdk1.4.2_10
```

Verify that the changes are correct by executing the command `java -version` at the command line.

The results should be the following:

UNIX operating System	Minimum Java SDK
HP-UX Itanium	1.4.2.10
AIX	1.4.2 SR5
Solaris on Sparc	1.4.2._05 (if using SAS solutions <sup>1</sup> ), otherwise 1.4.2_15

<sup>1</sup> The SAS Solutions include but are not limited to SAS Financial Management and SAS Strategic Performance Management.

## Java Runtime for Clients

The computer that hosts the SAS Profitability Management rich client does not need the full Java 2 SDK. It only needs the Java Runtime Engine, JRE 1.4.2\_09 or newer.

## Apache Tomcat

The server that hosts the SAS Profitability Management Web server also needs Apache Tomcat 4.1. Verify that Port 8080 is available so Apache can properly respond to HTTP requests without conflicting with other Web servers. If it is not available reconfigure Apache, or the other Web server, to respond to HTTP requests on another port.

**Note:** *The Tomcat installation path should not contain any spaces. Do not take the default location for the code.*

## User ID for Installations

SAS recommends that you use a generic user ID to install SAS software. Install the software on all servers using the same User ID. Because of file permissions, any subsequent upgrades or service packs should be installed using this user ID.

For Windows, this user must be a member of the Administrators group.

For UNIX systems, you should log in as this generic user to install software. You do not need to log on as root for this purpose. SAS installation will prompt you for the root password. However, some third-party products require that you be logged in as root when you install them.

## Operating System Help

Help for many of the Windows operating systems steps can be found at **Start→Help and Support**. Enter phrases like “file permissions” or “create users” to find the specific steps for your operating system.

For UNIX, use the `man` command. For more information on this command, type `man man`.

## Chapter 3 - New Installation Guide

This section of the documentation will guide you through the installation of SAS Profitability Management 1.3. Please follow the instructions carefully.

Complete the section “Installation Set-up” below. After you have successfully created the user accounts, choose from one of the following two sections: Single Server Installation (on page 8) or Dual Server Installation (page 11). Pick the instructions appropriate for your set-up. After you have finished the server configuration, you should install the SAS Profitability Management Tutorial (page 16) and perform at least one client install (page 17). Finally use the steps in the Post-Installation Guide (page 19) to complete the installation.

Before you continue, please visit our Technical Support website, <http://support.sas.com>, for any additional information. In particular, refer to the *SAS 9.1.3 Intelligence Platform: Installation Guide* located at <http://support.sas.com/documentation/configuration/biig.pdf>.

**IMPORTANT:** Certain hot fixes may cause problems with the operation of SAS Profitability Management. Please contact SAS Technical Support before applying any SAS hot fixes or service packs not explicitly mentioned in this document.

### Installation Set-up

The following sections tell you how to create the necessary user accounts and groups on the operating system as well as set the permissions on them.

#### Creating User Accounts

Before you install your software, you must have user accounts available to the installation process. On Windows servers, networked user accounts are needed if the metadata server is on a separate machine from the other SAS processes.

If you choose to create local accounts for a multi-server installation, the local accounts are created on the machine where your metadata repository is located.

When you set up passwords for your SAS system users, it is *highly recommended* that these passwords not have to be reset on first log-on. It is also preferable that the passwords for these accounts do not expire.

#### Windows:

For example, on a Windows 2000 Server, you would follow these steps:

1. **Start**→**Settings**→**Control Panel**→**Administrative Tools**→**Computer Management**.
2. Expand the **System Tools**.
3. Expand **Local Users and Groups** and right-click **Users**. Select **New User** to create a new user.
4. Fill in the user name and password.
5. Deselect **User must change password at next logon**.
6. Select **User cannot change password**.
7. Select **Password never expires**.
8. Click **Create**.
9. Continue with step 3 thru 8 until you have all the users added.
10. Click **Close**.

#### UNIX:

- Set the initial password
- Do not select password aging and expiration options

- If you create an account on an AIX system, make sure that the “User can LOGIN?” setting is set to “true” for the user.

The table below can be printed and used to record the passwords and locations for each user account. The values entered in this table will be used during the installation process.

Passwords for these user IDs cannot contain more than one ‘\$’ character.

**Windows:** Values for the User ID Prefix column will contain either a domain or server name. For example, if the network domain is MyDomain, and the metadata server is installed on the machine named OMRServer, and the account sastrust is created locally on OMRServer, then the User Id Prefix for sastrust is OMRServer. Alternatively, if sastrust is a network ID, then the User ID Prefix would be MyDomain.

**UNIX:** For local accounts, no prefix is used.

Full name	Default User ID	Default Password	User ID Prefix	User ID	Password
SAS Administrator <sup>‡</sup>	sasadm	AdminAdmin1			
SAS Server User*	sasrv	UserUser1			
SAS Guest User*	sasguest	UserUser1			
SAS Trusted User	sastrust	UserUser1			
SAS Demo User*	sasdemo	DemoDemo1			
SAS Web Administrator	saswbadm	AdminAdmin1			

\* If the metadata server is on a different machine from any of the other SAS processes, a network user ID is required (not an ID for a local account).

‡ The SAS Administrator user ID and password can only contain the alphanumeric characters "a" through "z", "A" through "Z" and "0" through "9" and the special characters ".", "-", "\*", and "\_". All other characters in the SAS Administrator user ID and password will cause an error in export operations.

## Creating and Updating Groups

### Windows

You must grant permissions to the users who will access the servers. To simplify ongoing maintenance, we recommend that you create a group and then grant permissions to the group.

Create one new group called *SAS Servers* and add the above users to the group. Then create another group called *PM Users* and add *SAS Trusted User* to it. The steps are:

1. Open **Start->Settings->Control Panel->Administrative Tools->Computer Management**.
2. Expand **Systems Tools**.
3. Expand **Local Users and Groups** and right-click **Groups**. Select **New Group** to create a new group named *SAS Servers*.
4. Add each user above to this group. Click **Close**.
5. Right-click **Groups** to create a new group called *PM Users*.
6. Each PM user must be added to this group. Also add *SAS Trusted User*.
7. Give both groups, *SAS Servers* and *PM Users* the ability to log on as a batch job.
8. Close **Computer Management**.

## UNIX

If you are installing any SAS software on a UNIX system, you need to create a UNIX group to hold the IDs of the *SAS Trusted User*, SAS installer and the *SAS Server User*. We recommend that you name this group `sas`.

Also create a new group named `pmusers` and add the *SAS Trusted User*. Later you will add the SAS Profitability Management users to the group.

## Granting Permissions on Windows

When granting permissions, it is necessary to update the local security settings on the server.

1. Bring up the Local Security Policy application via **Start**→**Settings**→**Control Panel**→**Administrative Tools**→**Local Security Policy**.
2. Under **Local Policies**, select **User Rights Assignment**.
3. Right-click **Log on as a batch job** and select **Properties**.
4. Click **Add User or Group...** and grant permission/policy to the two groups: *SAS Servers* and *PM Users*.
5. If you are installing this software on Windows 2000, grant the **Act as part of the operating system** permission/policy to the SAS Server User (`sassrv`) user ID and SAS Trusted User (`sastrust`). You may have to log off or reboot after granting this permission.

## Installing on UNIX

The SAS Software Navigator that is used to install SAS Profitability Management is an X window application. If you are installing from a personal computer, you need to set up the display to the computer. An example of this is:

```
export DISPLAY=<yourmachineaddress>:0.0
```

## Dual- and Multi-Server Installs

As stated above, if your metadata server and other SAS processes reside on different Windows servers, a network ID is required for several of the accounts. The *PM Users* and *SAS Servers* groups should be created on any server that has a SAS process running on it, namely the metadata server and the SAS Profitability Management server. If the SAS Administrator, SAS Trusted User, and SAS Web Administrator are local accounts, they should be created on the metadata server.

## Client Install

Whether you install SAS Profitability Management on a single server or dual servers, you must install at least one SAS Profitability Management Client as described on page 17. This client will be used to populate the PM Model database as described in “Configure the SAS Profitability Management Database” on page 21.

Installing the client is described following the Server installs.

**Do not manually put anything in the PM Model database.** Input data, output data, and the PM Model database should be in separate directories.

## Single Server Installation

This section provides instructions to install SAS Profitability Management on a single physical server. For information about installing on two or more machines, see the Dual Server section on page 11.

### Getting Started

1. Create your SAS Software Depot.
2. Place your `SID.txt` and plan files in a known location, such as

**Windows:** `<Install Drive>:\SAS\SID.txt.`

**UNIX:** `/<install path>/SAS/sid.txt`

### Third Party Installation

**Java SDK** (Check the correct version for your operating system in the *SAS Profitability Management 1.3 Systems Requirements*.)

1. Ensure that the Java Standard Development Kit has been installed.
2. Ensure that the `bin` directory is in the Path systems environment variable and that the `JAVA_HOME` environment variable is properly set correctly. See the Pre-Installation Guide on page 3 for details.

**Note:** For Windows, please close and reopen DOS prompts to pick up environment changes.

### Install SAS Software

For SAS Profitability Management 1.3, no localizations are available. Only English is available.

1. Start the SAS Software Navigator.
2. Select **English** as the language for the SAS Software Navigator.
3. Select the **Advanced Deployment** option. Click **Next**.
4. Enter the name and file location of the `SID.txt`. For example

**Windows:** `<Install Drive>:\SAS\SID.txt.`

**UNIX:** `/<install path>/SAS/sid.txt`

Click **Next**.

5. Verify that Base SAS software and SAS Profitability Management Data Integration and BI Server are licensed. Click **Next**.
6. Choose the **Specify a project directory...** option. Enter the location of your plan file, such as

**Windows:** `<Install Drive>:\SAS\`

**UNIX:** `/<install path>/SAS/`

Verify that the correct files are being installed. Click **Next**.

7. Un-check **Java Development Kit**. It has already been installed.
8. Un-check **Configuration Wizard**. It will be run later. Click **Next**.
9. Select a path to install the software and click **Next**.
10. Select install help files in the current language only and click **Next**.
11. Click **Install** to perform the installation.

**Note:** You must change the install location for Tomcat so that it is in a directory that does not have a space in the path

12. If you are installing on UNIX, a separate window will open and prompt you for the following information
  - a. Whether you want to perform a new Installation (yes).
  - b. The target location as you did in step 9.
  - c. Whether you want to select any NLS translations (no).
  - d. Whether you want to be prompted for the root password (we recommend it).
  - e. Whether you want to install any SAS access engines (If you are using DBMS for the input then install the appropriate engine).
13. By default all the necessary components for SAS Profitability Management are selected for installation based upon the SID file selected in Step 4.

On a Windows server you can verify, those components are:

- SAS 9.1
  - Base SAS
  - SAS Integration Technologies
  - SAS OLAP Server
  - SAS Transaction Assignment Server
  - SAS/ACCESS (choose the engine for the assignment server)
  - SAS/CONNECT
  - SAS/GRAPH
  - SAS/SHARE
- 14. On a Windows server, if presented with the option to **Add Components to SAS**, keep it selected.

**Note:** On a Windows server, if progress stops for an extended period of time, you may have a hidden dialog window that is waiting for user feedback. Use the control sequence (typically ALT+TAB) to determine if you have a hidden window.

15. Click **Finish** to close the SAS Software Navigator.
16. On UNIX, if you did not allow the installation to prompt for the root password, have your administrator run the SAS setup utilities to configure "User Authentication".
17. On UNIX, you need to set the CATALINA\_HOME environment variable. The statement can be added to the .profile file of the user that is running the installation. For example if you stored tomcat in /usr/SAS/Jakarta-tomcat-4.1.18 then use the following:

```
export CATALINA_HOME=/usr/SAS/jakarta-tomcat-4.1.18
```

18. Restart the SAS Software Navigator and repeat steps 2-6 above.
19. Check *only the* Configuration **Wizard**. Click **Next**.
20. Select **English** as the language for the install.
21. Select a path to install the software and click **Next**.
22. Select install help files in the current language only and click **Next**.
23. Click **Install** to install the configuration wizard.
24. The Configuration Wizard will launch. You will be asked where you want the metadata installed. This information will be used later as the <**Configuration Drive**> for Windows and <**Configuration Path**> for UNIX servers. Please fill in the following table.

<b>Location of the metadata – Configuration Drive or Configuration Path</b>

## Configure SAS Software

1. The Configuration Wizard will prompt you for the metadata server. Please fill in the table on page 9.
2. The Configuration Wizard will prompt for user IDs and passwords. Please refer to the chart on page 5 for the appropriate values.
3. When prompted during the Configuration Wizard sequence, customize the `editConfiguration.properties` file for your site. On most Windows servers, the provided default values will be acceptable. On UNIX servers, you need to customize the values.

In the `editConfiguration.properties`, the following values are used by SAS Profitability Management:

- a. **abmprofmva.sascode.dir:** This value should point to the location where the Transaction Assignment Server is installed to. It should be set to one of the following:

**Windows:** `<Install Drive>:\SAS\SAS 9.1\abmprofmva\sasmisc`

**UNIX:** `/<install path>/SAS/SAS_9.1/misc/abmprofmva`

- b. **abmprofmva.data.model.dir:** This is the location where the SAS Profitability Management models will be stored. It should be set to one of the following:

**Windows:**

`<Configuration Drive>\Lev1\Data\SASProfitabilityManagement\models`

**UNIX:**

`/<Configuration Path>/Lev1/Data/SASProfitabilityManagement/models`

- c. **abmprofmva.data.cubes.dir:** This is the location where the cube data created by SAS Profitability Management for use by the SAS OLAP Server will be stored. It should be set to one of the following:

**Windows:**

`<Configuration Drive>\Lev1\Data\SASProfitabilityManagement\cubes`

**UNIX:**

`/<Configuration Path>/Lev1/Data/SASProfitabilityManagement/cubes`

Verify that all other values in `editConfiguration.properties` are correct. If you changed a default value during the installation, a corresponding value may exist in this file.

4. Save the `editConfiguration.properties` file.

**Note:** *If you do not save the file before you close it, the changes that you made above **will not be committed**.*

5. Verify that the changes are in the file. Click **Next**.

6. On UNIX, verify that that the owner has execute authority on the following files:

`/<install path>/SAS/SASWebOlapViewerforJava/3.1/configure.sh`

`/<install path>/SAS/SASWebOlapViewerforJava/3.1/tomcat_deploy.sh`

7. Click **Install**; the configuration begins.

- When you are notified that the Configuration Wizard completed successfully, close the Configuration Wizard and SAS Software Navigator.

## My Configuration Steps

Complete the instructions in the document *My Configuration Steps*.

### Windows:

If the document *My Configuration Steps* does not appear in a browser after the completion of the Configuration Wizard, double-click the `instructions.html` file under your configuration directory (for example, `<Configuration Drive>/instructions.htm`).

The completion of the Configuration Wizard automatically starts the metadata server and launches the SAS Management Console. When you log into the SAS Management Console for the first time, the Foundation Repository is created for you. These are the first three steps in the My Configuration Steps instructions.

### UNIX:

Bring up a Web browser and open the `instructions.htm` in the `<Configuration Path>`. Follow the instructions in the `instructions.htm` document to start the metadata server and then SAS Management Console.

After you have completed the process outlined in *My Configuration Steps*, you can optionally install the SAS Profitability Management tutorial on a centrally located server that is hosting the workspace server. You must install at least one SAS Profitability Management Client (page 17) and proceed to the Post-Installation Guide (page 19).

## Dual-Server Installation

This section provides instructions to install SAS Profitability Management on two physical servers. One server hosts the Web (or mid-tier) Server and the second server hosts the Workspace, SAS OLAP, and Transaction Assignment Servers, where most of the large computational work is performed.

In order to deploy this Dual-Server configuration, the SAS Metadata Server must be installed on either of these two servers.

The metadata server must exist before the Web server can be configured. If it is on the SAS OLAP and Transaction Assignment Server please install this before the mid-tier. See page 13.

If it is to be installed on the mid-tier, then you can start with the following instructions.

Please fill in the following table.

Metadata Server name	Location of Metadata on the Server	Metadata Server Port

## Mid-Tier Installation (Dual-Server)

### Getting Started

- Create your SAS Software Depot.
- Place your `SID.txt` and plan files in a known location, such as

**Windows:** `<Install Drive>:\SAS\SID.txt`

**UNIX:** `<install path>/SAS/sid.txt`

### Third Party Installation

**Java SDK** (Check the correct version for your operating system in the *SAS Profitability Management 1.3 Systems Requirements*)

1. Ensure that the Java Standard Development Kit has been installed.
2. Ensure that the bin directory is in the Path System Environment Variable. See the Pre-Installation Guide on page 3 for details.

**Note:** *On Windows servers, please close and reopen DOS prompts to pick up environment changes.*

### Install SAS Software

1. Start the SAS Software Navigator.
2. Select **English** as the language for the SAS Software Navigator
3. Select the **Advanced Deployment** option. Click **Next**.
4. Enter the name and file location of the SID.txt, for example

**Windows:** <Install Drive>:\SAS\SID.txt

**UNIX:** /<install path>/SAS/sid.txt

Click **Next** twice.

5. Choose the **Specify a project directory...** option. Enter the location of your plan file, such as

**Windows:** <Install Drive>:\SAS\  
/<install path>/SAS/

**UNIX:** /<install path>/SAS/

Click **Next**.

6. Choose the machine that corresponds to your server setup, such as *Mid-Tier*. Click **Next**.
7. Uncheck **Java Development Kit** if the required J2SDK is already installed on the server. Click **Next**.
8. Uncheck **Configuration Wizard**. It will be run later. Click **Next**.

**Note:** *On a Windows server, if progress stops for an extended period of time, you may have a hidden dialog window that is waiting for user feedback. Use the control sequence (typically ALT+TAB) to determine if you have a hidden window.*

9. Select the path to install the software and click **Next**.
10. Select install help files in the current language only and click **Next**.
11. Select **Install** to perform the installation.

**Note:** *You must change the install location for Tomcat so that it is in a directory that does not have a space in the path*

12. Click **Finish** to close the SAS Software Navigator.
13. On UNIX, you need to set the CATALINA\_HOME environment variable. The statement can be added to the .profile file of the user that is running the installation. For example, if you installed tomcat in /usr/SAS/Jakarta-tomcat-4.1.18 then use the following

```
export CATALINA_HOME=/usr/SAS/Jakarta-tomcat-4.1.18
```

14. Restart the SAS Software Navigator and repeat steps 2-6 above.
15. Check *only* **Configuration Wizard**. Click **Next**.
16. Select **English** as the language for the install.

17. Select a path to install the software and click **Next**.
18. Select install help files in the current language only and click **Next**.
19. Click **Install** to install the configuration wizard.

### **Configure SAS Software**

1. The Configuration Wizard will prompt you for the metadata server. Please fill in the table on page 10.
2. The Configuration Wizard will prompt for user IDs and passwords. Please refer to the chart on page 5 for the appropriate values.
3. Verify that all other values in `editConfiguration.properties` are correct. If you changed a default value during the installation, a corresponding value may exist in this file.
4. Save the `editConfiguration.properties` file.

**Note:** *If you do not save the file before you close it, the changes that you made above **will not be committed**.*

5. Verify that the changes are in the file. Click **Next**.
6. On UNIX, verify that the owner has execute authority on the following files:

```
<install path>/SAS/SASWebOlapViewerforJava/3.1/configure.sh  
<install path>/SAS/SASWebOlapViewerforJava/3.1/tomcat_deploy.sh
```

7. Click **Install** to install the configuration Wizard.
8. When you are notified that the Configuration Wizard completed successfully, close the Configuration Wizard and SAS Software Navigator.
9. Verify that the Configuration Wizard completed successfully.

### **My Configuration Steps for the Mid-Tier**

Complete the instructions in the document *My Configuration Steps*.

#### **Windows:**

If the document *My Configuration Steps* does not appear in a browser after the completion of the Configuration Wizard, double-click the `instructions.html` file under your configuration directory (for example, `<Configuration Drive>/instructions.htm`).

The completion of the Configuration Wizard automatically starts the metadata server and launches the SAS Management Console. When you log into the SAS Management Console for the first time, the Foundation Repository is created for you. These are the first three steps in the My Configuration Steps instructions.

#### **UNIX:**

Bring up a Web browser and open the `instructions.htm` in the `<Configuration Path>`. Follow the instructions in the `instructions.htm` document to start the metadata server and then SAS Management Console.

## **SAS OLAP and Transaction Assignment Installation (Dual Server)**

### **Getting Started**

1. Create your SAS Software Depot.
2. Place your `SID.txt` and Plan files in a known location, such as

**Windows:** `<Install Drive>:\SAS\SID.txt`

**UNIX:** `<install path>/SAS/sid.txt`

### **Install SAS Software**

1. Start the SAS Software Navigator.
2. Select **English** as the language for the SAS Software Navigator.
3. Select the **Advanced Deployment** option. Click **Next**.
4. Enter the name and file location of the `SID.txt`, for example

**Windows:** `<Install Drive>:\SAS\SID.txt`

**UNIX:** `<install path>/SAS/sid.txt`

Click **Next** twice.

5. Choose the **Specify a project directory...** option. Enter the location of your plan file, such as

**Windows:** `<Install Drive>:\SAS\`

**UNIX:** `<install path>/SAS/`

Click **Next**.

6. Choose the machine that corresponds to your server setup, such as *Server tier*. Click **Next**.
7. Uncheck **Configuration Wizard**. It will be run later. Click **Next**.
8. Verify that Base SAS Software and SAS Profitability Management Data Integration and BI Server are licensed. Click **Next**.
9. Select the default install path and click **Next**.
10. Select install help files in the current language only and click **Next**.
11. Select **Install** to perform the installation.
12. On UNIX, a separate window will open and prompt you for the following information.
  - a. Whether you want to perform a new Installation (yes).
  - b. The target location as you did in step 9.
  - c. Whether you want to select any NLS translations (no).
  - d. Whether you want to be prompted for the root password (we recommend it).
  - e. Whether you want to install any SAS access engines (if you are using DBMS for the input then install the appropriate engine).
13. By default all the necessary components for SAS Profitability Management are selected for installation based upon the SID file selected in Step 4.

On a Windows server, you can verify, these components are:

- SAS 9.1
  - Base SAS
  - SAS Integration Technologies
  - SAS OLAP Server
  - SAS Transaction Assignment Server
  - SAS/ACCESS (choose the engine for the assignment server)
  - SAS/GRAPH
  - SAS/SHARE

- SAS/CONNECT (if the mid-tier includes the metadata server)
14. Perform the installation.
 

**Note:** *On a Windows server if progress stops for an extended period of time, you may have a hidden dialog window that is waiting for user feedback. Use the control sequence (typically ALT+TAB) to determine if you have a hidden window.*
  15. Click **Finish** to close the SAS Software Navigator.
  16. On UNIX, if you did not allow the installation to prompt for the root password, have your administrator run the SAS setup utilities to configure “User Authentication”.
  17. Restart the SAS Software Navigator and repeat steps 2-6 above.
  18. Check *only* **Configuration Wizard**. Click **Next**.
  19. Select **English** as the language for the install.
  20. Select a path to install the software and click **Next**.
  21. Select install help files in the current language only and click **Next**.
  22. Click **Install** to install the configuration wizard.

### Configure SAS Software

1. The Configuration Wizard will prompt for the metadata server, user IDs and passwords. Please refer to the chart on page 5 for the appropriate values.
2. Verify that all other values in `editConfiguration.properties` are correct. On most Windows servers, the provided default values are acceptable. On UNIX servers, you need to customize the values.

In the `editConfiguration.properties`, the following values are used by Profitability Management:

- a. **abmprofmva.sascode.dir:** This value should point to the location where the Transaction Assignment Server is installed. It should be set to one of the following:

**Windows:** `<Install Drive>:\SAS\SAS 9.1\abmprofmva\sasmisc`

**UNIX:** `/<install path>/SAS/SAS_9.1/misc/abmprofmva`

- b. **abmprofmva.data.model.dir:** This is the location where the Profitability Management models will be stored. It should be set to one of the following:

**Windows:**

`<Configuration Drive>\Lev1\Data\SASProfitabilityManagement\models`

**UNIX:**

`/<Configuration Path>/Lev1/Data/SASProfitabilityManagement/models`

- c. **abmprofmva.data.cubes.dir:** This is the location where the cube data created by Profitability Management for use by the SAS OLAP Server will be stored. It should be set to one of the following:

**Windows:**

`<Configuration Drive>\Lev1\Data\SASProfitabilityManagement\cubes`

**UNIX:** /

`<ConfigurationPath>/Lev1/Data/SASProfitabilityManagement/cubes`

3. Save the `editConfiguration.properties` file.
4. Verify that all other values in `editConfiguration.properties` are correct. If you changed a default value during the installation, a corresponding value may exist in this file.

5. Click **Next**. Configuration begins.
6. When you are notified that the Configuration Wizard completed successfully, close the Configuration Wizard and SAS Software Navigator.
7. Verify that the Configuration Wizard completed successfully.

### ***My Configuration Steps for the Data-tier***

Complete the instructions in the document *My Configuration Steps*

#### **Windows:**

If the document *My Configuration Steps* does not appear in a browser after the completion of the Configuration Wizard, double-click the `instructions.html` file under your configuration directory (for example, `<Configuration Drive>/instructions.htm`).

The completion of the Configuration Wizard automatically starts the metadata server and launches the SAS Management Console. When you log into the SAS Management Console for the first time, the Foundation Repository is created for you. These are the first three steps in the My Configuration Steps instructions.

#### **UNIX:**

Bring up a Web browser and open the `instructions.htm` in the `<Configuration Path>`. Follow the instructions in the `instructions.htm` document to start the metadata server and then SAS Management Console.

Once you have completed the process outlined in *My Configuration Steps*, you can optionally install the PM tutorial on a centrally located server that is hosting the workspace server and then you must install at least one SAS Profitability Management Client on page 17 and then proceed to the Post-Installation Guide on page 19.

## ***Installing the SAS Profitability Management Tutorial Data***

The following steps will guide you through installing the SAS Profitability Management Tutorial and its data on a machine that your workspace has access to. The location of the metadata differs on each machine and on your plan file. For a single server see page 9. For dual server, see page 10.

1. Start the SAS Software Navigator.
2. Select **English** as the language for the SAS Software Navigator.
3. Select the **Software Index** option. Click **Next**.
4. Enter the name and file location of the `SID.txt`. For example

**Windows:** `<Install Drive>:\SAS\SID.txt`

**UNIX:** `<install path>/SAS/sid.txt`

Click **Next** twice.

5. Expand the **CD Index** folder.
6. Expand the **SAS Profitability Management** folder.
7. Click on the **SAS Profitability Management Client** and scroll down to the bottom of the right window.
8. Select the **SAS Profitability Management Tutorial**.
9. Select the directory you want to install it in

#### **Windows:**

`<Configuration Drive>\Lev1\Data\SASProfitabilityManagement`

**UNIX:**

*<Configuration Path>/Levl/Data/SASProfitabilityManagement*

Click **OK**.

10. Close the SAS Software Navigator using the **File** Menu.
11. Using the operating system, create two directories in this install directory, one named `Tutorial_Start` and the other called `Tutorial_End`.
12. Move the SAS datasets with extension “.sas7bdat” files into `Tutorial_Start`.

## **Windows Client Installation**

This section provides instructions to install SAS Profitability Management on a client machine. You need to install SAS Rich Client Platform Version 3.2 and SAS Rich Client Platform Plug-ins Version 3.2 before you install SAS Profitability Management Client 1.3. If the order of the products is not correct, then install the SAS RCP software first and the SAS Profitability Management Client software. On one Windows machine, you will need to install SAS Management Console.

### **Getting Started**

1. Copy your SAS Software Depot.
2. Place your `SID.txt` and plan files in a known location, such as *<Install Drive>:\SAS*.

### **Install SAS Client Software**

1. Start the SAS Software Navigator.
2. Select **English** as the language for the SAS Software Navigator.
3. Use the **Advanced Deployment** option. Click **Next**.
4. Enter the name and file location of the `SID.txt`. For example, *<Install Drive>:\SAS\SID.txt*. Click **Next** twice.
5. Choose the **Specify a project directory...** option. Enter the location of your plan file, such as *<Install Drive>:\SAS*. Click **Next**.
6. Choose the machine that corresponds to your client. Click **Next**.
7. Perform the installation of the SAS Rich Client Platform, Version 3.2, the SAS Rich Client Platform Plug-ins, Version 3.2, and the SAS Profitability Management Client. Optionally one Windows client must have SAS Management Console installed.
8. Click **Install**.
9. Click **Finish** to close the SAS Software Navigator.



## Chapter 4 - Post-Installation Guide

After installation and configuration, follow these post-installation steps to verify the metadata and all configurations, add PM users, and test the installation. Please see the *SAS Profitability Management Release Notes* for information to create input models.

### **Verification of Metadata and Additional Configurations**

#### **Validate Metadata Configuration.**

You should validate the *SAS Trusted User*, *PM Users* Group, *PM Model* Library, and *Default Access Control Templates* (ACT). If the information is not correct, please correct it. If an object is missing, please create it. You can find the information in the file *instructions.html*, which is in the configuration directory. See the section in *instructions.html* just above the “Load SAS Profitability Management Metadata” section.

To validate the configuration do the following:

1. Open the SAS Management Console as sasadm and select the **Foundation** repository.
2. Click **User Manager**.
  - a. Right click the **SAS Trusted User** in the right-hand panel and select **Properties**.
  - b. Select the **Logins** Tab.
  - c. If the first entry does not have **DefaultAuth** in the Authentication Domain, then
    - i. Select the first entry and click **Modify**.
    - ii. Change the **Authentication Domain** to **DefaultAuth**.
    - iii. Re-enter the passwords and click **OK**.
  - d. Click **OK**.
3. Right-click the **PM Users** group in the right-hand panel and select **Properties**.
  - a. Select the **Members** Tab.
  - b. Verify that **SAS Trusted User** is in the Group. Click **OK**.
4. Open the **Authorization Manager** and click on the **Access Control Templates**.
  - a. Right-click the **Default ACT** in the right-hand panel and select **Properties**.
  - b. Select the **Users and Permissions** tab.
  - c. Click the **PM Users** group and click **OK**.
  - d. Make sure **Grant** has been selected for all permissions except **Administer**. Click **OK**.
5. Open the **Data Library Manager** and the **SAS Libraries**.
  - a. Right click the **pmodel** library and select **Properties**.
  - b. Select the **Options** tab and see that the library path is correct.
  - c. Select the **Assign** tab and see that one server is selected (highlighted). Click **OK**.
6. Close the SAS Management Console.

## Configure the SAS Profitability Management Language

SAS Profitability Management language must be set to English to run correctly. To do this, use the following steps:

1. Open the `config.ini` file in `<Install Drive>:\SAS\SASProfitabilityManagement\1.3\configuration`.

2. Add this line to the end of the file:

```
osgi.nl=en_US
```

3. Save the file.

## Configure Apache Tomcat

SAS recommends that the memory usage settings for Tomcat be reviewed and adjusted up to no more than 1.5 gigabytes based upon the available physical memory on your server. You can adjust this in the `startServletContainer` file. This file should be found at

Windows: `<Configuration driver > \ Lev1\web\startServletContainer.bat`

UNIX: `/<Configuration Path>/Lev1/web/startServletContainer.sh`.

This file contains the variable `CATALINA_OPTS`. There are two options that can be adjusted to set a minimum, `-Xms`, and maximum, `-Xmx`, heap size for the JVM, as follows:

```
set CATALINA_OPTS= -server -Xms<<min>>m -Xmx<<max>>m
```

The minimum should be no smaller than what it is currently set at. The maximum depends on the amount of installed RAM on the machine. If you will have more than 10 concurrent users, use these settings:

```
set CATALINA_OPTS= -server -Xms1280m -Xmx1280m
```

For UNIX Web servers, you need to increase the stack size by changing the `Catalina_OPTS` from “`-Xss128k`” to “`-Xss256k`”.

For the changes to take effect, you need to stop and start the SAS Application Services and Tomcat.

## Create SAS Profitability Management Users

Create a SAS Profitability Management user in the SAS Management Console for each operating system user that will login to SAS Profitability Management.

1. Open the SAS Management Console using `sasadm` and select the **Foundation** repository.
2. Select **User Manager**.
3. Right-click **User Manager** and select **New > User**.
4. Name: `<<any name>>`
5. Select the **Groups** tab.
6. Select the **PM users** group created above and click the **right arrow** to add the user to the group.
7. Select the **Logins** tab
8. Click **New**.

9. Enter a valid operation system user ID. For Windows, it should be prefixed by the domain. For UNIX no prefix is needed.
10. Set the authorization as **DefaultAuth**
11. Enter a password.
12. Click **OK** on **New Logins Properties**.
13. Click **OK** on **New User Properties**.
14. Close the SAS Management Console

**Note:** *When assigning the login credentials for each user, make sure you prefix each Windows user name with the domain name of the user. You don't need to prefix UNIX users.*

### **Adding Window Users to the PM Users OS Group**

You must add the users created above to the Windows operating system PM Users group.

For Windows Server, add the users with following steps:

1. Open the Computer Management tool via **Start**→**Settings**→**Control Panel**→**Administrative Tools**→**Computer Management**.
2. Open the **Groups** folder under **Systems Tools**→**Local Users and Groups**.
3. Select the **PM Users** group, right-click, and select **Properties**.
4. Click **Add**.
5. Enter the <<domain>>\<<username>>
6. Click **OK** twice.
7. Close the **Computer Management** Dialog.

### **Adding UNIX Users to the PM Users OS Group**

You must add the users created above to the UNIX operating system pmusers group.

1. Open the file `/etc/group`.
2. Add an entry for the pm users where 200 is an unused group ID.  

```
pmusers::200:<userid1>,<userid2>,...
```
3. Save the file and exit the editor.

## **Configure the SAS Profitability Management Database**

After the SAS Profitability Management client has been installed, the first user to log in will be prompted to create the PM Model database.

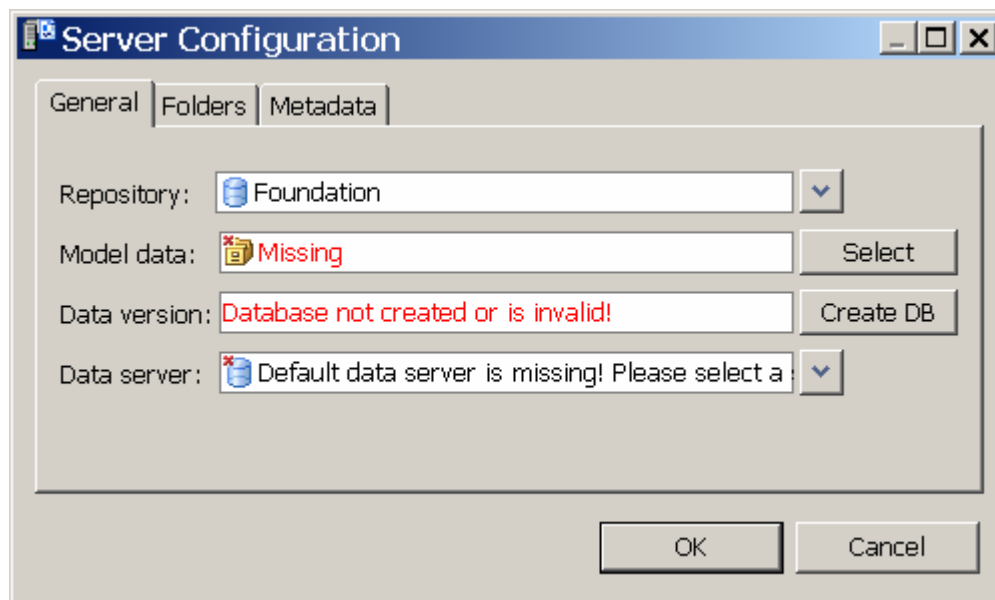
**Do not manually put anything in the PM Model database.** Input data, output data, and the PM Model database should be in separate directories.

To complete this action, perform the following steps:

1. Launch the SAS Profitability Management client. You will be prompted to log into the SAS Metadata Server. Enter a user name and password that is valid for your metadata installation. If the user is a network windows user, then prefix the user name with its domain and a “\”.

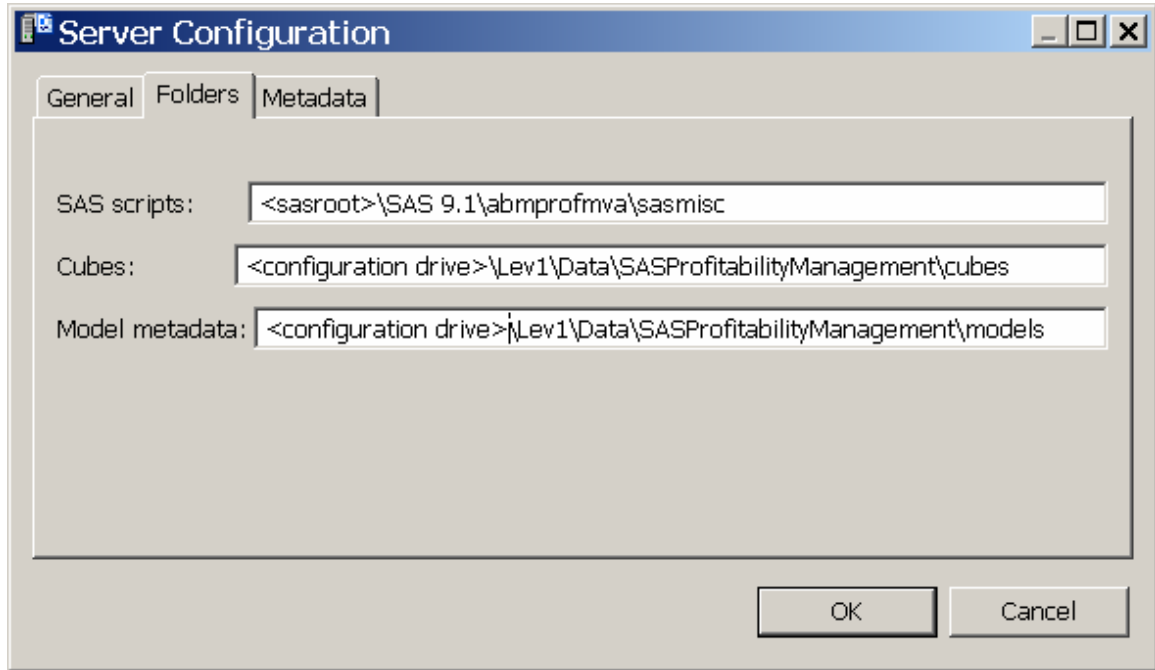


2. The Server configuration dialog appears.

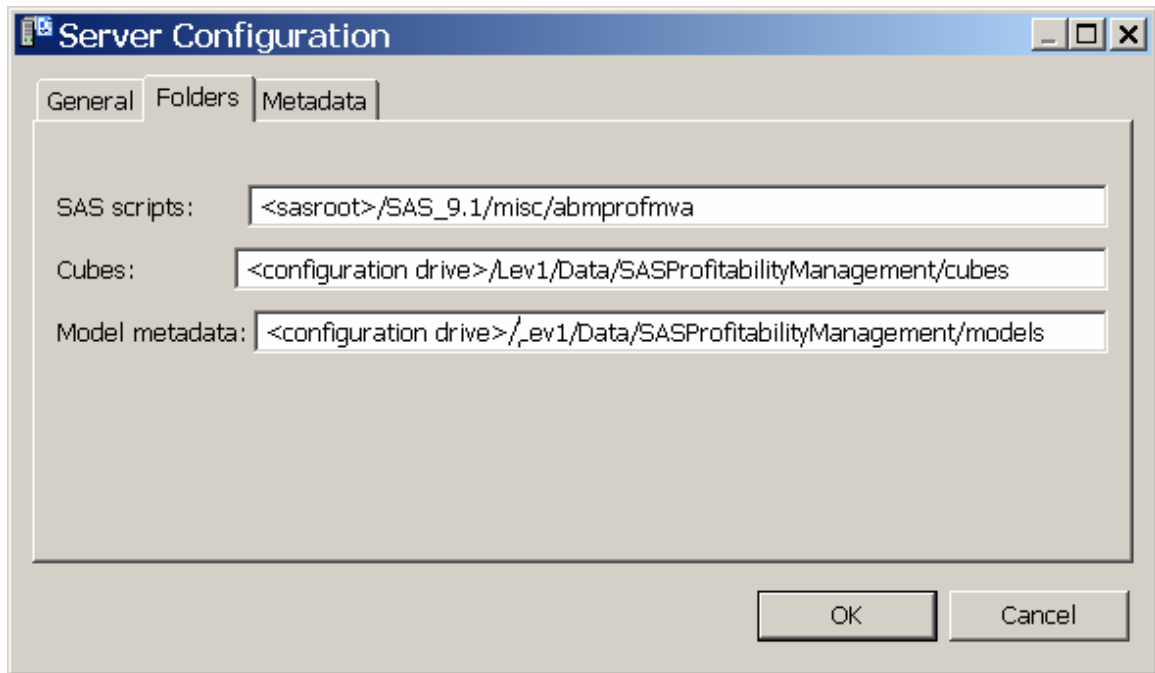


3. Select the **Folders** tab and supply the paths for SAS scripts, Cubes, and Model metadata as found in the `instructions.html` in the metadata directory. See the section just above the “Load SAS Profitability Management Metadata” section.

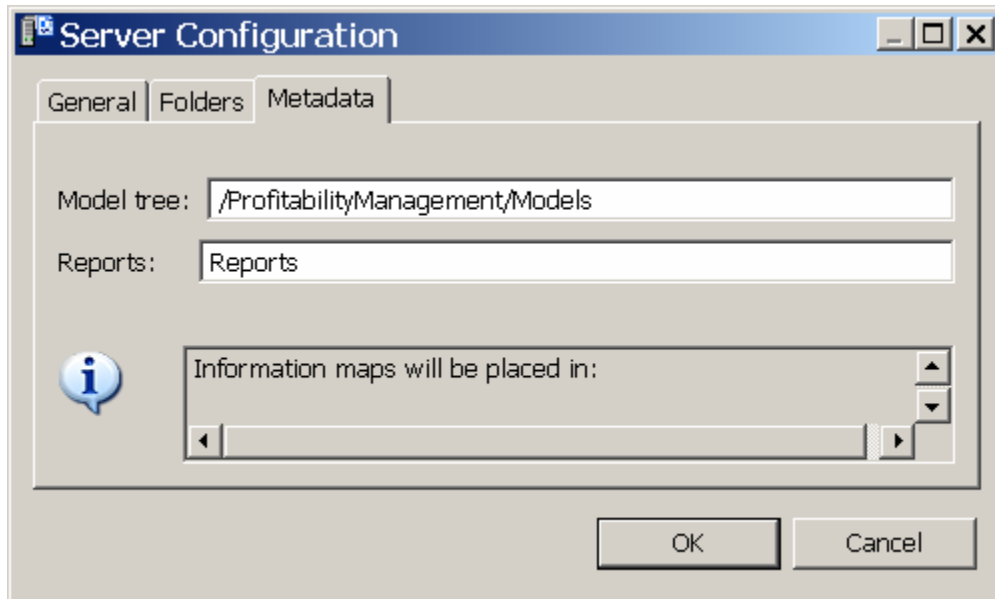
For a **Windows SAS Profitability Management Server**, replace `<sasroot>` with the location you installed SAS to and replace `<configuration drive>` with the location you installed the metadata.



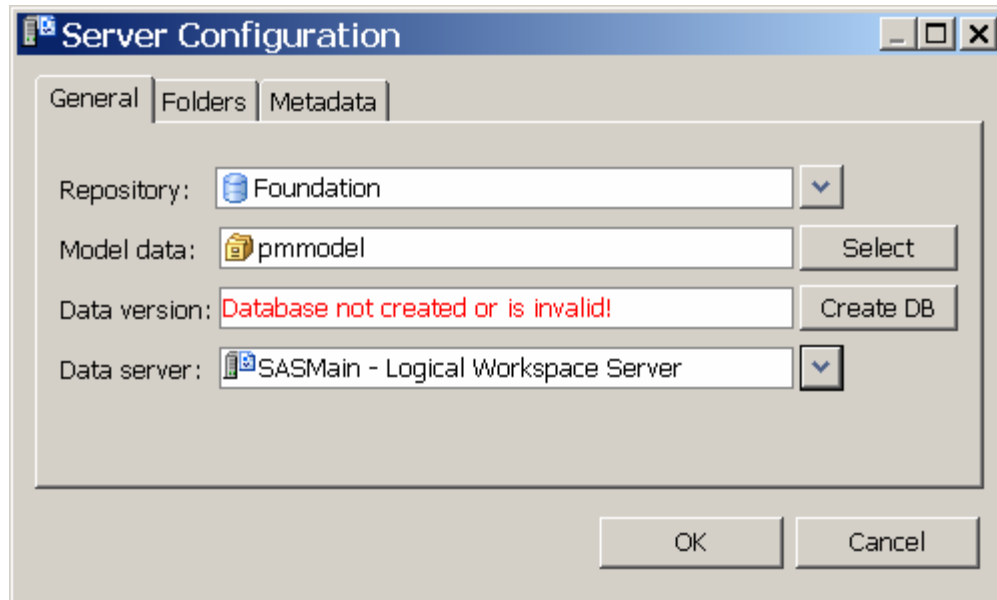
For a **UNIX SAS Profitability Management Server**, replace <sasroot> with the location you installed SAS to and replace <configuration drive> with the location you installed the metadata. Notice that the location of the SAS scripts on UNIX is different from the location on Windows.



4. Select the **Metadata** tab and supply the metadata folders for Model tree and Reports for metadata folders.

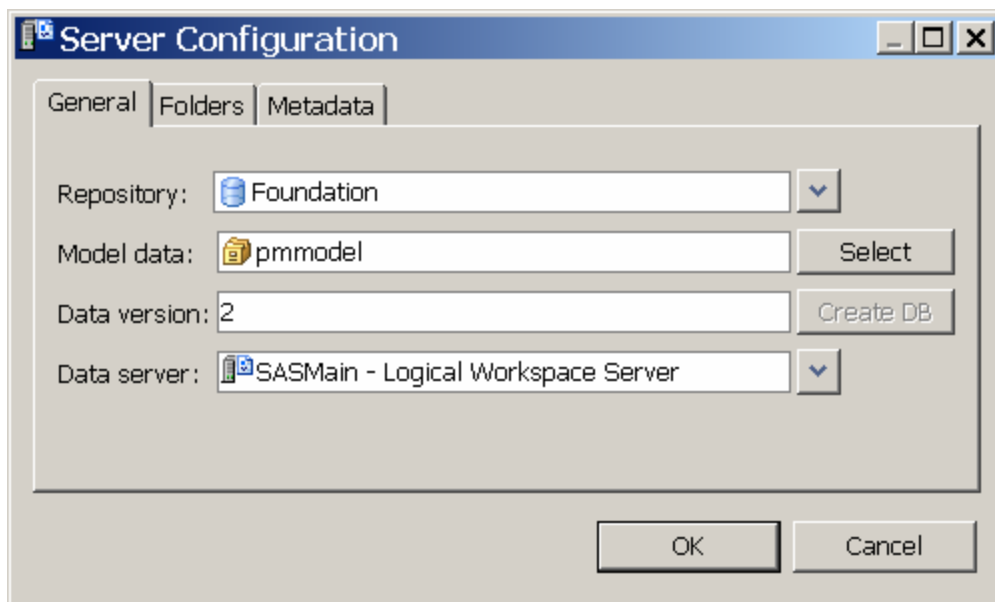


5. On the **General** tab, select the Foundation repository, select **pmmodel** for Model data and select the Data server that has a workspace server that you want to use.



6. Click **Create DB**. This populates the PM model SAS library in the SAS Management Console. Once the necessary data has been supplied, the database will be created and the version is displayed.

Click **OK** to close this dialog.



## Testing Your SAS Profitability Management Installation

### Test SAS Profitability Management Client

Test the SAS Profitability Management Client by using the SAS Profitability Management Tutorial. The tutorial document, named `SAS Profitability Management_Tutorial.pdf`, is found in the configuration directory as follows:

**Windows:** `<Configuration Drive>\Lev1\Data\SASProfitabilityManagement`

**UNIX:** `/<Configuration Path> /Lev1/Data/SASProfitabilityManagement`

The steps to install the tutorial can be found on page 16.

Register the tutorial input and output libraries in metadata using the following steps:

1. Open the SAS Management Console on Windows client and select the **Foundation** repository.
2. Expand **Data Library Manager**.
3. Right-click **SAS Libraries** and select **New Library...**
4. Select **SAS Base Engine Library** and click **Next**.
5. Name: *Tutorial End* and click **Next**.
6. Libref: *Tut\_End*
7. For path specification, click **New**.
8. Path:

**Windows:** `<Configuration Drive>\Lev1\Data\SASProfitabilityManagement/Tutorial_End`

**UNIX:** `<Configuration Path>/Lev1/Data/SASProfitabilityManagement/Tutorial_End`

9. Click **OK**.
10. Click **Next**.
11. Select **SASMain** (or another server) and click **Next**.
12. Click **Finish**.
13. Repeat steps 2 thru 12 with name= *Tutorial Start* and libref = *Tut\_Star* and path  
**Windows:** `<Configuration Drive>\Lev1\Data\SASProfitabilityManagement\Tutorial_Start`  
**UNIX:** `/<Configuration Path>/Lev1/Data/SASProfitabilityManagement/Tutorial_Start`
14. Right-click the new library, *Tutorial Start*, and select **Import tables**.
15. Click on **Next**.
16. If prompted enter a user ID and password that has access to the files and click **Next**.
17. Select all the tables and click **Next** twice.

18. Close the SAS Management Console.
19. Using the operating system tools, give the PM Users Operating System Group full access to both the *Tut\_Star* and the *Tut\_End* folders.

Work through the SAS Profitability Management tutorial to do the following:

1. Create a model following the tutorial.
2. Create transactions.
3. Import the behaviors.
4. Import the associations.
5. Calculate the model.
6. Create the reports and generate a cube. You must have the OLAP server running to generate the information map.

### Test the SAS Profitability Web Reporting Client on Windows

To test the SAS Profitability Web on Windows, you must start the SAS Services and Tomcat. In the following example, replace <Configuration Menu> with the name of your SAS BI Menu. An example is SASPMConfig.

1. Start the SAS Services Application if it is not already running (**Start**→**Programs**→**SAS**→<Configuration Menu>→**Start SAS Services Application**) on the Web server.
2. Start Tomcat from the same place.
3. Open the Web browser and type in the URL for the SAS Profitability Management Web reporting application. This is usually

`http://<your server>:8080/SASProfitability/`

### Test the SAS Profitability Web Reporting Client on UNIX

To test the SAS Profitability Web on UNIX, you must start the SAS Services and Tomcat. Replace <Configuration Path> with the location of your metadata.

1. Start the SAS Services Application if it is not already running on the Web server.

`/<Configuration Path>/Lev1/Web/StartRemoteServices.sh`

2. Start Tomcat from the configuration directory. For example,

`/<Configuration Path>/Lev1/Web/startServletContainer.sh`

3. Open the Web browser and type in the URL for the SAS Profitability Management Web reporting application. This is usually

`http://<your server>:8080/SASProfitability/`







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