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SAS[®] Model Manager 2.3 Migration Guide



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SAS® Model Manager 2.3: Migration Guide

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Recommended Reading

- *SAS Deployment Wizard User's Guide*
- *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*
- *SAS Model Manager 2.3: Administrator's Guide*
- *SAS Model Manager 2.3: User's Guide*

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Chapter 1

Introduction to SAS Model Manager 2.3 Migration

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Overview of SAS Model Manager 2.3 Migration

This document describes how to configure the system and promote SAS content from SAS Model Manager 2.1 on SAS 9.1.3 to SAS Model Manager 2.3 on SAS 9.2.

Note: If you are upgrading from SAS Model Manager 2.2 to SAS Model Manager 2.3, you must follow a separate process. See the instructions that are provided during SAS Model Manager 2.3 installation from the SAS Software Depot.

For more information, see the [Migration focus area](#) in the Knowledge Base, available at <http://support.sas.com>. In particular, the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide* provides details about designing, preparing, implementing, validating, and delivering a migration for metadata-based deployments. The [migration guide](#) is available from the SAS Intelligence Platform page of the SAS 9.2 Product Documentation.

SAS Model Manager 2.3 is a new release on the SAS 9.2 platform. It contains enhancements and changes that make it easier to integrate with SAS 9.2. In addition, deployment functionality has been enhanced. For more information, see the *SAS Model Manager: User's Guide* or the *SAS Model Manager: Administrator's Guide*.

You can migrate SAS Model Manager 2.1 information that is stored in your SAS Metadata Server and Xythos WebDAV Server for use with SAS Model Manager 2.3.

After you have upgraded a SAS Model Manager 2.1 installation from SAS 9.1.3 to SAS 9.2, you cannot use SAS Model Manager 2.1. You must use SAS Model Manager 2.3 with SAS 9.2. When you migrate, you perform a full system migration. SAS 9.1.3 content and configuration settings are migrated to SAS 9.2 at the same time. For more information, see the [High-Level SAS Migration Requirements](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.

SAS tools automate most of the tasks that are necessary to migrate content that is stored on the SAS Metadata Server and Xythos WebDAV Server to SAS 9.2:

- The SAS Migration Utility produces a package of SAS 9.1.3 content and configuration settings that the SAS Deployment Wizard uses during the SAS 9.2 installation and configuration.
- The SAS Deployment Wizard installs and initially configures SAS 9.2 products. During migration, the SAS Deployment Wizard reads the package that the SAS Migration Utility created and upgrades SAS with your content and configuration settings for SAS 9.2.

SAS Model Manager Content

Metadata Server

When you use SAS Model Manager, the following project and model information is stored on the SAS Metadata Server:

Mining Result Object

When you export a project or model, a mining result object is created on the SAS Metadata Server. The mining result object contains the list of input variables, the list of output variables, SAS score code, and additional information about model properties. Several products, including SAS Enterprise Guide and SAS Data Integration Studio, can read these models to create SAS jobs that score new data.

Publishing Channels

SAS Model Manager uses the SAS Publishing Framework to publish models to defined channels and notifies subscribers of the publication channel when the models are delivered.

SAS Library and Physical Table Metadata

SAS Model Manager uses physical tables that are defined in the SAS Metadata Server. The metadata about physical tables and libraries is migrated as well.

When you install and configure SAS 9.2 and SAS Model Manager 2.3, you can migrate SAS Metadata Server objects from SAS 9.1.3 for use with SAS 9.2 applications including SAS Model Manager 2.3. This list of objects includes the SAS Model Manager mining result objects, SAS libraries, physical tables, and publishing channels. The migration process converts objects from the SAS 9.1.3 Metadata Server for use with the SAS 9.2 Metadata Server.

Project Data

All project- or model-related data source definitions and publishing channels must be accessible to the SAS Workspace Server that is used by SAS Model Manager. In addition, input and output data sources that are used for scoring tasks, as well as any directories that are associated with publishing channels must also be accessible to the SAS Workspace Server. This data does not need to be migrated to work with SAS Model Manager 2.3, but must be accessible to the SAS Workspace Server that SAS Model Manager 2.3 uses. The SAS Model Manager 2.1 data sources and directories can be made available to the new SAS Workspace Server by moving the directories or making the network directories available to the new SAS Workspace Server for SAS Model Manager 2.3. The SAS Workspace Server that SAS Model Manager 2.3 uses is defined in the app.config file that is located in the `\sasconfigdir\Lev#\AnalyticsPlatform\apps\ModelManager` directory.

For example, in your SAS Model Manager 2.1 environment on the Workspace Server that you have all of the scoring input and output data sets in the `c:\MMDataSources` directory. When SAS Model Manager 2.1 executes a scoring task, the SAS Workspace Server session accesses these input and output data sets. You should copy the entire `MMDataSources` directory and place it in the same location (for example, `c:\`) on the new SAS Workspace Server for SAS Model Manager 2.3. If you have multiple directories in your SAS Model Manager 2.1 environment that contain SAS Model Manager scoring input and output data sets, copy each directory in the same manner.

Publishing channels that have a persistent store type of **Archive** and an archive type of **File** have configuration information in metadata that points to a specific location. If this location is local to the SAS Workspace Server in the SAS Model Manager 2.1 environment, then make sure that the location exists on the new SAS Workspace Server for SAS Model Manager 2.3. For example, in a SAS Model Manager 2.1 environment you can use `c:\channel` as the storage location. Then copy the channel directory from the SAS Workspace Server for SAS Model Manager 2.1 to the `c:\` directory on the SAS Workspace Server for SAS Model Manager 2.3.

If there is a network location being used in any of the cases above, make sure that the network location is accessible to the SAS Workspace Server. The network location access permissions might require assistance from a system administrator.

WebDAV Server

SAS Model Manager 2.3 uses the SAS Content Server as the WebDAV Server. SAS Model Manager 2.1 stores much of its content on the Xythos WebDAV Server. This data is automatically collected when the SAS Migration Utility is executed against SAS 9.1.3. For more information, see [Appendix A1, “SAS Migration Utility,” on page 11](#). During the SAS 9.2 configuration phase, the Xythos content is imported into the SAS Content Server and updated to reflect the new host and port information if necessary.

Chapter 2

SAS Migration Process

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Preliminary Steps

Prepare for Migration

Before you begin your migration, perform these steps:

1. Review the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*, and design your migration. The [migration guide](#) is available from the SAS Intelligence Platform page of the SAS 9.2 Product Documentation.
2. Perform pre-migration tasks.
3. Review the SAS 9.2 Quick Start Guide that was provided with the software.

In addition, you might want to review the administrator's guides for other products in your SAS installation, such as the SAS Analytics Platform.

Note: The promotion approach can be used to move some types of SAS 9.1.3 content to SAS 9.2. However, as a SAS Model Manager 2.1 user, you should use the migration approach to install SAS 9.2 and to update your current content.

Design Your Migration

Follow the steps that appear in the [Designing Your Migration](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*. Here are the most important steps.

- Review high-level SAS migration requirements.
- Assess your hardware and third-party software.
- Perform an inventory of your current SAS deployment. The SAS Migration Utility can help you analyze the content in your current SAS deployment and identify any updates that are needed before the automated migration tools can work with your deployment.
- Evaluate middle-tier options to support the SAS Analytics Platform components.

Perform Pre-migration Tasks

The [Performing Pre-migration Tasks](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide* lists pre-migration steps that you perform. Here is a list of the most important steps:

- Back up your SAS 9.1.3 system, including servers and desktop clients.
- Perform any required SAS 9.1.3 maintenance that is required to meet minimum baselines.
- Determine whether you can use a standard deployment plan to install SAS 9.2 and SAS Model Manager 2.3 or whether you need to request a custom deployment plan. You must specify the plan file when you use the SAS Deployment Wizard.
- Complete the pre-installation and migration checklists. These checklists can be customized based on the deployment plan that you choose. For more information, see the [Completing the Pre-migration Checklists](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.
- If you are moving to a new system, ensure that the required operating system user accounts that you used in SAS 9.1.3 also exist in your new operating system, such as **sasadm**, **sastrust**, **sasdemo**, and **sasguest**. The migration process requires the same operating system user accounts that you used with SAS 9.1.3 and SAS Model Manager 2.1.
- Install third-party software.
- Create a SAS Software Depot. For more information, see the [Creating SAS Software Depots](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.
- Use the SAS Migration Utility to create a migration package. Information about running the SAS Migration Utility is available from the following locations:
 - [“Using the SAS Migration Utility” on page 11](#) includes information about specifying properties in the SAS Migration Utility that apply when you are migrating SAS Model Manager 2.1.
 - The [SAS Migration Utility Reference](#) section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.

Review the Quick Start Guide

When you create a SAS Software Depot for your SAS 9.2 installation, a Quick Start Guide is provided to help you install your downloaded software. The guide is available in the SAS Software Depot, if you choose electronic delivery, or in hard copy if you receive physical media. The Quick Start Guide provides an overview of the steps that are required to install your software, such as links to documentation for system requirements, migration, pre-installation checklists, and installation. You can review this document to ensure that you

have completed the tasks that are necessary before you begin your installation. For more information, see the SAS 9.2 installation documentation that is available from the SAS Install Center.

Migrate a Deployment of SAS Model Manager

For a SAS Model Manager 2.1 deployment, you can use migration tools to migrate information that is stored on the SAS Metadata Server, Xythos WebDAV Server, and a middle-tier server to a SAS Model Manager 2.3 installation.

After you have designed your migration and completed other preliminary steps, you can perform a migration assessment by running the SAS Migration Utility on the machine where the SAS 9.1.3 Metadata Server is installed. The SAS Migration Utility produces a package of SAS 9.1.3 content and configuration settings that the SAS Deployment Wizard uses when you install and configure SAS 9.2 and SAS Model Manager 2.3. For more information, see [“Using the SAS Migration Utility” on page 11](#).

After you create your SAS Migration Utility package and complete your migration assessment, make sure the migration package contains the content from the Xythos WebDAV server. The Xythos content is in the directory `<outputDir>\<SAS 9.1.3 host-name>\WFS\Area1`. You can then begin to install and configure SAS 9.2 and SAS Model Manager 2.3. During this process, you can migrate your content and configuration settings.

1. Begin the deployment on the metadata server. For a Windows installation, select the **setup.exe** file that you downloaded from the SAS Software Depot. For a UNIX installation, select **setup.sh**. This executable program launches the SAS Deployment Wizard, which helps you install and configure SAS 9.2 products.

For more information, see the *SAS Deployment Wizard User's Guide*.

2. In the SAS Deployment Wizard, specify a deployment plan for your installation. This can be a custom deployment plan or a standard deployment plan, such as SAS Model Manager, two machines, and JBoss.
3. At the Migration Information screen, select the **Perform Migration** check box, and enter the path for the migration package that you created.
4. Specify an external user ID and password for an unrestricted user account (for example, System Administrator). Then validate that the correct user ID is specified and enter the appropriate password. For a Windows account, provide the user ID in a qualified format, such as *domain\userID* or *machine\userID*. For UNIX, do not use the machine name as part of the user ID for **sasadm**. Follow the same steps to specify an external user ID and password for the **SAS Trusted User**. Validate that the correct user ID is specified and enter the appropriate password.

Note: The external user accounts on the SAS Model Manager 2.3 machine must match the user accounts for **sasadm** and **sastrust** on the SAS Model Manager 2.1 machine.

5. Continue to follow the prompts in the Deployment Wizard until the **Model Manager Admin** prompt is displayed. SAS Model Manager 2.3 requires that a valid external user ID and password be entered for the **Model Manager Admin** account. This is a new user that did not exist in the SAS Model Manager 2.1 installation information. For a Windows account, provide the user ID in a qualified format, such as *domain\userID* or *machine\userID*. For UNIX, do not use the machine name as part of the user ID for **sasadm**. Follow the same steps to specify an external user ID and password for the

SAS Trusted User. Validate that the correct user ID is specified and enter the appropriate password.

Note: Each user account must have a unique user ID.

6. Complete the installation and configuration, and then perform any required post-installation steps in the generated instructions.html file that is produced after your installation. A summary of the SAS Model Manager 2.3 steps appears in the “[Post-migration Manual Steps](#)” on page 8.
7. Launch SAS Model Manager 2.3 by selecting **Start** ⇒ **Programs** ⇒ **SAS** ⇒ **SAS Model Manager Client 2.3**.
 - a. Log in with your SAS Model Manager user account.
 - b. Select an existing project to work with or create a new one.

Note: The middle-tier server might not be available until all post-installation tasks are completed in step 6.

Post-migration Manual Steps

Custom Content

All custom content from the SAS Model Manager 2.1 **ext** directory was copied to the SAS Model Manager 2.3 **ext** directory automatically as part of the migration process. This content includes all user created life cycle templates, model templates and report templates. However, because of changes in SAS 9.2 and SAS Model Manager 2.3, these files might need to be updated. See the following topics for details.

Life Cycle Templates

Because of changes in SAS 9.2, the SAS Demo User and SAS Administrator participants in any custom Life Cycle Templates must be changed. To check to see whether your custom Life Cycle Templates contain either of those users in the participant list, do the following:

1. Open the custom Life Cycle Template XML file with a text editor. These files are located in the `\sasconfigdir\Lev#\AnalyticsPlatform\apps\ModelManager\ext` directory. For a complete directory path, see the instructions.html file that was generated after your installation.
2. Replace all occurrences of SAS Demo User with **sasdemo**. For example, replace the value of the name for **participant id= "1"** in the XML file.

Example Code 2.1 Before Change

```
<Participants>
  <Participant id="1" name="SAS Demo User"/>
</Participants>
```

Example Code 2.2 After Change

```
<Participants>
  <Participant id="1" name="sasdemo"/>
</Participants>
```

3. Replace all occurrences of SAS Administrator with **mdlmgradmin**.

4. Increment the version number of the Life Cycle Template XML file, by 1. For example, change the value of version in the example XML file from “5” to “6”.

Example Code 2.3 Before Change

```
<LifecycleTemplate
  name="Custom Lifecycle Template"
  version="5"
  isDefault="false"
  description="A custom lifecycle template for users."
>
```

Example Code 2.4 After Change

```
<LifecycleTemplate
  name="Custom Lifecycle Template"
  version="6"
  isDefault="false"
  description="A custom lifecycle template for users."
>
```

5. Save the file.
6. Repeat steps 1 through 5 for each custom Life Cycle Template.
7. Stop the SAS Analytics Platform server, in order to stop all SAS Analytics Platform clients, including SAS Model Manager.
8. Restart the SAS Analytics Platform. For more information, see the *Administrator's Guide for SAS Analytics Platform*.

Publishing Channels

In SAS 9.2, security has been improved and all migrated publishing channels that SAS Model Manager might use must be modified to give SAS Model Manager users additional permissions.

To grant user permissions, follow these steps:

1. Log in to SAS Management Console using the SAS Administrator account.
2. Expand the **Publishing Framework** ⇒ **Foundation** ⇒ **Channels** folder.
3. Expand any custom folders that might have been created.
4. Right-click the migrated channel definition and select **Properties** to view the channel properties dialog-box.
5. Select the **Authorization** tab.
6. Click **Add**.
7. Select **Model Manager Administrator Users** and **Model Manager Advanced Users** under the **Available Identities** panel and add them to the **Selected Identities** panel.
8. Click **OK**.
9. Select **Model Manager Administrator Users** and grant the **WriteMetadata** permission to this group by clicking the **Grant** column in the **Effective Permissions** panel.

10. Select **Model Manager Advanced Users** and grant the **WriteMetadata** permission to this group by clicking the **Grant** column in the **Effective Permissions** panel.
11. Click **OK**.
12. Repeat steps 4 through 11 for each migrated Model Manager channel.

Note: If these steps are not taken, then the following error appears in the **Details** section of the Publish Failed dialog box: ERROR: The user does not have permission to perform this action.

Windows 32-bit to Windows 64-bit Migration

If you are migrating from a Windows 32-bit server to a Windows 64-bit server, then some post-installation tasks are required. Read the following SAS Note and download the SAS Macro code from the link below, to complete the migration process.

- [SAS Note 35077](#)
- [SAS Macro code](#)

Appendix 1

SAS Migration Utility

The SAS Migration Utility produces a package of SAS 9.1.3 content and configuration settings that the SAS Deployment Wizard uses when you install and configure SAS 9.2. The SAS Migration Utility must be run on every machine that is running SAS 9.1.3. Begin the migration assessment by running the SAS Migration Utility on the machine where the SAS Metadata Server is installed.

Perform the following steps to run the SAS Migration Utility:

1. Create a SAS Software Depot for your SAS 9.2 order. The default location for the depot on a Windows system is **C:\SAS Software Depot**.
2. Locate the SAS Migration Utility that is provided in your SAS Software Depot. The depot includes a **utilities** folder with an **smu** subfolder. The default location on a Windows system is **C:\SAS Software Depot\utilities\smu**. The **smu** folder includes an executable and properties template that enables you to run the SAS Migration Utility on the SAS 9.1.3 machine where SAS Model Manager 2.1 is installed.

Note: The SAS Migration Utility is provided with your SAS 9.2 software. You can download the SAS Migration Utility at <http://www.sas.com/apps/demosdownloads/setupintro.jsp> to do a preliminary assessment of the scope of migration for your SAS 9.1.3 products. But, you should not use the downloaded version to perform your software migration. Instead, use the SAS Migration Utility that is included with your SAS 9.2 order. The SAS Migration Utility ensures compatibility with all of the SAS products in your order.

For more information, see the **SAS Migration Utility Reference** section of the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide*.

3. If your SAS 9.1.3 and SAS 9.2 installations will be on different machines and the SAS Software Depot is not accessible from the SAS 9.1.3 machine, copy the **smu** folder to a location on the machine that contains your SAS Model Manager Application Programming Interface 2.1 installation. Run the SAS Migration Utility on this machine to assess the scope of migration for your SAS 9.1.3 products.
4. You can run the SAS Migration Utility by using options that you specify in a properties file. To run the SAS Migration Utility by using a properties file, perform the following steps:
 - a. Copy the **smu.properties.template** file and rename it as **smu.properties**.
 - b. Edit the **smu.properties** file to correspond to the SASROOT, SASHOME, host, port, user IDs, and profile entities for your SAS 9.1.3 installation. You can also specify an output directory where the results of your SAS Migration Utility assessment are written.

Note: The properties file includes a section on the SAS Analytics Platform and Xythos WebDAV Server. Remove the comment notations from the lines for

SMU.apcore.dir and **SMU.apcore.migration**. Change the value for **SMU.apcore.migration.is_enabled** to **true**. Also, remove the comment notations from the line **SMU.WFS.XythosHome**.

For example,

```
SMU.apcore.dir=C:\\Program Files\\SAS\\SASAPCore
SMU.apcore.migration.is_enabled=true
SMU.WFS.XythosHome=C:\\Program Files\\SAS\\xythos\\2.3
```

Then, save your changes.

- c. Run the SAS Migration Utility on the machines where SAS 9.1.3 is installed. Open a command prompt and navigate to the **smu** folder on the machine that contains your SAS 9.1.3 installation.

If you are using a Windows system, submit the following command:

```
smu -s -a -properties "<path-to-smu.properties-file>" -replace
```

If you are using a UNIX system, submit the following command:

```
./smu.sh -- -properties/<path-to-smu.properties-file> -replace
```

Note: When executing the SAS Migration Utility on the machine where Xythos is installed, add the **-DAVTIER** option to the SMU command as well. On a Windows system the command would be **smu -s -a - "<path-to-smu.properties-file>" -replace -davtier**

These commands generate reports and other migration metadata that are written to the output location that you specified in the **smu.properties** file. The output includes a folder with your machine name, a **migration-schemas** folder, and a **manifest.properties** file.

- 5. After you run the SAS Migration Utility, navigate to the **output** folder, and expand the folder that has your machine name. You can review the reports and the SAS migration log file that the SAS Migration Utility creates. Make sure the migration package contains the content from the Xythos WebDAV server. The Xythos content is in the following directory: **<outputDir>\<SAS9.1.3 host-name>\WFS\Area1**.
- 6. View the **migrate.log** file and check for errors.
- 7. Select the Analysis Report folder to view reports from the SAS Migration Utility.
 - a. In **FullReport.html**, examine the **Product: SAS Model Manager API** section. If migration is supported, the Status column is checked:

Product: SAS Model Manager API

Status	Item name	Classification	Item type	Version	System location	Package location	Details
✓	SAS Model Manager Application Programming Interface	Config	SAS Model Manager Product	2.1		n/a	Migration of SAS Model Manager Application Programming Interface is supported.

- b. You can also review other reports if you want to check the migration status of your SAS 9.1.3 installation.

After you create your SAS Migration Utility package, ensure that you can access the package location from the machine where you are installing SAS 9.2. You might need to share the folder that contains the SAS Migration Utility package, and either mount or copy the SAS Migration Utility package to the machine where you will install SAS 9.2.