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SAS® Performance Management Solutions

9.1.3 to 9.2 Migration Guide

SAS® Documentation

The correct bibliographic citation for this manual is as follows: SAS Institute Inc. 2009. *SAS® Performance Management Solutions: 9.1.3 to 9.2 Migration Guide*. Cary, NC: SAS Institute Inc.

SAS® Performance Management Solutions: 9.1.3 to 9.2 Migration Guide

SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st electronic book, December 2009

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Chapter 1

Introduction

About This Book

The *SAS Performance Management Solutions 9.1.3 to 9.2 Migration Guide* describes the migration approach for upgrading your SAS Performance Management Solutions *X*.4 content and configuration from SAS 9.1.3 to SAS 9.2.

If you are performing a migration, begin with this document, which will refer you to the *Installation Instructions for Release 5.1 of the SAS Performance Management Solutions* at various points.

Notes and Restrictions

Be aware of the following notes and restrictions:

- If you are migrating SAS Strategic Performance Management 2.4, see "SAS Strategy Management: Partial Promotion Tools" on page 57 for additional options.
- You cannot use the SAS Migration Utility and the Software Deployment Wizard to migrate the SAS Intelligence Platform and then rerun the same software to migrate the SAS Performance Management solutions later.
- You cannot migrate installations prior to *X*.4.
- If you are installing new products in addition to migrating old ones, first migrate the *X*.4 installation. Then install the new products.

Conventions

This book uses the following conventions:

Convention	Description
data tier	The machine on which you install the SAS Solutions Services data-tier software, as well as the data-tier software for SAS Financial Management, SAS Human Capital Management, and SAS Strategy Management, depending on the products you are installing.
metadata tier	The machine on which you installed the SAS Metadata Server. Usually, this is the same machine as the data tier.
middle tier	The machine on which you installed Oracle WebLogic and on which your Web applications run.
single-tier installation	An installation that is done on one machine. In that case, the single machine functions as both the data tier and the middle tier, and you should follow instructions for both the data tier and the middle tier.
multi-tier installation	An installation that is done on more than one machine (for example, with a data tier and a middle tier).
SAS-config-dir	The path to the SAS configuration directory in the operating system (such as **`C:\SAS\Config`**).
`!sasroot`	The SAS root directory. In a SAS 9.1.3 installation, **`!sasroot`** is typically **`C:\Program Files\SAS\SAS 9.1`**. In a SAS 9.2 installation, **`!sasroot`** is typically **`C:\Program Files\SAS\SASFoundation\9.2`**.

References

Refer to the following documents to assist with your installation and migration:

- *Installation Instructions for Release 5.1 of the SAS Performance Management Solutions*.

  This book contains instructions for installing third-party software, creating users, and installing and configuring the SAS Performance Management software.

  It is available on the SAS Software Depot as **`products\soldatatier__92110__prt__xx__sp0__1\readme.pdf`** or at **`http://support.sas.com/documentation/installcenter/en/ikfmofrii/63034/PDF/default/install.pdf`**.

- For information about the system requirements for these solutions, refer to the appropriate document:

  - *System Requirements for SAS Financial Management 5.1* at **`http://support.sas.com/documentation/installcenter/en/ikfmofrsr/63096/PDF/default/sreq.pdf`**

  - *System Requirements for SAS Human Capital Management 5.1* at **`http://support.sas.com/documentation/installcenter/en/ikhcmofrsr/63098/PDF/default/sreq.pdf`**

  - *System Requirements for SAS Strategy Management 5.1* at **http://support.sas.com/documentation/installcenter/en/ikspmofrsr/63099/PDF/default/sreq.pdf**

- *SAS Solutions Services: System Administration Guide*, available at **http://support.sas.com/documentation/solutions/admin/index.html**
- (Optional) *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*, available at **http://support.sas.com/92administration**.

  This is a comprehensive guide for migrating the SAS Intelligence Platform.

Chapter 2

Preliminary Tasks

Important Assumptions

This document makes the following assumptions:

- You have prepared for a standard installation (such as installing required third-party applications, planning which tiers are going to be installed on which machines, and so on).

  For installation information, see *Installation Instructions for Release 5.1 of the SAS Performance Management Solutions*.

- You have prepared a software depot and an installation plan file.

Create the Required Operating System Accounts

Create the required external accounts in the operating system for the primary users, as listed in your preinstall checklist.

Note: When performing an installation with migration from SAS 9.1.3, you must use external accounts, not the new SAS 9.2 internal accounts. External accounts are defined outside the metadata repository (for example, in the operating system or in MySQL Server).

The following table summarizes the required external accounts and the differences between SAS 9.1.3 and SAS 9.2.

Note: Not all these accounts have corresponding metadata identities.

Table 2.1 *Required External User Accounts*

External Account (SAS 9.1.3)	External Account (SAS 9.2)	Example (SAS 9.2)
SAS Installer	SAS Installer	*domain*\installer-ID
SAS General Server User	SAS Spawned Servers account	*domain*\sassrv
SAS Administrator	SAS Administrator	*domain*\sasadm
SAS Trusted User	SAS Trusted User	*domain*\sastrust
SAS Guest User	not applicable	
not applicable	SAS Anonymous Web User	*domain*\webanon
SAS Demo User	SAS First User	*domain*\sasdemo
Solutions Role Administrator	SAS Solutions Administrator	*domain*\slnadm
SAS Web Administrator	not applicable	
not applicable	Solutions Host User	*domain*\slnhost

Notes:

- The installer account used for migration must be the same account that was used to deploy SAS 9.1.3. On Windows, this account must be a member of the Administrators group in the operating system.
- The MySQL User is defined in MySQL Server and does not have a domain prefix.

Perform Checks Before Running the SAS Migration Utility

Overview

On a single-tier system, perform all the pre-migration checks listed. On a multi-tier system, perform the pre-migration checks on the specified machines.

Change Directory Names

The SAS Migration Utility expects that the SAS Performance Management Solutions installation directories be named as they were before the *X*.4.1 release. If you installed the *X*.4.1 release, you must temporarily rename the following directories from the *X*.4.1 names to the expected names. This renaming ensures that the SAS Performance Management Solutions content is migrated properly.

If the directories already have the expected names, continue to the next section.

Note: SASHOME represents the **`C:\Program Files\SAS`** directory.

Table 2.2 *Expected Directory Names on an X.4 Installation*

Tier	*X*.4.1 Name	Expected Name
Data tier	***SASHOME*`\SASFinancialManagement\4.4.1`**	***SASHOME*`\SASFinancialManagement\4.4`**
Data tier	***SASHOME*`\SASHumanCapitalManagement\4.4.1`**	***SASHOME*`\SASHumanCapitalManagement\4.4`**
Data tier	***SASHOME*`\SASSolutionsServices\1.4.1`**	***SASHOME*`\SASSolutionsServices\1.4`**
Data tier	***SASHOME*`\SASStrategicPerformanceManagement\2.4.1`**	***SASHOME*`\SASStrategicPerformanceManagement\2.4`**
Middle tier	***SASHOME*`\SASStrategicPerformanceManagement\2.4.1`**	***SASHOME*`\SASStrategicPerformanceManagement\2.4`**

After the SAS Migration Utility runs successfully, restore these directories to their former names.

(Data Tier) Check the Required Hot Fix Level

Before you migrate the SAS 9.1.3 environment, ensure that the metadata server version is 9.1.3SP4. In addition, ensure that hot fix E9BC59 has been applied by confirming the existence of the file **`!sasroot\core\sasinst\hotfix\e9bc59wn.aud`**. In addition, make sure that you followed the post-installation instructions when you applied the hot fix.

CAUTION:

Be sure to make this update before the migration. Otherwise, you will need to delete the configuration directories and rerun the configuration pass of SAS Deployment Wizard. If you applied the hot fix but are uncertain as to whether you followed the post-installation steps, follow them now.

To download the hot fix, point your browser to the following location:

http://ftp.sas.com/techsup/download/hotfix/ve9/base/e9bc59/win/e9bc59wn.exe

To view the Readme file that accompanies the hot fix, point your browser to this location:

http://ftp.sas.com/techsup/download/hotfix/ve9/base/e9bc59/win/e9bc59wn.txt

The Readme file contains the post-installation steps, which are as follows:

1. After installing this hot fix, edit the omaconfig.xml file in the following directory: ***SASSolutionsConfig*\Lev1\SASMain**.

   After installing this hot fix edit your omaconfig.xml file in **Lev1/SASMain** and add the tag

   ```
   <OMA FOUNDATION_ONLY_GROUPS_USERS="YES" />
   ```

   just above the

   ```
   <RPOSMGR.../>
   ```

   tag. For example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <OMAconfig>
      <OMA ADMINUSERS="MetadataServer/adminUsers.txt"
         TRUSTEDUSERS="MetadataServer/trustedUsers.txt"
         MAXACTIVETHREADS="8"
         GROUPSFORMEMBERASSOCDELETE="DESKTOP_PORTALPAGES_GROUP,
            Portlet Template Group,
            OrderingGroup,
            DESKTOP_PAGEHISTORY_GROUP,
            Portal Collection"/>
       <OMA FOUNDATION_ONLY_GROUPS_USERS="YES" />
     <RPOSMGR PATH="MetadataServer/rposmgr"/>
   </OMAconfig>
   ```

2. Restart the metadata server. A metadata server restart is required in order to pick up changes in this hot fix.

(Data Tier) Update the Metadata for SAS Data Integration Studio

CAUTION:

Be sure to make this update before the migration. Otherwise, you will need to delete the configuration directories and rerun the configuration pass of SAS Deployment Wizard.

Before performing a migration, update the metadata for SAS Data Integration Studio on the *X*.4 data tier:

1. Point your browser to the following SAS Note:

   http://support.sas.com/kb/37/686.html

2. Download the JAR file and follow the SAS Note instructions.

(Data Tier) Run the Diagnostic Tool

The diagnostic tool gathers information about the state of your stage, DDS table model, and SASSDM table models. The diagnostic tool also ensures that the environment is ready for migration. You must correct any errors before continuing the migration.

To run the diagnostic tool:

1. Ensure that the metadata server is running.
2. Log on to the data-tier computer, open a command window, and navigate to **`SASHOME\SASSolutionsServices\1.4\DataTier\Diagnostics\DataModels`** (SASHOME is typically **`C:\Program Files\SAS`**).
3. Read the chk_dataModels.doc file in this directory.
4. Edit the chk_dataModels.cmd file to specify the parameter _installDrive=.
5. Run chk_dataModels.cmd:

   `chk_dataModels errorsonly 1.4 sastrust` ***`sastrust_Password`*** **`localhost`** ***`metadata_server_port_numbersas_config_location`***

   Note: Use **`1.4`** even if your release level is 1.4.1.

   Provide valid values for the following arguments:

   sastrust_Password
   The password for the sastrust user account.

   metadata_server_port_number
   The metadata server port number. The default is 8561.

   sas_config_location
   The full path to the SASV9.CFG file.

   Here is an example:

   ```
   chk_dataModels errorsonly 1.4 sastrust MyPassword localhost
   8561 "C:\SAS\SASSolutionsConfig\Lev1\SASMain\sasv9.cfg"
   ```

6. Check the output files that are produced by chk_dataModels.cmd.

   The output files are in the same directory as chk_dataModels.cmd, and their names follow the pattern diff_site_*.html. Only tables that differ from the standard model are listed in the report output.

   If you see a column in the report whose data type and length match the standard model, then only the label has been changed, and you can ignore the difference.

   If a column is reported as missing in the site model, it usually results from a case difference between the column name in the site model and the SAS model. Differences in the case of a column name can be safely ignored.

   Investigate and correct any other differences to ensure a valid migrated model.

Install the SAS Migration Utility

The SAS Migration Utility is a tool to package content from the SAS 9.1.3 installation so that it can be migrated to a new SAS 9.2 installation. For more information about the SAS

Migration Utility, see the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*, available at **http://support.sas.com/documentation/cdl/en/bimig/61696/HTML/default/mig600.htm**

To install the SAS Migration Utility:

1. In the directory where you downloaded the software depot, find the directory named **utilities\smu**.

   This directory contains the smu.exe file, the smu.properties.template file, and possibly other files and directories.

2. Copy the contents of the **utilities\smu** directory to a new directory on each of the computers in your SAS 9.1.3 installation.

   For example, create **C:\Program Files\SAS\SASMigrationUtility\9.1.3** and copy the files there.

Run the SAS Migration Utility

Perform the following steps on each computer that needs migration. Begin with the computer that is running the SAS 9.1.3 metadata server:

1. Create a shared directory on the network that is available to all of the computers in the installation.

   This directory will become the SAS Migration Utility migration package directory. All SAS Migration Utility output from all computers will be stored in this directory.

2. Navigate to the directory where you copied the contents of the **utilities\smu** depot directory.

3. Copy the smu.properties.template file to smu.properties.

4. Edit the smu.properties file with a text editor.

   Note: The smu.properties file is in the Java properties file format. These format rules are most important to apply when you are editing the smu.properties file:

   - Lines that begin with the # character are comments and have no effect.
   - Backslash characters (\) must be doubled. For example, C:\\Program Files\\SAS

5. Review the entire smu.properties file and make changes to property settings as necessary.

   The comments in the file explain each property that must be set. This table explains some specific properties:

Property	Description
SMU.Output.Dir	This property contains the path to the SAS Migration Utility migration package directory. Enter the path to the shared directory that you created in step 1.

Property	Description
SMU.password	The smu.properties comments state that the SMU.password property value must be encoded in the {sas001} format using the PWENCODE procedure. However, a plain-text password is also accepted. If you choose to specify a plain-text password, for security, erase this password immediately after running the SAS Migration Utility.
SMU.SASROOT	For machines on which SAS is installed, enter the path to the **!sasroot** directory. For example: `SMU.SASROOT=C:\\Program Files\\SAS\\SAS 9.1` On a middle-tier machine, comment out this property.

6. Open a command window in the directory in which you installed the SAS Migration Utility and submit one of the following commands:

   - If this is the computer on which the DAV server is running (either Xythos or Apache), then submit this command:

     smu.exe -s -a -davtier -properties "*full_path_to_SMU_install_directory*\smu.properties"

   - Otherwise, submit this command:

     smu.exe -s -a -properties "*full_path_to_SMU_install_directory*\smu.properties"

     Note: In the previous commands, quotation marks are required around *full_path_to_SMU_install_directory*\smu.properties only if there is a space in the pathname.

   Note: You must specify the full path to the smu.properties file in the -PROPERTIES option, even though the smu.properties file is in the current directory, the same directory as the smu.exe file. This is because smu.exe is actually a self-extracting archive; it extracts the complete program into a separate temporary directory and runs it from there.

   After a few seconds, a second command window opens, and the SAS Migration Utility console output appears.

7. Wait for the SAS Migration Utility to finish running.

Check the output as described in "Check the SAS Migration Utility Migration Package" on page 11. For additional troubleshooting help, see "Errors Running SAS Migration Utility" on page 47.

Check the SAS Migration Utility Migration Package

In step 5 in the previous section, you set the SMU.Output.Dir property in the smu.properties file to point to the SAS Migration Utility migration package directory, the directory under which all migrated content will be stored.

There will be a subdirectory in the SAS Migration Utility migration package directory named after each computer on which you run SAS Migration Utility. Inside this

subdirectory will be many other subdirectories, each containing backed-up content from a particular SAS product (some directories might be empty).

To check the SAS Migration Utility migration package:

1. After smu.exe finishes running, check the final few lines of output in the command window to determine whether the SAS Migration Utility produced error messages.
2. If the SAS Migration Utility produced error messages, take these steps:
   a. View the migrate.log file in the computer's subdirectory inside the SAS Migration Utility migration package directory to determine the cause of the error.
   b. Look for and correct any remaining errors. If you have made corrections, rerun the SAS Migration Utility with the **`-replace`** option.
3. Review the migration status messages for the products:
   a. In the subdirectory named AnalysisReport, open the FullReport.html file, and review the messages.

      There are migration status messages for each product. This report indicates whether any products must be upgraded or have patches installed before migration can be completed.
   b. Run the SAS Migration Utility again after installing any patches.
   c. Look for and correct any remaining error messages before continuing.
   d. Examine all warning messages.

      Warning messages are for informational purposes.

      Note: Warning messages are expected on most systems. For example, a warning message will appear in the Analysis Report for each data directory found in metadata that exists outside of the SAS Configuration directory. If these are needed in the SAS 9.2 installation, you must migrate them manually.
4. Perform these additional checks to verify that data has been backed up correctly:
   a. In the **`metadatasrv`** subdirectory, verify the existence of these subdirectories: **`MetadataRepositories`** and **`rposmgr`**.
   b. In the **`MetadataRepositories`** subdirectory, check for the existence of one subdirectory for each metadata repository.
   c. In the **`WFS`** subdirectory, verify the existence of a subdirectory named **`Area1`**. The **`Area1`** subdirectory should contain the WFSDump.xml file as well as several files with names that begin with "X" and end with a number.
   d. In the **`soldatatier`** subdirectory, verify the existence of a **`SQL`** subdirectory containing a file named sassdm.sql. This file might be large (megabytes or hundreds of megabytes.)
   e. (SAS Strategy Management) In the **`spmdatatier`** subdirectory, verify the existence of a **`SQL`** subdirectory containing a file named spm.sql.
   f. (SAS Human Capital Management) In the **`hcmdatatier`** subdirectory, verify the existence of a **`SQL`** subdirectory containing a file named hcm.sql.

Repeat for Each Computer

Repeat the steps in "Run the SAS Migration Utility" on page 10 and "Check the SAS Migration Utility Migration Package" on page 11 for every other computer in this installation (other than client machines).

Note: The FullReport.html file shows a failure (✕) for the SAS Metadata Server Product when the smu.exe is run on any tier other than the metadata server machine.

(SAS Human Capital Management Data Tier) Export the FORMATS Catalog

If your site installed SAS Human Capital Management and you are migrating from 32-bit Microsoft Windows to 64-bit Microsoft Windows, you need to export the FORMATS catalog from the old installation before running the SAS Deployment Wizard.

Note: If you did not install this product, or if you are not migrating to 64–bit Windows, you can skip this task.

Follow these steps on the X.4 data-tier server:

1. Start SAS.
2. Assign a libref to the SAS Human Capital Management FORMATS catalog.

   For Microsoft Windows, the catalog is normally located at ***SAS-config-dir*\Lev1\SASMain\SASSolutionsServices\SASFormats**, where *SAS-config-dir* represents the configuration directory.
3. Execute the following code to create a .CPO file of the FORMATS catalog:

   ```
   Proc cport catalog=libref.formats file='path\formats44.cpo';
   Run;
   ```

   Here is an example:

   ```
   Libname v4fmts
      'c:\sas\sassolutionsconfig\lev1\sasmain\sassolutionsservices\sasformats';
   Proc cport catalog=v4fmts.formats file='c:\formats44.cpo';
   Run;
   ```

   - *libref* is the libref that was assigned for the FORMATS catalog.
   - *path* is the name of the directory in which to save the .CPO file.
4. Copy the .CPO file (formats44.cpo) to the data-tier machine in the 5.1 installation.

   You will use this file later. See "(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package" on page 20 (multi-tier installations) or "(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package" on page 16 (single-tier installations).

Chapter 3

Single-Tier Installation and Configuration

Overview

Read the instructions in this chapter. Then follow the installation steps in the *Installation Instructions for Release 5.1 of the SAS Performance Management Solutions*.

Note: The installation guide refers to the application server directory as **`SASApp`**. In a migrated system, this directory is typically named **`SASMain`**.

For troubleshooting help with SAS Deployment Wizard, see "Configuration Errors" on page 48.

Installation and Configuration

1. Run the SAS Deployment Wizard

For installations on a single machine, follow a two-pass installation and configuration.

Run the SAS Deployment Wizard, keeping these points in mind:

- **Deployment type.** When you are asked to select a deployment type, deselect the **Configure SAS Software** check box, so that the software is installed but not configured. You will configure the software in a second pass through the SAS Deployment Wizard.
- **User names.** When you are asked for an account user name and password, check the domain name prefix carefully to ensure that it is correct for your site. It might still have

the domain name prefix from the SAS 9.1.3 installation. Remember to use external accounts, not the new 9.2 internal accounts.

Note: MySQL and WebLogic account names are created in MySQL Server and Oracle WebLogic. They are not operating system accounts. Do not add a host name prefix to these account names.

2. Update the Installed Files and Migration Package

Update the Migration Macros

Perform the update that is documented in SAS Note 37633.

1. Point your browser to **http://support.sas.com/kb/37/633.html**.
2. Download the .sas files from the SAS Note.
3. Copy the files to the following locations:
   - Copy the migr8dds.sas file to **!sasroot\soltnsdata\sasmacro**
   - Copy the migr8stg.sas file to **!sasroot\soltnsdata\sasmacro**
   - Copy the migr8hcm.sas file to **!sasroot\hrds\sasmacro** (for SAS Human Capital Management only)

(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package

If your site installed SAS Human Capital Management and you are migrating from 32-bit Microsoft Windows to 64-bit Microsoft Windows, you need to replace the FORMATS catalog in the migration package after the installation pass, and before the configuration pass. You should have exported the FORMATS catalog already. (See "(SAS Human Capital Management Data Tier) Export the FORMATS Catalog" on page 13.) If not, do so now.

Then perform the following steps on the 5.1 data-tier server:

1. Start SAS.
2. Assign a libref to a temporary location where the FORMATS catalog will be extracted.
3. Extract the FORMATS catalog by running the following code:

   ```
   Proc cimport catalog=libref.formats infile='path\formats44.cpo';
   Run;
   ```

   - *libref* is the temporary location in which the FORMATS catalog will be created.
   - *path* is the location of the formats44.cpo file that you copied from the 4.4 server.

   Here is an example:

   ```
   Libname v5fmts 'c:\';
   Proc cimport catalog=v5fmts.formats infile='c:\formats44.cpo';
   Run;
   ```

4. Copy the FORMATS catalog that you created (**c:\formats.sas7bcat**) to the following path in the SAS Migration Utility package on the 4.4 data-tier: ***path_to_SMU_package*\4.4_data_server_name\hcmdatatier\FORMATS**

   This copy will overwrite the FORMATS catalog that the SAS Migration Utility originally created.

Create the sassdmdbadm MySQL User

Before you rerun the SAS Deployment Wizard, you must create the sassdmdbadm MySQL user.

Point your browser to `http://support.sas.com/kb/37/851.html`. Follow the instructions in that SAS Note.

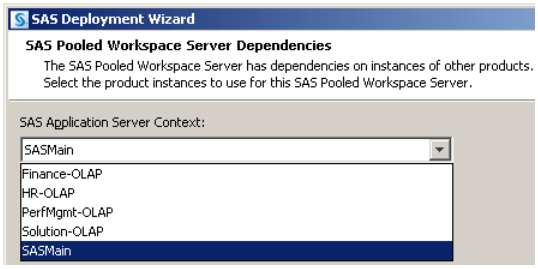
3. Rerun the SAS Deployment Wizard

Run the SAS Deployment Wizard again.

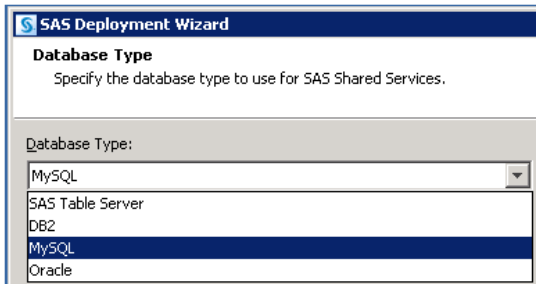
- **Deployment type.** This time, select **Configure SAS Software** as the deployment type, but do not select **Install SAS Software**.
- **Perform migration.** When you reach the Migration Information page, select the **Perform migration** check box.

  In the **SAS Migration Utility Package Directory** field, type or navigate to the shared directory in which the SAS Migration Utility stored its output.
- **Server context.** The SAS Deployment Wizard presents several pages in which you must set the server context for a server. During migration, the correct server context might not be selected by default. There is typically a list of server contexts, consisting of all the migrated OLAP server contexts, and the correct new server context. Choose the correct server context for your site.

  In the example below, **SASMain** is the correct server context to use for the SAS Pooled Workspace Server. The other server contexts are migrated OLAP server contexts.



- **Database type.** On the SAS Deployment Wizard page where you are asked to specify the database type to use for SAS Shared Services, always select **MySQL**. The other database types listed, including SAS Table Server, are not supported for migration.



4. Perform the Instructions.html Tasks

Follow the steps in the Instructions.html file.

5. Perform the Post-Migration Tasks

Perform the post-migration tasks as described in Chapter 5, "Post-Migration Tasks," on page 25.

Installing the Client Applications

The *SAS Solutions Services: System Administration Guide* has information about installing the client applications.

Note: Both *X*.4 and 5.1 versions of SAS Financial Management Studio and SAS Solutions Services Dimension Editor can exist on the same machine. The same is true of SAS Management Console and SAS Data Integration Studio. It is not true for the SAS Solutions Services Add-In for Microsoft Office or the SAS Financial Management Add-In for Microsoft Excel, however. (Installing the 5.1 add-ins deletes the *X*.4 versions.)

Chapter 4

Multi-Tier Installation and Configuration

Overview

For multi-tier installations, read the instructions in this chapter before installing the SAS Performance Management Solutions. Then follow the installation steps in the *Installation Instructions for Release 5.1 of the SAS Performance Management Solutions*.

Note: The installation guide refers to the application server directory as **`SASApp`**. In a migrated system, this directory is typically named **`SASMain`**.

For troubleshooting help with SAS Deployment Wizard, see "Configuration Errors" on page 48.

Separate Metadata Tier

If the data tier and metadata tier are on the same machine, skip to "Data Tier Installation on the Target Machine" on page 20.

Otherwise, run the Software Deployment Wizard on the metadata tier first. Select both **Install SAS Software** and **Configure SAS Software** as the deployment type.

When you reach the Migration Information page, select the **Perform migration** check box.

After you complete the installation and configuration of the metadata tier, go on to the data-tier installation and configuration.

Data Tier Installation on the Target Machine

For installation and migration on the data tier (the machine on which you installed the SAS Solutions Services Data Tier software), follow a two-pass installation and configuration.

1. Run the SAS Deployment Wizard

Run the SAS Deployment Wizard, keeping these points in mind:

- **Deployment type.** When you are asked to select a deployment type, deselect the **Configure SAS Software** check box, so that the software is installed but not configured. You will configure the software in a second pass through the SAS Deployment Wizard.
- **User names.** When you are asked for an account user name and password, check the domain name prefix carefully to ensure that it is correct for your site. It might still have the domain name prefix from the SAS 9.1.3 installation. Remember to use external accounts, not the new 9.2 internal accounts.

  Note: MySQL and WebLogic account names are created in MySQL Server and Oracle WebLogic. They are not operating system accounts. Do not add a host name prefix to these account names.

2. Update the Installed Files and Migration Package

Overview

After the installation pass for the data tier, make the following updates to the installation and migration files before performing the configuration pass.

Update the Migration Macros

Perform the update that is documented in SAS Note 37633.

1. Point your browser to **`http://support.sas.com/kb/37/633.html`**.
2. Download the .sas files from the SAS Note.
3. Copy the files to the following locations:
   - Copy the migr8dds.sas file to **`!sasroot\soltnsdata\sasmacro`**
   - Copy the migr8stg.sas file to **`!sasroot\soltnsdata\sasmacro`**
   - Copy the migr8hcm.sas file to **`!sasroot\hrds\sasmacro`** (for SAS Human Capital Management only)

(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package

If your site installed SAS Human Capital Management and you are migrating from 32-bit Microsoft Windows to 64-bit Microsoft Windows, you need to replace the FORMATS catalog in the migration package after the installation pass, and before the configuration pass. You should have exported the FORMATS catalog already. (See "(SAS Human

Capital Management Data Tier) Export the FORMATS Catalog" on page 13.) If not, do so now.

Then perform the following steps on the 5.1 data-tier server:

1. Start SAS.
2. Assign a libref to a temporary location where the FORMATS catalog will be extracted.
3. Extract the FORMATS catalog by running the following code:

   ```
   Proc cimport catalog=libref.formats infile='path\formats44.cpo';
   Run;
   ```

   - *libref* is the temporary location in which the FORMATS catalog will be created.
   - *path* is the location of the formats44.cpo file that you copied from the 4.4 server.

   Here is an example:

   ```
   Libname v5fmts 'c:\';
   Proc cimport catalog=v5fmts.formats infile='c:\formats44.cpo';
   Run;
   ```

4. Copy the FORMATS catalog that you created (**c:\formats.sas7bcat**) to the following path in the SAS Migration Utility package on the 4.4 data-tier: ***path_to_SMU_package*\4.4_data_server_name\hcmdatatier\FORMATS**

   This copy will overwrite the FORMATS catalog that the SAS Migration Utility originally created.

Create the sassdmdbadm MySQL User

Before you rerun the SAS Deployment Wizard, you must create the sassdmdbadm MySQL user.

Point your browser to **http://support.sas.com/kb/37/851.html**. Follow the instructions in that SAS Note.

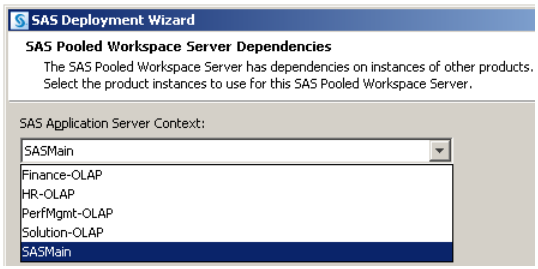
3. Rerun the SAS Deployment Wizard to Configure the Data Tier

Run the SAS Deployment Wizard again.

- **Deployment type.** This time, select **Configure SAS Software** as the deployment type, but do not select **Install SAS Software**.
- **Perform migration.** When you reach the Migration Information page, select the **Perform migration** check box.

  In the **SAS Migration Utility Package Directory** field, type or navigate to the shared directory in which the SAS Migration Utility stored its output.
- **Server context.** The SAS Deployment Wizard presents several pages in which you must set the server context for a server. During migration, the correct server context might not be selected by default. There is typically a list of server contexts, consisting of all the migrated OLAP server contexts, and the correct new server context. Choose the correct server context for your site.

  In the example below, **SASMain** is the correct server context to use for the SAS Pooled Workspace Server. The other server contexts are migrated OLAP server contexts.



4. Perform the Instructions.html Tasks

Follow the steps in the Instructions.html file.

Additional Tiers

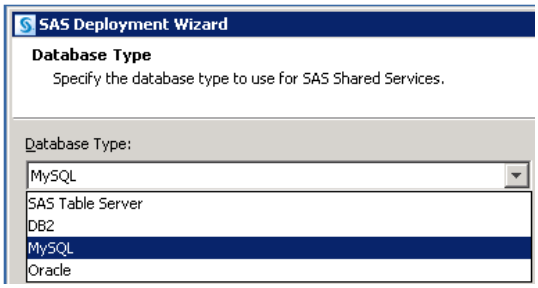
Overview

On every other tier (excluding client machines), follow these steps.

1. Run the SAS Deployment Wizard

Run the SAS Deployment Wizard.

- Select both **Install SAS Software** and **Configure SAS Software**.
- When you reach the Migration Information page, select the **Perform migration** check box.
- **(Middle Tier)** On the SAS Deployment Wizard page where you are asked to specify the database type to use for SAS Shared Services, always select **MySQL**. The other database types listed, including SAS Table Server, are not supported for migration.



2. Perform the Instructions.html Tasks

Follow the steps in the Instructions.html file.

Post-Migration

After you install and configure all the machines (other than client machines), perform the steps in Chapter 5, “Post-Migration Tasks,” on page 25.

Installing the Client Applications

The *SAS Solutions Services: System Administration Guide* has information about installing the client applications.

Note: Both *X*.4 and 5.1 versions of SAS Financial Management Studio and SAS Solutions Services Dimension Editor can exist on the same machine. The same is true of SAS Management Console and SAS Data Integration Studio. It is not true for the SAS Solutions Services Add-In for Microsoft Office or the SAS Financial Management Add-In for Microsoft Excel, however. (Installing the 5.1 add-ins deletes the *X*.4 versions.)

Chapter 5

Post-Migration Tasks

Overview

This chapter contains tasks that must be performed after the installation and migration steps are complete. Some tasks apply only to a particular solution, or only for migrations from 32–bit Windows to 64–bit Windows environments.

In order to complete the tasks in this chapter:

- You must have completed the installation, configuration, and migration steps that are described in the previous two chapters.
- You must have access to SAS Management Console and SAS Data Integration Studio in the SAS 9.2 installation.

For information about the repositories, folders, and libraries in a migrated system, see "Understanding the Migrated System" on page 51.

Migrate SAS Data Sets from 32-Bit to 64-Bit Microsoft Windows

When migrating from 32-bit to 64-bit Microsoft Windows, use PROC MIGRATE to convert all data sets in SAS libraries (other than DDS and StageDDS) from 32-bit format to 64-bit format. The DDS and StageDDS SAS libraries were converted automatically during configuration. However, you must manually convert the ConformedDataMart SAS library and other SAS libraries after configuration is complete.

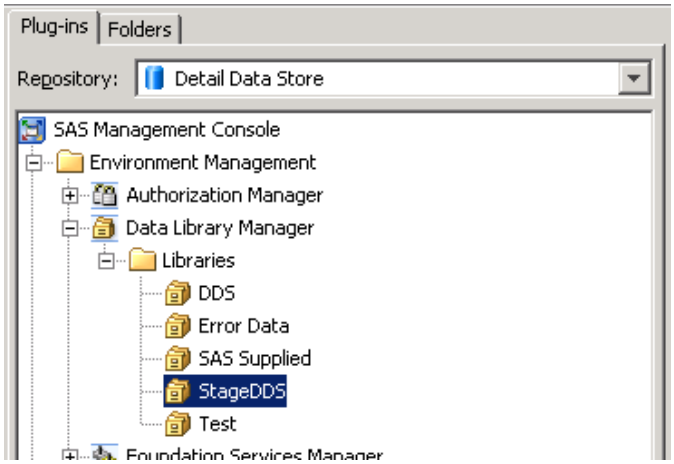
For more information, see the SAS Note at **http://support.sas.com/kb/37/695.html**

Rename the Old StageDDS SAS library

An *X*.4 installation typically has a SAS library called StageDDS in the Detail Data Store repository. During migration, this library is moved to the Detail Data Store repository on the target 5.1 system, and a new StageDDS library is created in the Foundation repository. Because this duplicate library causes problems for some ETL processes, you must rename the StageDDS library in the Detail Data Store repository.

Follow these steps:

1. Open the SAS Management Console as the unrestricted user (sasadm).
2. Select the **Plug-ins** tab.
3. From the **Repository** drop-down list, select the **Detail Data Store** repository.
4. Navigate to **Environment Management** ⇨ **Data Library Management** ⇨ **Libraries** ⇨ **StageDDS**.



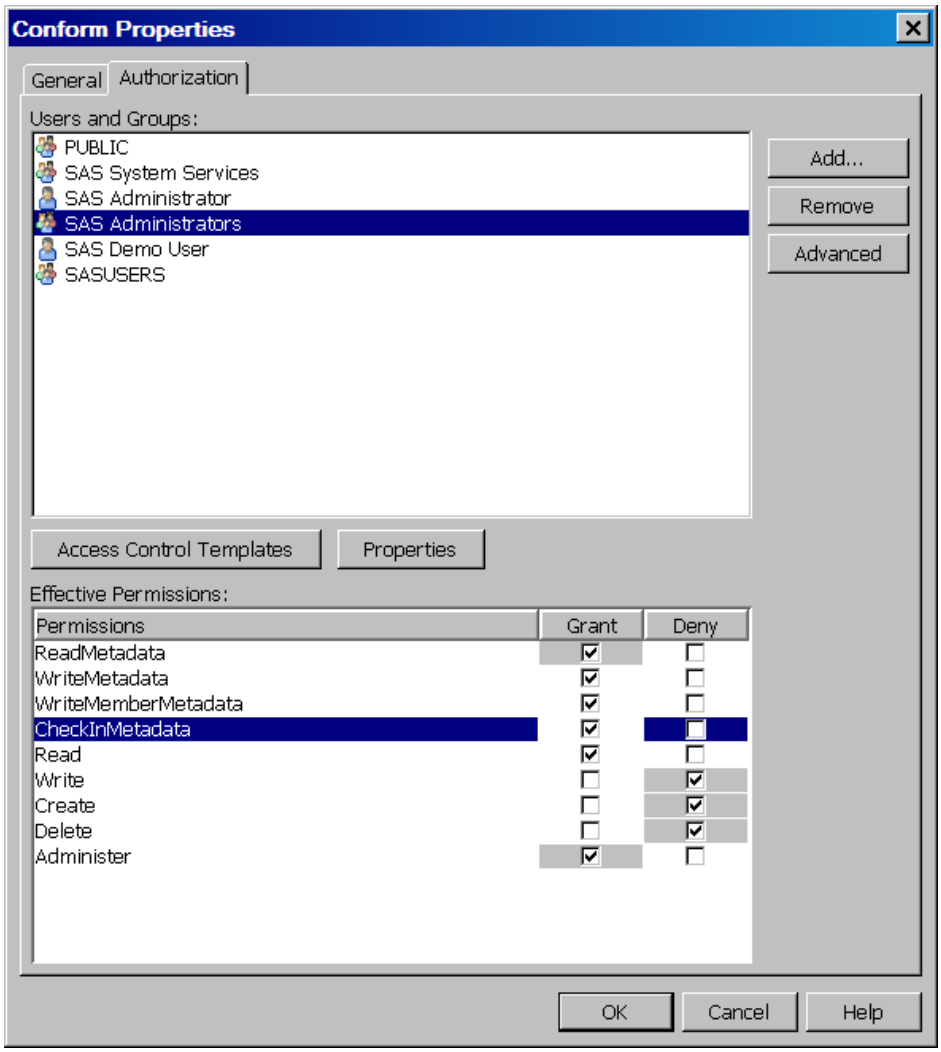
5. Right-click **StageDDS** and select **Properties**.
6. On the **General** tab of the Properties dialog box, change the **Name** from **StageDDS** to **StgDDS**.
7. On the **Options** tab, change the **Libref** from **stagedds** to **stgdds**.
8. Click **OK** to save your changes.

Update the Conform Folder Permissions

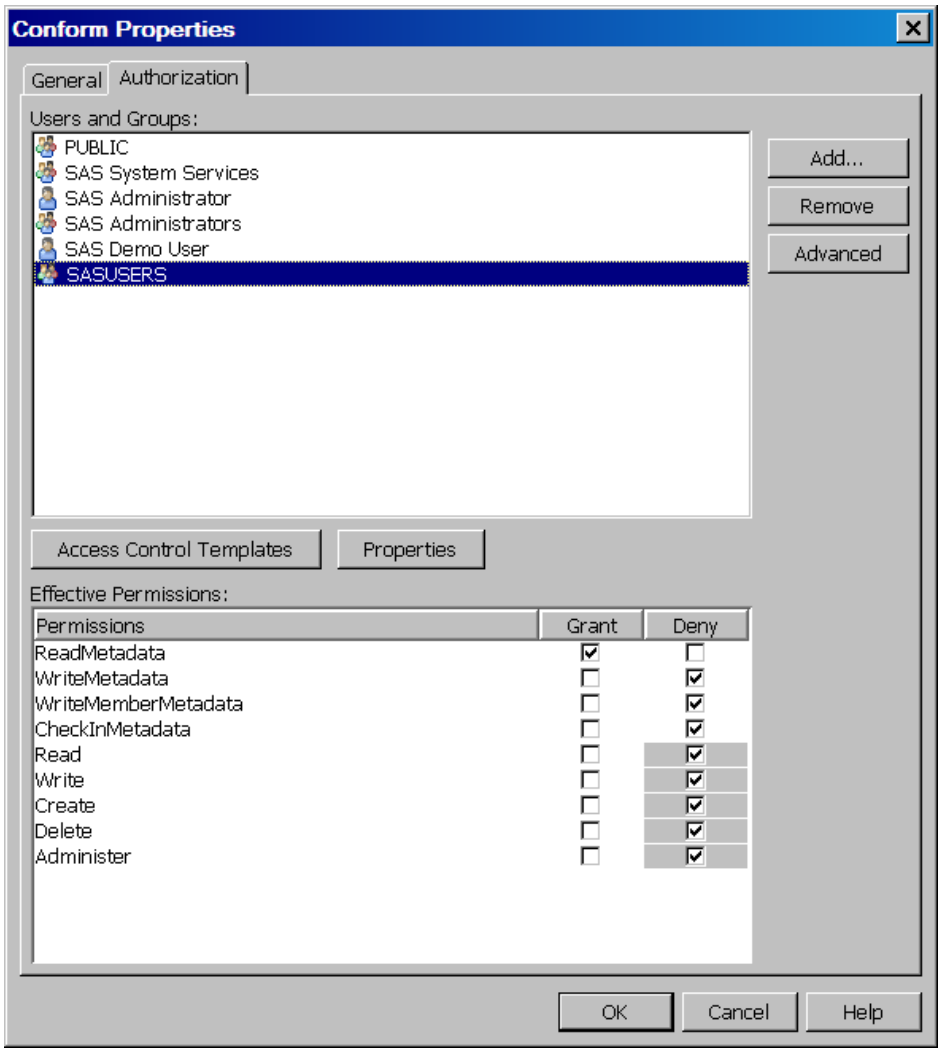
Follow these steps:

1. Open the SAS Management Console as the unrestricted user (sasadm).
2. On the **Plug-ins** tab, select the **Foundation** repository.
3. Select **Environment Management** ⇨ **User Manager**.
4. Right-click the SAS Administrators group and select **Properties**.
5. On the **Members** tab, add Solutions Role Administrator as a member.
6. Save your changes.
7. On the **Folders** tab of SAS Management Console, navigate to the **`Products/SAS Solutions Services`** folder.
8. Right-click the **`Conform`** folder and select **Properties**.
9. On the **Authorization** tab, grant SAS Administrators the following permissions:
   - ReadMetadata
   - WriteMetadata
   - WriteMemberMetadata
   - CheckinMetadata
   - Read
   - Administer

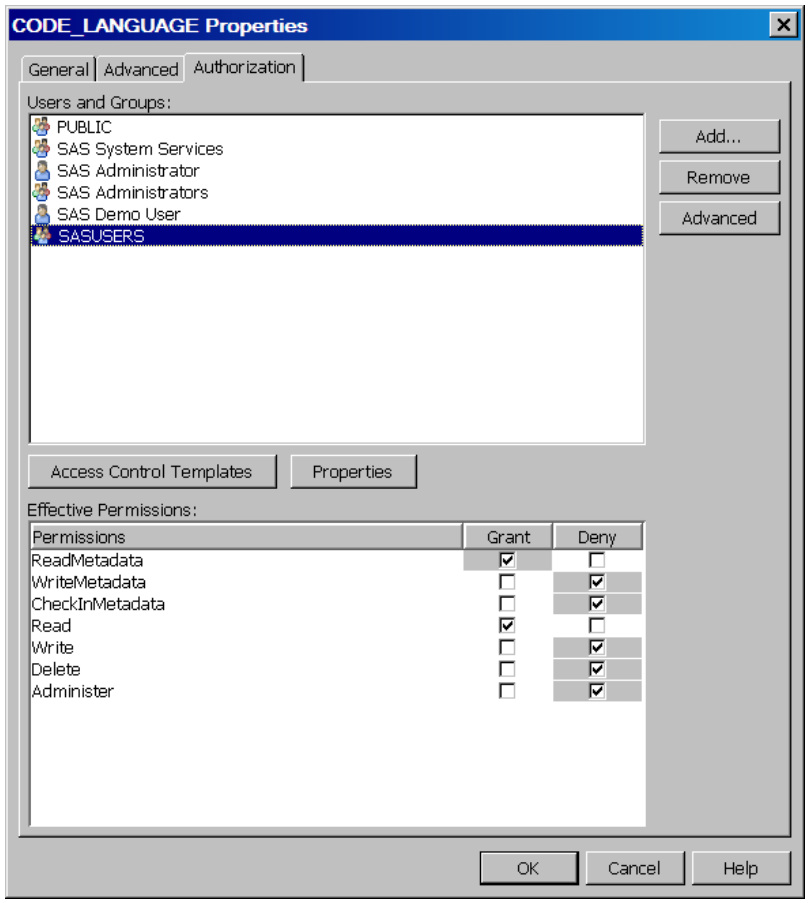
   Deny this group Write, Create, and Delete permissions.



10. Click **Add**.
11. In the Add Users and Groups dialog box, move the SASUSERS group to the **Selected Identities** list. Click **OK**.
12. Grant SASUSERS ReadMetadata permission and deny all other permissions.



13. Click **OK** to save the new properties.
14. In the right hand pane, right-click the CODE_LANGUAGE table and select **Properties**.
15. On the **Authorization** tab, grant SASUSERS both ReadMetadata and Read permission. Deny all other permissions.



16. Click **OK** to save your changes.

Update Permissions for SAS Demo User

To complete the migration for KPI or scorecard projects, follow the instructions in SAS Note 37794, available at **http://support.sas.com/kb/37/794.html**. These instructions adjust project, scorecard, template, and element permissions that in *X*.4 were assigned to "SAS Demo User," assigning them instead to "sasdemo".

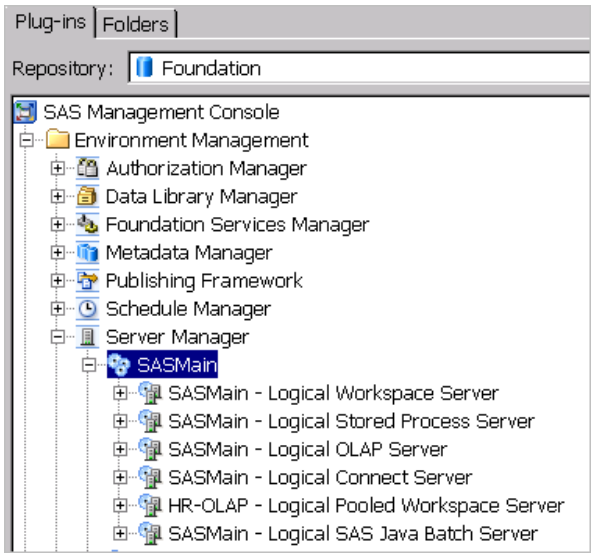
Note: In SAS 9.2, "sasdemo" is the user name; "SAS Demo User" is the display name.

Modify Server and Library Names in %SPMEXPSC Macro

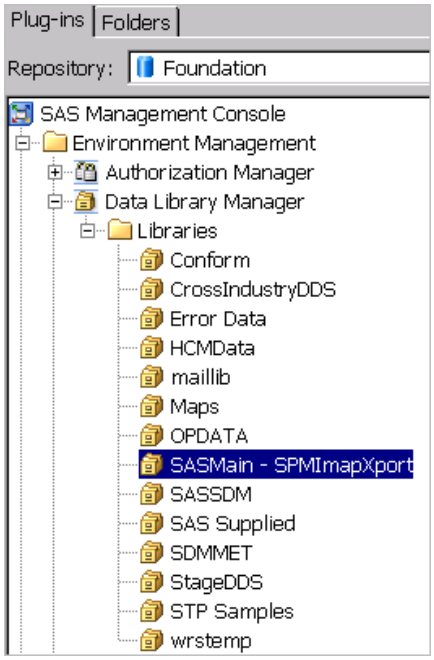
Modify the server and library names in the SAS autocall macro %SPMEXPSC,as follows:

1. Log on to SAS Management Console as the administrator (sasadm).
2. On the **Plug-ins** tab, navigate to **Environment Management** ⇨ **Server Manager**.

3. Select the server that has the Logical Workspace Server and the Logical Stored Process Server. Note the name of this server (such as **SASMain**).



4. Navigate to **Data Library Manager** and locate the library whose name ends with **- SPMImapXport**. This library usually contains the GENERICSPMEXPORT table. Note the name of this SAS library (for example, **SASMain - SPMImapXport**).



5. Open the spmexpsc.sas file for editing.

   On Windows, this file is located in the **`!sasroot\scorecard\sasmacro`** directory on the data tier.

   Note: We recommend that you first make a backup copy of the spmexpsc.sas file.

6. Find the line that contains **`infomapSASServer`**. It resembles the following code, although the default SASApp value might be replaced by something else):

```
%let infomapSASServer=SASApp;
```

Change the value of the server name to the server name you observed in SAS Metadata Console. (For the example above, you would change **SASApp** to **SASMain**.)

7. Then, find the line that contains **imapTableLibrary**. It resembles the following code (although the default **SASApp** value might be replaced by something else):

```
%let imapTableLibrary=SASApp - SPMImapXport;
```

8. In that line, substitute the name of the library that you observed in SAS Management Console. For the example above, you would modify the code as follows:

```
%let imapTableLibrary=SASMain - SPMImapXport;
```

9. Save the file.

(SAS Human Capital Management) Add Users to the HCM Analyst Role

Perform these steps if you migrated SAS Human Capital Management:

1. Open the SAS Management Console as the unrestricted user (sasadm).
2. On the **Plug-ins** tab, select the **Foundation** repository.
3. Select **Environment Management** ⇨ **User Manager**.
4. Right-click the Analyst Group and select **Properties**.
5. Select the **Members** tab and make a note of all members currently in this group.
6. Click **Cancel** to close the Properties dialog box.
7. Right-click the HCM Analyst role and select **Properties**.
8. Select the **Members** tab and add each member of the Analyst Group to the HCM Analyst role.

   Note: Add the users individually. Do not remove these users from the Analyst Group.
9. If any users directly belong to the Analyst role, add those users to the HCM Analyst role as well.
10. Click **OK** to save your changes.

Note: In SAS Human Capital Management, users should belong to one (and only one) HCM role: HCM Analyst, HCM User, or HCM Administrator. Only users (not groups) should belong to the HCM roles.

(SAS Human Capital Management) Migrate 5.1 Cubes

Overview

Perform the tasks in this section if you migrated SAS Human Capital Management. Otherwise, skip this section and go to "Additional Tasks for SAS Data Integration Studio" on page 41.

Note: In SAS Data Integration Studio, if you are presented a dialog box that asks for the application server context, select **SASMain**. To verify a successful connection, click **Test Connection**.

Specify Cube Folder Access Permissions

In the operating system, specify the access permissions for the directory that contains the physical OLAP cubes. The typical directory is **`SAS-config-dir\Lev1\AppData\SASHumanCapitalManagement5.1\Cubes`**, where *SAS-config-dir* is the SAS configuration directory.

Access permissions should be as follows:

- For every user who run will run jobs to create and update cubes, assign read/write/modify access permissions.
- For all other HCM users, assign read permission.

Grant Access to the OLAP Schema

Grant the HCM Solution Users group access to the OLAP schema, as follows:

1. Log on to SAS Management Console as the administrator (sasadm).
2. On the **Folders** tab, navigate to the **`/Shared Data/SASMain – OLAP Schema`** folder.
3. In the right hand pane, right-click **SASMain - OLAP Schema** and select **Properties**.
4. On the **Authorization** tab, grant HCM Solution Users ReadMetadata and WriteMetadata permission.
5. Save your changes.

Delete the Installed Cube Metadata from the 5.1 Folder

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. On the **Folders** tab, navigate to the folder **`/Products/SAS Human Capital Management/Data Sources/Cubes`**.
3. Right-click each of the cubes and select **Delete** from the pop-up menu. Cubes are marked with a Cube icon, like this: APPHCUBE

   Do not delete the cube jobs. Cube jobs are marked with a Cube icon containing a gear, like this:  ACTHCUBE . The jobs are automatically deleted when the cubes are deleted.

When you are finished, the **`Cubes`** folder should be empty.

Move SAS Human Capital Management Cube Metadata to Required 5.1 Location

1. In SAS Data Integration Studio, connect to the 5.1 metadata tier as the unrestricted user.

2. On the **Folders** tab, navigate to the **/Products/SAS Human Capital Management/4.4 Jobs and Cubes/Shared Data/HR-OLAP - OLAP Schema** folder.
3. Select all the cube objects in this directory.

   Note: If the _Job cube objects are in this folder, select those objects as well.
4. Right-click the selected objects and select **Move to Folder** from the pop-up menu.

   The Select a Location dialog box appears.
5. Expand the directories to navigate to the path **/Products/SAS Human Capital Management/Data Sources**.
6. Select the **Cubes** directory and click **OK**.
7. If the _Job cube objects were not in the **HR-OLAP - OLAP Schema** directory, navigate to the **/Products/SAS Human Capital Management/4.4 Jobs and Cubes/SAS Data Integration Studio Custom Tree/Ungrouped** folder.

   The **Ungrouped** folder should contain the _Job cube objects, such as ACTHCUBE_Job and EMPCUBE_Job.
8. Select the _Job cube objects in this folder and repeat steps 4 through 6.

Now, both the cube objects and the _Job objects are in the 5.1 folder **/Products/SAS Human Capital Management/Data Sources/Cubes**.

In SAS Data Integration Studio, Build Each Cube

1. In SAS Data Integration Studio, connect to the 5.1 metadata tier as a user who is a member of the HCM Solution Users metadata group.

   Note: Do not connect as the unrestricted user. The unrestricted user cannot start a workspace server session.
2. Navigate to the folder **/Products/SAS Human Capital Management/Data Sources/Cubes**.
3. Right-click a cube (not the _Job object) and select **Edit Cube Structure** from the pop-up menu.

   The Cube Designer appears, to guide you through the process of designing the cube.
4. Adjacent to the **Physical cube path** field, click **Browse**.

   Note: If you see the error message `Physical file does not exist, <Current specified cube path>`, click **OK**.

   The Browse dialog box appears.
5. Navigate to the 5.1 physical location of the cubes.

   The physical location depends on the operating system. For Microsoft Windows, this location is typically ***SAS-config-dir*\Lev1\AppData\SASHumanCapitalManagement5.1\Cubes**.
6. Select the **Cubes** folder and click **OK**.
7. If the cube metadata is maintained using a SAS Human Capital Management job (such as EMPCUBE, ACTHCUBE, HDSMCUBE), click **Next** repeatedly to move through all the steps in the Cube Designer.
8. Otherwise, where desired, edit the cube in the Cube Designer.

9. At the last step in the Cube Designer, select the option to create the physical cube and click **Finish**.
10. When the submitted code is complete, the metadata is saved, the physical cube is built, and the SAS Log window opens. Verify that there are no errors in the log and close the SAS Log window.

    If there are errors, investigate the causes and resolve the errors.
11. Repeat steps 3 through 10 for each cube.

Delete the Cube Objects Within the HR Repository

The cube objects in the HR repository were the source for the migrated 5.1 cubes in the previous set of steps. The cubes in the HR repository are no longer usable and should be deleted so that they do not cause conflicts with the 5.1 cubes. Follow these steps:

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. On the **Folders** tab, navigate to the **`/HR/Shared Data/HR-OLAP - OLAP Schema`** folder.
3. Select all the cube objects in that folder.

    Do not select any *_Job objects (if any exist). Do not select the HR-OLAP - OLAP Schema.
4. Right-click the selected cubes and select **Delete** from the pop-up menu.

The cubes are deleted. Any cube jobs are automatically deleted, as well.

Export and Import 4.4 Information Maps

Export the 4.4 information maps and then import them to the **`/BIP Tree/ReportStudio/Maps`** folder, as follows:

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. Export the information maps:
    a. On the **Folders** tab, navigate to the **`/HR/BIP Tree/ReportStudio/Maps`** folder.
    b. Select all information map objects in this folder,
    c. Right-click the selected objects and select **Export** ⇨ **SAS Package** from the pop-up menu.
    d. Click **Browse** and navigate to a desired path for the exported file. Specify a name for the exported file and click **OK**.
    e. Accept the **Export Options** defaults.
    f. On the Select Objects to Export page, make sure that all information maps are selected. Click **Next**.
    g. Verify the summary and click **Next** to export the information map objects.
3. Import the information maps that you exported:
    a. Navigate to the **`/BIP Tree/ReportStudio/Maps`** folder.

b. Right-click the **Maps** folder and select **Import** ⇨ **SAS Package**.

c. Browse to and select the package file that was created in Step 2.

d. Accept the Import Options defaults and click **Next**.

e. On the Select Objects to Import page, make sure that all information maps are selected. Click **Next**.

f. On the About Metadata Connections page, click **Next**.

g. On the SAS Application Servers page, change the HR-OLAP **Target** server to **SASMain**. Click **Next**.

h. On the OLAP Schemas page, navigate to the **`/Shared Data/SASMain - OLAP Schema`** folder and select the **SASMain - OLAP Schema** schema. Click **Next**.

i. On the Libraries page, accept the defaults and click **Next**.

j. On the Tables page, accept the defaults and click **Next**.

k. On the Cubes page, verify that the path to each target cube is the **`/Products/SAS Human Capital Management/Data Sources/Cubes`** folder. If the path is not correct, navigate to this folder and select the corresponding cube.

l. On the Summary page, verify all changes and click **Next** to import the information maps.

4. Grant permission for the **Maps** folder:

a. Right-click the **`/BIP Tree/ReportStudio/Maps`** folder and select **Properties**.

b. On the **Authorization** tab, grant ReadMetadata and Read permissions (at a minimum) to the HCM Solution Users group.

c. Save your changes.

Export and Import 4.4 SASGenerated Information Maps

If generated information maps from SAS Human Capital Management 4.4 exist, export them and then import them to the **`/BIP Tree`** folder, as follows:

Note: This procedure, while similar to the previous one, contains some differences. Follow the steps carefully.

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.

2. Export the information maps:

a. On the **Folders** tab, navigate to the **`/HR/BIP Tree/SASGeneratedMaps/HR-OLAP - OLAP Schema`** folder.

b. If the folder exists and contains information maps, then continue with these steps. Otherwise, skip this section and go to "(Optional) Delete the 4.4 Information Maps from the HR Repository" on page 37.

c. Right-click the **`/HR/BIP Tree/SASGeneratedMaps`** folder and select **Export** ⇨ **SAS Package** from the pop-up menu.

d. Click **Browse** and navigate to a desired path for the exported file. Specify a name for the exported file and click **OK**.

e. Accept the **Export Options** defaults.

f. On the Select Objects to Export page, make sure that all information maps under the HR-**`OLAP - OLAP Schema`** folder are selected. Then click **Next**.

g. Verify the summary and click **Next** to export the information map objects.

3. Import the information maps that you exported:

a. Right-click the **/BIP Tree** folder and select **Import** ⇨ **SAS Package**.

b. Browse to and select the package file that was created in Step 2.

c. On the Import Options page, select **Include access controls**. Click **Next**.

d. On the Select Objects to Import page, make sure that all information maps are selected. Then click **Next**.

e. On the About Metadata Connections page, click **Next**.

f. On the SAS Application Servers page, change the HR-OLAP **Target** server to **SASMain**. Click **Next**.

g. On the OLAP Schemas page, navigate to the **`/Shared Data/SASMain - OLAP Schema`** folder and select the **SASMain - OLAP Schema** schema. Click **Next**.

h. On the Cubes page, verify that the path to each target cube is the **`/Products/SAS Human Capital Management/Data Sources/Cubes`** folder. If the path is not correct, navigate to this folder and select the corresponding cube.

i. On the Summary page, verify all changes. Click **Next** to import the information maps.

4. Grant the HCM Solution Users group permissions for the new folder, as follows:

a. Right-click the **`/BIP Tree/SASGeneratedMaps/HR-OLAP - OLAP Schema`** folder and select **Properties**.

b. On the **Authorization** tab, grant ReadMetadata and Read permissions (at a minimum) to the HCM Solution Users group.

c. Save your changes.

(Optional) Delete the 4.4 Information Maps from the HR Repository

After following the procedures in the previous two sections, you can delete the information maps in the HR repository. In particular, delete any information maps in this repository that are based on cubes, because those information maps are no longer usable.

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.

2. Navigate to the following folders and delete the information maps contained in these folders:

- **`/HR/BIP Tree/ReportStudio/Maps`**
- **`/HR/BIP Tree/SASGeneratedMaps/HR-OLAP - OLAP Schema`**

Rebuild the Cube and Table Information Maps in the 5.1 Folder

1. In SAS Data Integration Studio, connect to the 5.1 metadata tier as a user who is a member of the HCM Solution Users metadata group.

Note: Do not connect as the unrestricted user.

2. Navigate to the folder /**Products/SAS Human Capital Management/5.1 Jobs**.
3. Double-click the hcm_300000_create_information_maps job.

   When the job opens, click the **Run** button to execute the job. This job builds the information maps for both HCM tables and cubes.

(SAS Human Capital Management) Update the TERMMAST Table

If you migrated SAS Human Capital Management, you must update the %PREBUILD macro and the HCM.TERMMAST table, as follows:

1. Copy the HCM macro file prebuild.sas from the **!sasroot\hrds\sasmacro** directory to the SAS Human Capital Management macro override location: ***SAS-config-dir*\Lev1\SASMain\SASEnvironment\HumanCapitalManagement\SASMacro**.
2. Open the prebuild.sas file (in the override location) for editing.
3. Find the line that begins:

   ```
   %let termvars=
   ```

4. Add EMPLOYEE_STATUS_CD to the list of variables after the equal sign.
5. Save the file.
6. Log on to SAS Data Integration Studio as a user who is a member of the HCM Solution Users group.
7. Navigate to **/Products/SAS Human Capital Management/5.1 Jobs**.
8. Double-click to open and run the following jobs, in order:
   a. hcm_110250_load_acthist_table
   b. hcm_120100_load_acthmast_table
   c. hcm_120350_load_termmast_table

Migrate SAS Web Report Studio Reports

Overview

In the *X*.4 release of the solutions, SAS Web Report Studio reports might be stored in more than one repository (for example, the HR repository, the Solutions repository, and the Performance Management repository). By default, the BIP Tree in each repository was mapped to the same DAV content location (**/sasdav/wrs**). When the DAV content is migrated, all the content is stored in a single DAV folder. (The folder that is selected depends on which repository's **BIP Tree** folder is mapped first during the migration.)

As a result, when users try to open a report, they might see a message such as the following: “<Report name> is not accessible. Please contact your administrator for assistance." In

addition, the SMU Analysis Report might contain a warning such as the following: "Content URL http://<DAV server>:8300/sasdav/wrs is mapped to by multiple metadata roots: BIP Tree, BIP Tree, BIP Tree, BIP Tree."

To repair the reports, you must export the *X*.4 reports and import them into your 5.1 system (replacing the migrated reports), as described in the following sections.

Note: If your *X*.4 system used a different content mapping for the **`/BIP Tree`** folder in each repository, these steps are not necessary.

Export the SAS Web Report Studio Reports

To export the reports from the X.4 system, log on to SAS Management Console 9.1 as the unrestricted user (sasadm). In the BI Manager plug-in, examine the shared reports folder and the user reports folders in each repository. For each folder that contains SAS Web Report Studio reports, follow these steps:

1. Navigate to the source directory.

   For shared reports, the source directory is the **`/BIP Tree/ReportStudio/Shared/Reports`** folder.

   For users' personal reports, the source directory is the **`/BIP Tree/ReportStudio/Users/`*`username`*`/Reports`** folder.

2. Select all the reports in the **Reports** folder, right-click, and select **Export** from the pop-up menu.

3. In the Export wizard, select a destination for the export package:

   a. Click **Browse** to browse to the directory where the package file will be exported.

      Select a directory that is accessible from the 5.1 installation.

   b. Give the file a name that identifies the repository (and user, if these are user reports), so that you can easily select the correct file to import.

   c. Click **Open**.

   d. If you are exporting shared reports, select the **Include access controls** check box if you want to retain permissions that are associated with those reports.

      Note: If the access controls are based on an access control template (ACT), make sure the ACT is defined in SAS 9.2 before importing these reports.

      If you are exporting users' personal reports, do not select the **Include access controls** check box.

   e. Click **Next**.

4. On the Select Objects to Import page, select each of the reports to be migrated.

   Do not select any dependent information maps for export.

5. Click **Next**.

6. Review the Summary and click **Export**.

7. Verify that the export process was successful and click **Finish**.

Import the Reports into the 5.1 Installation

On the 5.1 system, log on to SAS Management Console 9.2 as the unrestricted user (sasadm). For each reports package that you exported from your *X*.4 system, follow these steps:

1. On the **Folders** tab, navigate to the target folder for the reports.

   If you are importing shared reports, navigate to the **`/`*`repository-name`*`/BIP Tree/ReportStudio/Shared/Reports`** folder (for example, **`/HR/BIP Tree/ReportStudio/Shared/Reports`**).

   If you are importing reports from a user's personal folder, navigate to the **`/Users/`*`username`*`/My Folder/`*`repository-name`*`/Reports`** folder (for example, **`/Users/sasdemo/My Folder/HR/Reports`**).

   Note: If desired, you can import the exported reports to a different folder and delete the old migrated reports.

2. Right-click the **Reports** folder and select **Import SAS Package** from the pop-up menu.
3. Complete the Import SAS Package page, as follows:
   a. Click **Browse** and browse to the *X*.4 package file that corresponds to this target folder.
   b. Select the file and click **OK**.
   c. If you saved access controls (for shared reports only), select the **Include access controls** check box.

      For users' personal reports, do not select this check box.

   d. Select the **All objects** radio button (the default), so that existing reports with the same name will be overwritten.
   e. Click **Next**.
4. On the Select Objects to Import page, select the reports to store in this folder and click **Next**.
5. On the About Metadata Connections page, click **Next**.
6. On the Information maps page, click the Browse (...) button for each information map to verify or select the target information map. By default, the correct target information map (in the /**`BIP Tree/ ReportStudio/Maps`** folder) should already be selected. If the target information map is pointing to a different folder, navigate to the **`/BIP Tree/ ReportStudio/Maps`** folder, select the appropriate information map, and click **OK**.
7. Click **Next**.
8. Verify the summary and click **Next** to import the reports.
9. Verify that the import process was successful and click **Finish**.

Repair the Load Dimension Type Table Job

The cind_dds_100400_load_dimension_type_table job fails if the migrated DIMENSION_TYPE_X table exists, because it is missing an expected column. To repair

this job, you must delete the DIMENSION_TYPE_X table and clear the DIMENSION_TYPE DDS table, as follows:

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. Select **Tools** ⇨ **Code Editor**.
3. Insert the following code into the code editor:

```
%startsln(sol);
%bldLibNm(sesetl_sasLibRef=_CIDDS
   , sesetl_OMRSASLibraryObjName=
      &CrossIndustryDDStier_folder./&CrossIndustryDDSLibObj./&CrossIndustryDDSLibObj
   , sesetl_useType=BASE
   ,  sesetl_validateLib=Y
   ) ;
PROC SQL;
   DROP TABLE _CIDDS.DIMENSION_TYPE_X;
   delete from _CIDDS.DIMENSION_TYPE;
quit;
```

4. Click **Run**.
5. Check the log. If there are no errors, close the code editor.

Additional Tasks for SAS Data Integration Studio

Overview

If the site does not have customized jobs, you might find it easier to use installed 5.1 jobs whenever possible and use migrated jobs when there is no appropriate 5.1 job available. If you do not plan to use any of the migrated jobs, you can skip the tasks in this section.

Note:

- Only jobs in the **`Detail Data Store`** (DDS) folder in the *X*.4 system are migrated. If you have custom jobs that were not migrated, you need to re-create them or use installed 5.1 jobs instead.
- The migrated SAS Data Integration Studio jobs are located in the **`/Products/Cross Industry Detail Data Store/Migrated Jobs`** folder.
- The installed 5.1 jobs are in the **`/Products/Cross Industry Detail Data Store/5.1 Jobs`** folder.

If you plan to use the migrated jobs, you must first perform the following tasks:

- "Repair the Migrated Create a New Dimension Type Job" on page 42
- "Repair the Load DDS CODE_LANGUAGE Table Job" on page 43
- "Repair the Load Time Column Option Value" on page 44
- "Delete Jobs That Reference CAL_ Tables" on page 45

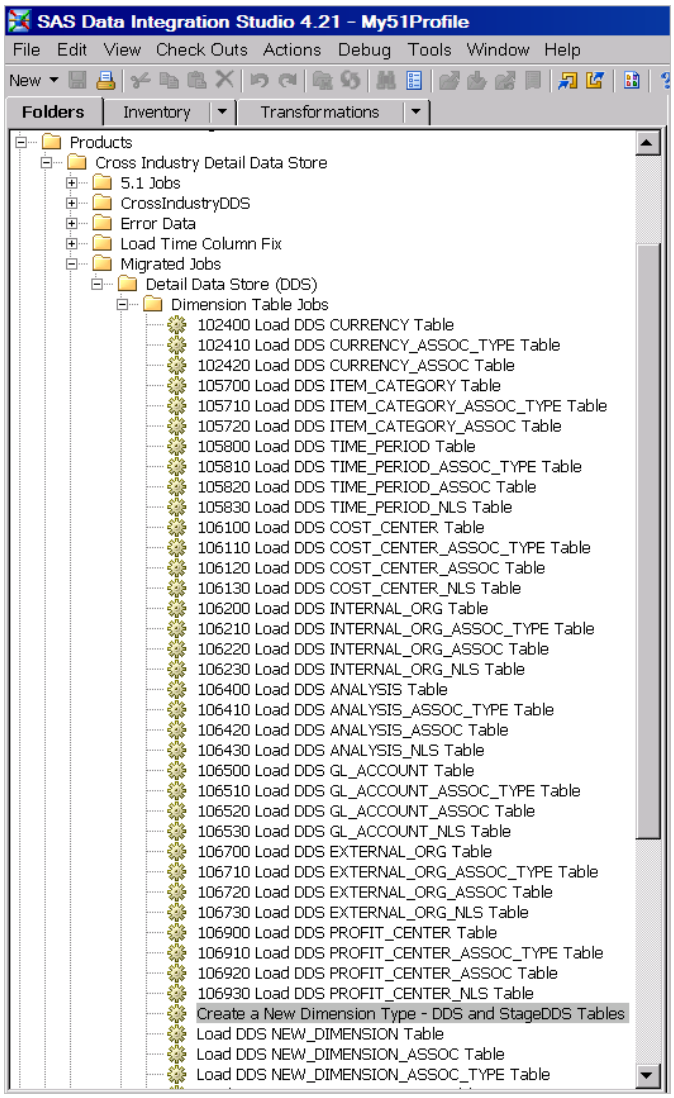
Consult the field notes for information about changes between *X*.4 and 5.1 jobs. During migration, changes were automatically applied so that the migrated jobs work (with the additional changes noted in this chapter). However, not all the 5.1 changes were

automatically performed on the migrated jobs, and you might find some additional, manual changes to be useful for those jobs.

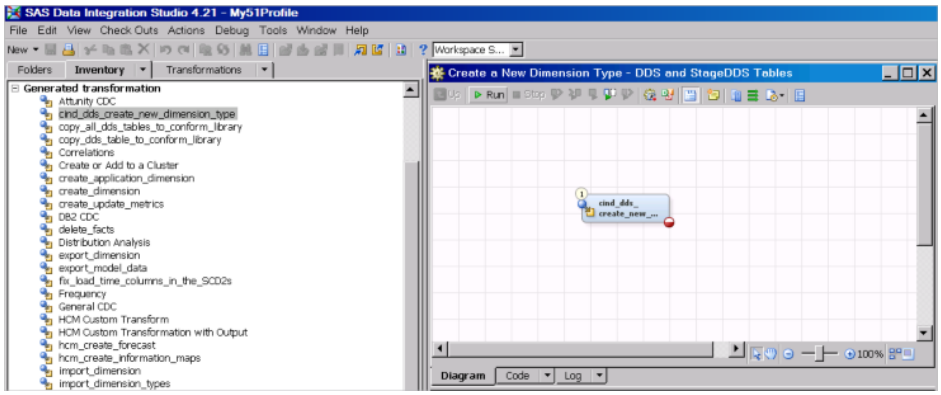
Repair the Migrated Create a New Dimension Type Job

To repair the Create a New Dimension Type - DDS and StageDDS Tables job, follow these steps:

1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. Select the **Folders** tab and navigate to **`Products/Cross Industry Detail Data Store/Migrated Jobs/Detail Data Store (DDS)/Dimension Table Jobs`**.
3. Double-click the **Create a New Dimension Type - DDS and StageDDS Tables** job to open it in the Job Editor window.



4. Click the **Inventory** tab and expand **Generated transformation**.
5. Drag and drop the cind_dds_create_new_dimension_type transformation to the Job Editor window.

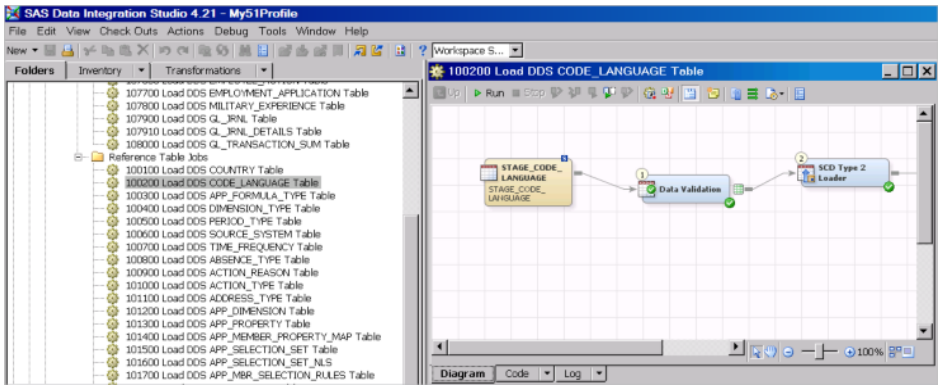


6. Select **File** ⇨ **Save** to save your changes.

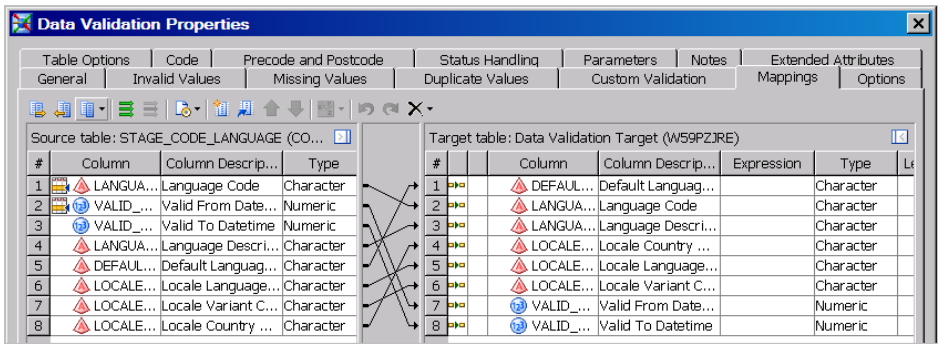
Repair the Load DDS CODE_LANGUAGE Table Job

Note: You must repair this job in order to avoid warning messages in SCD2.

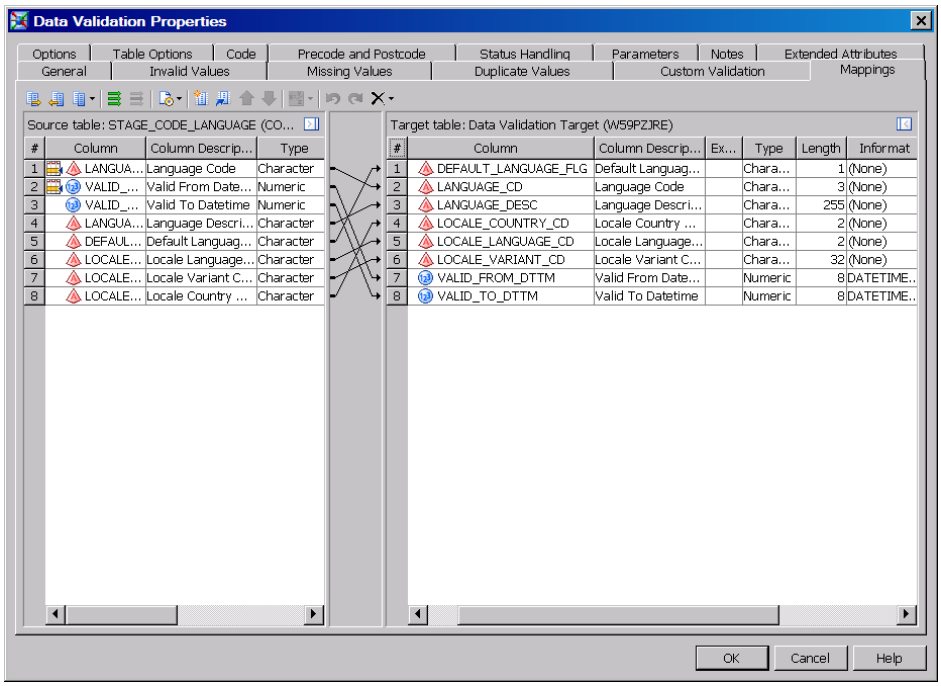
1. In SAS Data Integration Studio, connect to the Solutions 5.1 metadata tier as the unrestricted user.
2. Open Job 100200 Load DDS CODE_LANGUAGE Table in the Job Editor window.



3. In the Job Editor window, double-click the **Data Validation** transformation to open its properties.
4. Click the **Mappings** tab.



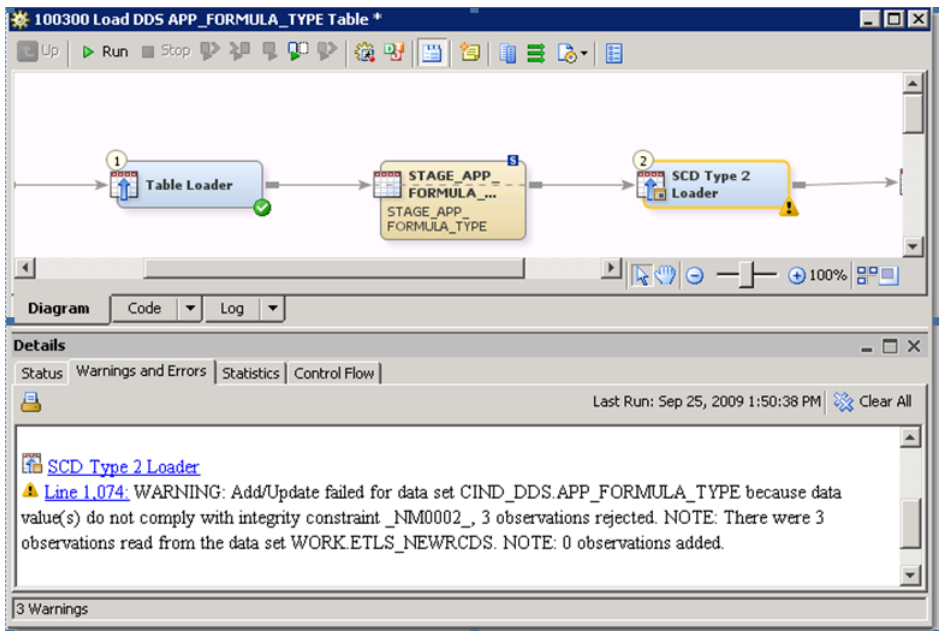
5. In the **Target table**, modify the **Length** of the LOCALE_COUNTRY_CD and LOCALE_LANGUAGE_CD columns from 3 to 2.



6. Click **OK** to save the transformation properties.
7. Select **File** ⇨ **Save** to save the changes to the job.

Repair the Load Time Column Option Value

During the migration, some jobs might lose the SCD2 Load Time Column option value. If that happens, a warning similar to the one shown below is produced each time the DDS table is updated:



This issue is often seen in the following jobs: 100100, 100300 through 100600, 102700, 103800, 103900, 104500, and 105300.

To repair this problem, see SAS Note 37713 at **http://support.sas.com/kb/37/713.html**. This SAS Note provides SAS Data Integration Studio jobs to identify and fix this issue.

Delete Jobs That Reference CAL_ Tables

Delete migrated Reference Table jobs 102000, 105900, and 107100. These jobs are deprecated in 5.1, and the CAL_ tables were removed from the 5.1 data model.

Validate the Installation

After performing the post-migration tasks:

1. Perform the post-configuration tasks that are described in "Post-Configuration Steps" in the *SAS Solutions Services: System Administration Guide*.

   CAUTION:
   Do not install the sample data!

2. Perform the validation tasks that are described in the Instructions.html file on the middle tier.
3. Check for content that is known to be present in the source SAS 9.1.3 system.

You can also run the authorization differences reports, which are described in the "Performing Post-migration Tasks" chapter of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*. These reports identify differences in access to libraries, tables, folders, OLAP schemas, and cubes between the SAS 9.1.3 and SAS 9.2 installations.

Appendix 1

Troubleshooting

Errors Running SAS Migration Utility

If you encounter errors running SAS Migration Utility, consult the following table.

Table A1.1 *Possible SAS Migration Utility Errors and Resolutions*

Error	Description and Possible Cause	Resolution
Exception because of missing MySQL password	The following message appears in the console window where SAS Migration Utility is running: `The application script threw an exception: java.lang.Exception: Missing DBMS_USER_PASSWORD property in SASCONFIG\mysqldbs.properties` SAS Migration Utility is not able to process the DBMS_USER_PASSWORD_E property in order to get the encoded MySQL password. It can process only the DBMS_USER_PASSWORD property containing the clear-text (unencoded) password, and this does not exist in the mysqldbs.properties file.	In the console window where SMU is running, choose **2** to quit if you have not done so already. On the data tier of the SAS 9.1.3 system, edit the **SAS-config-dir**\mysqldbs.properties file and add a line like the following: `DBMS_USER_PASSWORD=`*`password`* Replace password with the clear-text MySQL password. Save the file and rerun SAS Migration Utility on this machine. For security, after SAS Migration utility completes successfully, delete the DBMS_USER_PASSWORD line from mysqldbs.properties. Leave the DBMS_USER_PASSWORD_E line.

Configuration Errors

If you encounter configuration errors, consult the following table.

Table A1.2 *Possible Configuration Errors and Resolutions*

Error	Description and Possible Cause	Resolution
Error during SAS Solutions data-tier configuration	In rare cases, an error during SAS Solutions data-tier configuration might be caused by duplicate SAS library entries. On the original *X*.4 SAS Solutions Services system, if a SAS library named StageDDS exists in both the Foundation and Detail Data Store metadata repositories, the migration will fail during Solutions Services data-tier configuration.	Delete or rename the duplicate SASLibrary in the Foundation repository on the *X*.4 Solutions system, rerun the SAS Migration Utility. Then rerun the configuration and migration.
Error during SAS Human Capital Management data-tier configuration	You see an error message during configuration of the data tier of SAS Human Capital Management, and the configuration log file has a line similar to the following: `C:\SAS\Config\Lev1\Applications\ SASHumanCapitalManagement5.1\ SASCode\register_hcm.sas failed. C:\Program Files\SAS\ SASHumanCapitalManagementDataTier\ 5.1\Config\soltnsutility.xml: 541:` (The SAS Human Capital Management data-tier configuration log file is located at ***SAS-config-dir*\Lev1\Logs\Configure\hcmdatatier_*.log**.)	The SAS FORMATS catalog was not correctly migrated. The solution is to cancel the configuration, delete the configuration directory, perform any other needed configuration cleanup, and then again perform the steps in "(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package" on page 20 (multi-tier installations) or "(SAS Human Capital Management) Replace the FORMATS Catalog in the Migration Package" on page 16 (single-tier installations).
Error during Start Spawners stage of middle-tier configuration	During the Start Spawners stage, step 2, SAS Solutions Services Mid-Tier, the soltnsmid_startServer step fails with this error: `Caused by: com.mysql.jdbc.exceptions. MySQLIntegrityConstraint ViolationException: Duplicate entry 'sasapp/alert' for key 1` This error can occur if the Shared Services database name was changed from the default name of SHAREDSERVICES.	Edit the file **!sasroot\SASSolutionsServicesMidTier\5.1\Config\deploy\MigrateSASSDM.groovy** Find this line in the file: `key_cnt_query = "SELECT KEY_CNT FROM sharedservices.SAS_KEYGEN WHERE IDENTIFIER_CD ='sasapp/alert'";` Change the word **sharedservices** to the actual name of the Shared Services database. Save the file and click the **Retry** button in the SAS Deployment Wizard to retry this deployment step.

Problems Running SAS Data Integration Studio Jobs

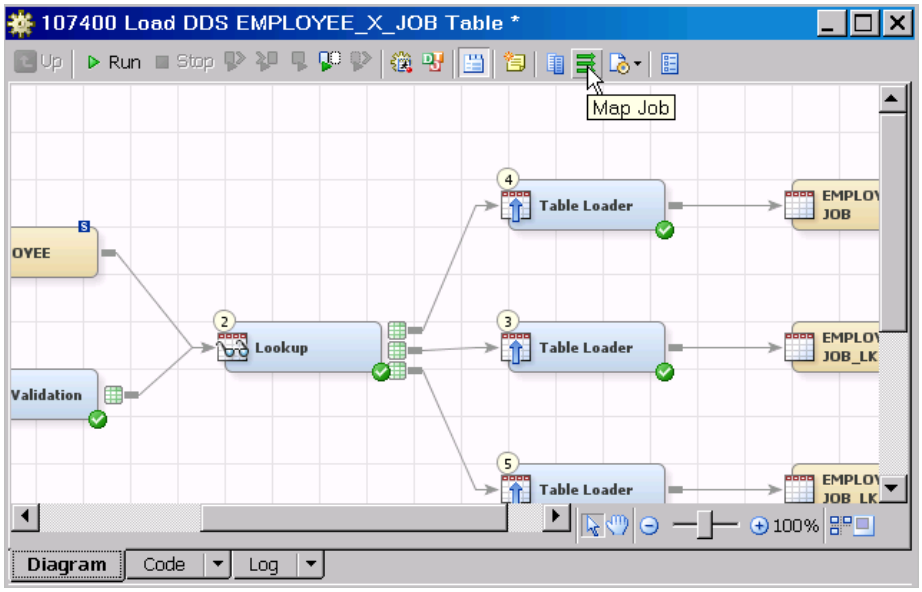
Overview

If you experience difficulties running a migrated job, check the following common issues first.

Broken Mappings

After the migration process, there can be some broken mappings because of the difference between data models or for other reasons. To fix these problems:

1. Open the job in the Job Editor window.
2. Click the Map Job button to enable automatic column mapping.

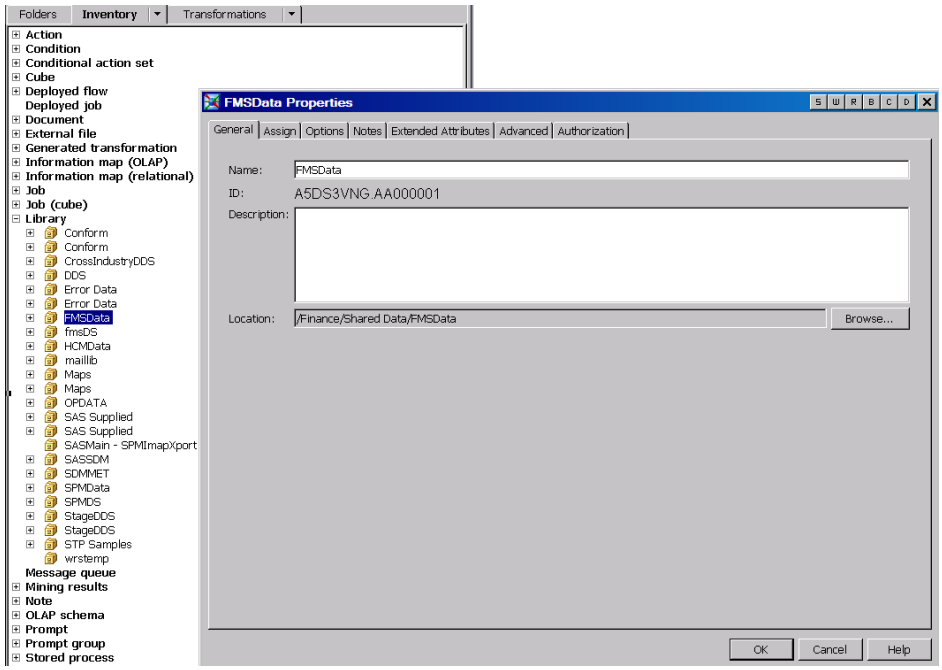


Clicking the Map Job button enables automatic mapping for the transformations in the current job. For more information, see “Maintaining Column Mappings” in the online Help for SAS Data Integration Studio.

3. If the transformations are now correct, select **File** ⇨ **Save**.

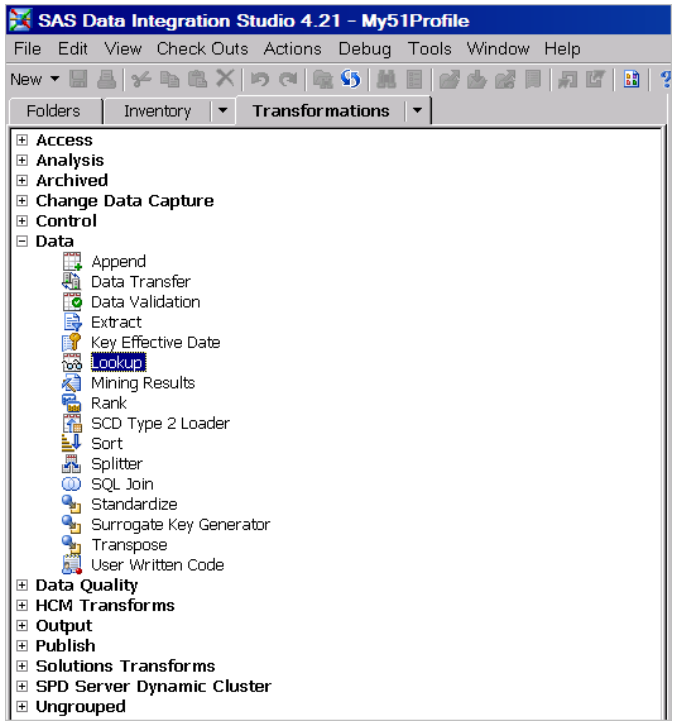
Data Access Problems

If there are problems with data access, make sure that table libraries, especially those for custom jobs, are updated to include new data locations, DBMS settings, and similar information.



Problems with Lookup Transformations

If there are issues with a lookup transformation in a migrated job (for example, a table that does not connect to the lookup), replace the transformation with the **Lookup** transformation found on the **Transformations** tab, in the **Data** directory.



Appendix 2

The Migrated System

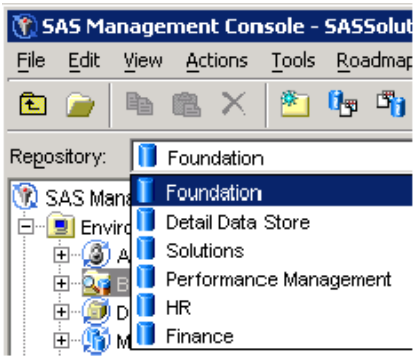
Understanding the Migrated System

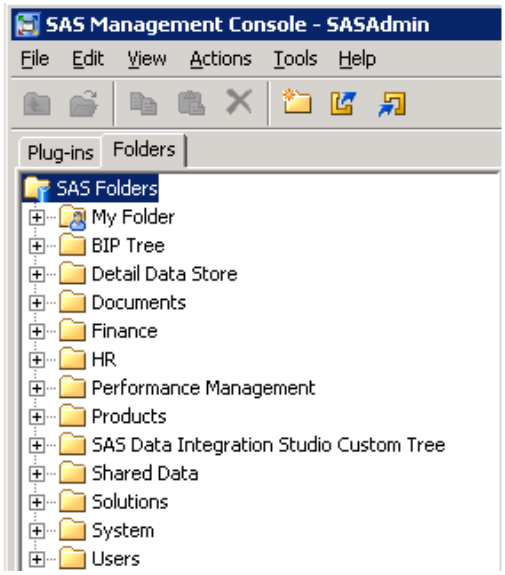
This appendix describes changes that you might notice after migration, in objects such as metadata repositories, folders, libraries, and data sets.

Metadata Repositories

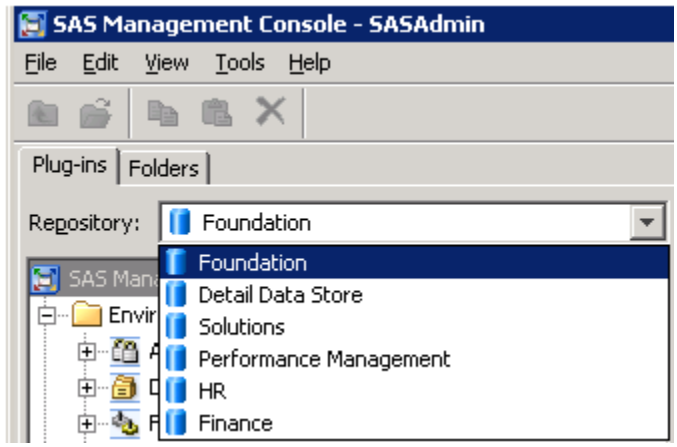
All of the metadata repositories that existed in the SAS 9.1.3 metadata server have been migrated to the SAS 9.2 metadata server. The new SAS Management Console contains a new **Folders** tab. Each repository other than the Foundation repository is represented as a separate top-level folder on the **Folders** tab, along with the new folders from the SAS 9.2 installation.

The following displays present SAS Management Console in SAS 9.1.3, showing the typical metadata repositories, and SAS Management Console in SAS 9.2, showing those same repositories on the **Folders** tab.





Notice that in SAS 9.2, the SAS Management Console also has a **Plug-ins** tab. This tab contains the **Repository** drop-down list, which lists the repositories that were migrated from SAS 9.1.3:



The migrated repositories are represented in SAS 9.2 as folders, but, as shown above, they also exist as separate repositories.

Items in Document Manager

All the metadata repositories that existed in the SAS 9.1.3 metadata server have been migrated to the SAS 9.2 metadata server. In SAS Management Console, migrated repositories are represented in two ways:

- On the **Plug-ins** tab, you can select a repository from the **Repository** drop-down list.

  Note: These repositories are no longer dependent on the Foundation repository.

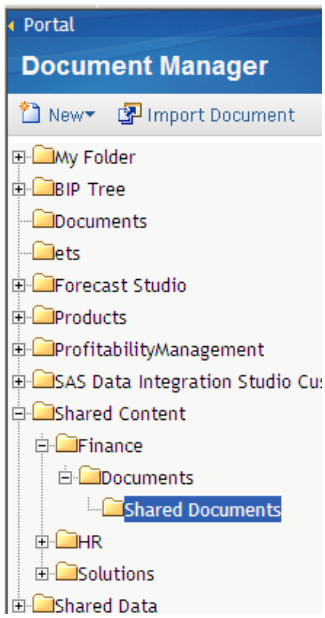
- On the **Folders** tab, a top-level folder has been created corresponding to each repository other than the Foundation repository.

  - Content from the Foundation repository is located in top-level folders such as the **`BIP Tree`** folder and **`Shared Data`** folder.

- Content from other migrated repositories is located in ***/repository-name/folder-name***, such as **/HR/Shared Data**.

Items in the Document Manager have been moved to new folder locations under the **Shared Content** folder in the folder list.

For example, all documents in the **Finance** repository on the SAS 9.1.3 system have been moved into the **Shared Content/Finance/Documents/Shared Documents** folder as shown:



The documents for the HR, Solutions, and Performance Management repositories are treated in a similar manner.

Note: All WebDAV content that was previous associated with Xythos WebFile Server or Apache is now stored in the SAS Content Server.

Migration of Metadata Users, Roles, and Groups

Metadata role and group memberships are migrated from the *X*.4 system to the 5.1 system, with these changes:

- Users who have the following SAS Solutions Services roles are added instead to a group that belongs to that role. The following table lists the changes:

***X*.4 Role**	**5.1 Group**
Information Consumer	Information Consumer Group
Analyst	Analyst Group
System Administrator	Solutions Administrator Group

- SAS Human Capital Management: Users who belong to the Analyst Group or the Analyst role are also given the (new) HCM Analyst role.
- SAS Strategy Management: Users who have a SAS Strategy Management role are added instead to groups that belong to that role. For example, users with the Dimension Modeler role are added instead to the Dimension Modeler Group.
- There is a new metadata user, SAS Solutions Administrator (slnadm), replacing the Solutions Role Administrator. In new installations, the SAS Solutions Administrator is an internal identity. In a migrated installation, this user must have an external account in the operating system.
- There is a new user, Solutions Host User, for JDBC connections. In *X*.4 systems, this function was performed by the SAS Trusted User. In both new and migrated installations, the Solutions Host User must have an external account in the operating system.

For more information, see "Group and Role Assignments" in the *SAS Solutions Services: System Administration Guide*.

Migration of the SPAuth Domain

In a migrated system, the stored process server is configured to have an authentication domain of SPAuth. Any user who invokes a stored process must be authenticated on this server, either with the user's own login or via a group login.

The Solutions Users group has a login to the SPAuth domain on a migrated system. If you are installing other applications in addition to the solutions, and you do not want the users of those applications to be members of the Solutions Users group, you might create a similar group and stored process user. Follow these instructions:

1. On the stored process physical server, create a user (for example, sasspusr2).

   This user should have no access to data.
2. In a Windows installation, grant this user the Log on as a batch job right.
3. Log on to SAS Management Console as the administrative user (sasadm).
4. In the User Manager, create a group (for example, Stored Process Users).
5. On the Logins tab for this group, add a login for sasspusr2.

   Enter the user name and password that you created in Step 1. For the authentication domain, select **SPAuth**.
6. Add your users to the Stored Process Users group.

Alternatively, you can give each user a login on the stored process physical server. Follow the same criteria as for the group login. Then, add the login to the user's properties in SAS Management Console.

Migration of SAS Data Sets

SAS 9.1.3 data sets in SAS libraries whose directories are beneath the SAS configuration directory have been automatically migrated to the SAS 9.2 system. The migrated SAS

library has been placed in the same location relative to the SAS configuration directory root as it was on the SAS 9.1.3 system.

The following example assumes that on the SAS 9.1.3 system *SAS-config-dir* was set to **`C:\SAS\Config`**, and on the SAS 9.2 system *SAS-config-dir* is set to **`D:\SAS\Config92`**.

Table A2.1 *Comparison of X.4 and 5.1 Library Locations*

SAS 9.1.3 Library Location	SAS 9.2 Migrated Library Location
`C:\SAS\Config\Lev1\Data\ConformedDataMart`	`D:\SAS\Config92\Lev1\Data\ConformedDataMart`
`C:\SAS\Config\Lev1\Data\FMSData`	`D:\SAS\Config92\Lev1\Data\FMSData`
`C:\SAS\Config\Lev1\Data\SPMData`	`D:\SAS\Config92\Lev1\Data\SPMData`

SAS libraries that were in locations outside the configuration directory were not automatically migrated. For more information, see "Migrating Content Stored Outside of the SAS Configuration Directory" in the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.

Special Treatment for DDS, StageDDS, and ConformedDataMart Data Directories

The DDS, StageDDS, and ConformedDataMart data directories are automatically migrated in the same manner as other data directories. Then, they are copied to a new location conforming to SAS Performance Management Solutions 5.1 conventions. The DDS and StageDDS data sets are also upgraded to the SAS Performance Management Solutions 5.1 data model.

The table below shows the migrated locations of the **`DDS`**, **`StageDDS`**, and **`ConformedDataMart`** data directories relative to the SAS configuration directory (*SAS-config-dir*), and the corresponding new SAS Performance Management Solutions 5.1 location:

Note: In SAS Performance Management 5.1, the Detail Data Store (DDS) library is now named CrossIndustryDDS in the SAS Management Console.

Table A2.2 *Directory Locations Relative to SAS-config-dir Directory*

Original Migrated Data Directory Location	Final Data Directory Location
`\Lev1\Data\DDSData`	`\Lev1\SASMain\Data\SolutionsServices\DDSData`
`\Lev1\Data\stagedds`	`\Lev1\SASMain\Data\SolutionsServices\stagedds`

Original Migrated Data Directory Location	Final Data Directory Location
`\Lev1\Data\ConformedDataMart`	`\Lev1\SASMain\Data \SolutionsServices \ConformedDataMart`

Note: After migration is complete, you can safely delete the directories in the left column of this table.

Libraries in Formerly Dependent Repositories

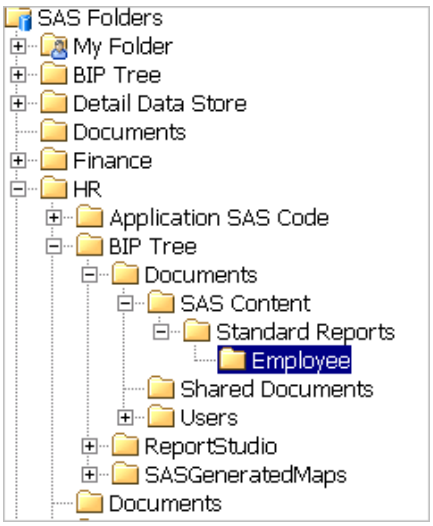
After a migration, the formerly dependent repositories in the SAS 9.2 system might contain the following SAS libraries from the SAS 9.1.3 system:

- fmsDS (in the Finance repository)
- SPMDS (in the Performance Management repository)
- Maps (in the HR repository)

These SAS libraries, if they exist, refer back to directories or MySQL databases on the SAS 9.1.3 system. They can be safely ignored or deleted.

(SAS Human Capital Management) Obsolete Stored Processes

The **HR** folder or one of its subfolders might contain standard stored process reports with references to code in the SAS 9.1.3 system. Those stored process definitions can be safely deleted. The new stored processes are in the **`Products/SAS Human Capital Management/5.1 Reports`** folder.



Appendix 3

SAS Strategy Management and Partial Promotion

The SAS Migration Utility is the preferred way to perform migrations from SAS Strategic Performance Management 2.4 to SAS Strategy Management 5.1.

For situations in which the SAS Migration Utility cannot be used, installers can use the partial promotion tools that are shipped with SAS Strategy Management. Here are some cases in which you might use an alternative to the SAS Migration Utility:

- The topology between the two systems is different.
- A site has a SAS 9.2 EBI production environment in which users are actively editing content. Sometime later, the site decides to install SAS Strategy Management 5.1 in the EBI environment and to migrate their SAS Strategic Performance Management 2.4 content to SAS Strategy Management 5.1.
- The site has the systems in parallel. In this case, you install SAS Strategy Management 5.1, using the SAS Migration Utility to migrate content from a production system of SAS Strategic Performance Management 2.4. The 2.4 system is still running on another machine (or set of machines).

  When you are ready to make the 5.1 server the production server, you want any content changes in the 2.4 production server to be moved to the 5.1 server. The partial promotion tools can assist with moving this content.

SAS Strategy Management has two partial promotion tools:

- **Export.** For more information, see the *SAS Strategic Performance Management 2.4 User's Guide* and the *SAS Strategy Management 5.1 User's Guide*.
- **Batch Maintenance Facility.** For more information, see the *SAS Strategic Performance Management 2.4 User's Guide* and the *SAS Strategy Management 5.1 Batch Maintenance Facility User's Guide*.

The *SAS Strategic Performance Management 2.4 User's Guide* is available at **http://support.sas.com/documentation/onlinedoc/spm/**.

The *SAS Strategy Management 5.1 User's Guide* and *SAS Strategy Management 5.1 Batch Maintenance Facility User's Guide* are (or will be) available at **http://support.sas.com/documentation/onlinedoc/stm/index.html**.

Note: To successfully import SQL files from SAS Strategic Performance Management 2.4 into SAS Strategy Management 5.1, you need a conversion script that is available from SAS Technical Support. Ask for the conversion script in Note 37807.

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Your Turn

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