SAS® Model Manager 15.1: Administrator's Guide

Overview of SAS Model Manager Administration

This guide provides post-installation configuration tasks for SAS Model Manager 15.1 on SAS Viya, and explains both how to prepare SAS Model Manager for use and how to manage information that is associated with SAS Model Manager. The administrator uses SAS Environment Manager to define data sources, configure publish destinations, and to manage user access and permissions.

Here are the tasks that are included:

- Manage permissions
- Promote content
- Configure data libraries
- Configure publish destinations
- Restart the Model Repository service

For information about deploying SAS Model Manager 15.1 on the SAS Viya platform, see the **Deployment and Administration** section of the SAS Viya documentation page.

Managing Permissions

How to Manage Permissions

SAS Environment Manager is used to manage identities and authorization for SAS Viya. Information is available in the SAS Viya administration documentation:

- "Two Authorization Systems" in SAS Viya Administration: Orientation to Authorization
- "Identity Management Overview" in SAS Viya Administration: Identity Management

The default permissions for SAS Model Manager are described in "Default Permissions" on page 2. To modify the default permissions, you can do the following:

- Modify permissions for specific folders or objects by using the Edit Authorization window. For more information, see "General Authorization: How to (Authorization Window)" in SAS Viya Administration: General Authorization .

- Modify the existing groups or create new ones. For more information, see the following topics:

  □ "Manage Custom Groups" in SAS Viya Administration: Identity Management

  □ "Granting Access to Test Results" on page 2

- Modify the existing rules or create new rules. For more information, see "General Authorization: How to (Rules Page)" in SAS Viya Administration: General Authorization .

Default Permissions

By default, all authenticated users have permission to do the following:

- Read or view a list of all models and projects.

- Create or delete a repository folder.

  Note: The default repository (for example, Repository 1) cannot be deleted by authenticated users.

- Create a model or project.

- Copy a model from another project or a folder.

- Move a model from a folder or project version to another folder or project version.

- Update and delete any model or project.

- Publish any model, including a project champion and challenger models.

- Create a test definition for any model that they have access to read.

By default, only the user that created a test definition can do the following:

- View, update, or delete the test definition.

- Run the test and view the test results.

You can grant access to test definitions and test results to users other than the user that created the definition either by adding the users to the `SASScoreUsers` group or by granting the users access to specific test results. For more information, see "Granting Access to Test Results" on page 2.

Note: Specific permissions are required for the following tasks:

- To start a workflow or work with tasks, you must be in the SAS Workflow Process Administrators group and have permissions to access the workflow definition. If you need only to view a list of the tasks, you must be in the SAS Workflow Viewers group. For more information, see *SAS Workflow Manager: Administrator's Guide*.

- To move a model, you must have the appropriate permissions for the source folder, object, and target folder. For more information, see "Move an Object or Folder" in SAS Viya Administration: Content Management .

Granting Access to Test Results

By default, only the user who creates a test can view, update, or delete the test definition or run the test. Only a user that runs a test can view the test results. Other users do not have permission to access the test definition or test results unless the user is a member of the `SASScoreUsers` group.

SAS Model Manager configures the `SASScoreUsers` group automatically. Members of this group have full access to test definitions and results. These permissions enable access through the user interface, the score definition service, and the score execution service. For instructions on adding users to a group, see "Manage Custom Groups" in SAS Viya Administration: Identity Management .

Promoting Content

Promotion is the process of capturing content and moving it to a different location. For SAS Model Manager 15.1 on SAS Viya, promotion and migration are performed using the transfer plug-in to the admin command-line interface (CLI). Migrating content from SAS Model Manager 14.2 on SAS 9.4 to SAS Model Manager 15.1 on SAS Viya is not currently supported.

Note: Workflow content cannot be migrated.

To move SAS Model Manager 15.1 content, see "Promote Content from One SAS Viya Environment to Another" in SAS Viya Administration: Promotion (Import and Export) .

Configuring Data Libraries

During the deployment of SAS Model Manager, the ModelStore caslib is created on the CAS default server (cas-shared-default). The ModelStore caslib stores model analytic stores created by SAS Visual Analytics or Model Studio. The ModelStore caslib must exist on each CAS server in a cluster. If your model references a train table in a library that exists on a server that does not have a ModelStore library, you cannot register the model from Model Studio to the SAS Model Manager common model repository. An error message is displayed.

SAS Model Manager data sources are managed using SAS Environment Manager. You can create libraries (caslibs) and import tables to be used by SAS Model Manager. For more information, see "Data Administration: How to (SAS Environment Manager)" in SAS Viya Administration: Data .

To add the ModelStore caslib to a non-default CAS server:
1 Sign in to SAS Environment Manager as an administrator.

   Note: If you are already logged in to SAS Model Manager, you can access SAS Environment Manager by clicking ≡ and selecting **Manage Environment**.
2 Click ⊞ in the navigation bar.
3 In the **View** menu, select **Libraries**.
4 Click ⬈. The New Caslib window appears.
5 Select the CAS server (for example, **cas-shared-mpp**) where you want to new caslib to reside.
6 Select **PATH** as the data source type.

   Note: User a similar path to the one specified for the **ModelStore** caslib on the **cas-shared-default** server.
7 Enter **ModelStore** for the name of the library.
8 Click **Save**.

Configuring Publish Destinations

Overview

You can configure SAS Model Manager to publish content to the following destinations:

- SAS Cloud Analytic Services (CAS)

- Hadoop

- SAS Micro Analytic Service

- Teradata

You can configure multiple destinations of each type except the SAS Micro Analytic Service. Each destination must have a unique name.

Note: You must have administrative privileges to configure publishing destinations. If other products that use publishing destinations, such as SAS Decision Manager or SAS Model Studio, are installed on the same server, you do not need to configure separate publishing destinations for each product. Publishing destinations are shared by these products when they are installed on the same server.

Additional information about the administrative tasks required to configure publishing destinations is available in the following topics:

- "External Credentials: How To" in SAS Viya Administration: External Credentials

- "Manage Caslibs" in SAS Viya Administration: Data

- "CAS Authorization: How to (Authorization Window)" in SAS Viya Administration: Cloud Analytic Services Authorization

Configure a Publish Destination for CAS

To publish models to CAS, you must configure a publish destination. You can define a new publish destination using the %MM_DEFINEPUBLISHDESTINATION macro. You can also update an existing publish destination, using the %MM_UPDATEPUBLISHDESTINATION macro.

For more information, see "Publish Destination Macros" in SAS Model Manager: Macro Reference .

Note: Your user ID must have access to a global caslib such as CASUSER or PUBLIC before running the macro. If you want to add a new caslib, you must have permission to create a global caslib. For more information, see "Data Administration: How to (SAS Environment Manager)" in SAS Viya Administration: Data .

Configure a Publish Destination for Hadoop

Note: Your user ID must have permission to create a global caslib.

Note: As a publishing destination for SAS Model Manager, Apache Hadoop is supported only through Apache Hive.

1 Sign in to SAS Environment Manager as an administrator.

   Note: If you are already logged in to SAS Model Manager, access SAS Environment Manager by clicking ≡ and selecting **Manage Environment**.

2 Create an authentication domain on page 6.
3 Create a Hadoop global CAS library.
   a Click ▦ in the navigation bar.
   b In the **View** menu, select **Libraries**.
   c Click ▐✲. The New Caslib window appears.
   d Select the CAS server where you want the published content to reside.
   e Select **Hadoop** as the data source type. The fields in the window change.
   f Enter a unique name for the library.
   g In the **Data Source** section of the window, enter values for the fields listed in the following table:

   Table A.1 *Hadoop Data Source Settings*

Field	Value
Authentication domain	Select the authentication domain that you created in Step 2.

Field	Value
Server	The name of the Hadoop server that runs the Hive service.
Hadoop config dir	The path to the directory that contains the configuration files for the Hadoop server. This path must be available to the location where SAS Model Manager is running.
Hadoop jar path	The path to the directory that contains the JAR files for the Hadoop server. This path must be available to the location where SAS Model Manager is running.

> **Note:** Accept the default values for the remaining fields in the New Caslib window.

    h Click **Save**.

4 Grant authenticated users permission to publish to the library.

5 Run the %MM_DEFINEPUBLISHDESTINATION macro to define a new publish destination.

6 (Optional) Verify that the destination is configured properly.

Configure a Publish Destination for SAS Micro Analytic Service

The default SAS Micro Analytic Service destination is named **maslocal**, and it is configured automatically when SAS Model Manager is installed. If the default SAS Micro Analytic Service destination is deleted, you can define a new one using the %MM_DEFINEPUBLISHDESTINATION macro.

Configure a Publish Destination for Teradata

Note: Your user ID must have permission to create a global caslib.

1 Sign in to SAS Environment Manager as an administrator.

> **Note:** If you are already logged into SAS Model Manager, you can access SAS Environment Manager by clicking ≡ and selecting **Manage Environment**.

2 Create an authentication domain on page 6.

3 Create a global Teradata CAS library.
    a Click ⊞ in the navigation bar.
    b In the **View** menu, select **Libraries**.
    c Click ⬗. The New Caslib window appears.
    d Select the CAS server where you want the published content to reside.
    e Select **Teradata** as the data source type. The fields in the window change.
    f Enter a unique name for the library.
    g In the **Data Source** section of the window, enter values for the fields listed in the following table:

Table A.2   *Teradata Caslib Settings*

Field	Description
Authentication domain	Select the authentication domain that you created in Step 2.
Data transfer mode	Select the data transfer mode, **Serial** or **Parallel**, for your database.
Server	The name of the Teradata server.

Field	Description
Database	The name of the Teradata database.
Schema	The name of the database schema.

Note: Accept the default values for the remaining fields in the New Caslib window.

   h Click **Save**.

4 Grant authenticated users permission to publish to the library.

5 Run the %MM_DEFINEPUBLISHDESTINATION macro to define a new publish destination.

6 (Optional) Verify that the destination is configured properly.

Create an Authentication Domain

1 Sign in to SAS Environment Manager as a SAS administrator.

Note: If you are already logged in to SAS Model Manager, access SAS Environment Manager by clicking ≡ and selecting **Manage Environment**.

2 Click ⚗ in the navigation bar.

3 Click 🗗. The New Domain window appears.

4 Enter an ID (a unique name) for the domain, and select **Authentication** for the domain type.

5 Click ➕. The Select Identities window appears.

6 Add the appropriate identities to the domain, and click **OK** to return to the New Domain window. This window now contains additional fields such as user ID and password.

7 Enter values to use for connecting to the database or file system, and click **Save**.

Grant Users Permission to Publish

1 Select the library, click 🔒, and select **Edit Authorization**. The Edit Authorization window appears.

2 Move the slider for **Authenticated Users** to include **Write** permission.

Principal	Access Level	ReadInfo	Select	LimitedPromote	Promote	CreateTable	DropTable	DeleteSource	Insert	Update	Delete	AlterTable	AlterCaslib	ManageAccess
👥 Authenticated Users	Write	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	✓ ◆	⊘ ◆	⊘ ◆

3 Click **Close**.

Verify the Destination Configuration

You can verify that a destination has been configured properly in one of two ways:

■ Publish a model from SAS Model Manager. For more information, see "Publishing Models" in SAS Model Manager: User's Guide .

■ Connect to the URL for your server (http://*server_name*/modelPublish/destinations) and search for the destination name.

Restarting the Model Repository Service

If the default repository `Repository 1` has been renamed or deleted, the Model Repository service needs to be restarted by a system administrator to re-create the default repository. The default repository can be deleted only by a SAS Administrator.

Here is the command to restart the Model Repository service:

```
sudo service sas-viya-modelrepository-default restart
```

For more information, see "General Servers and Services: Operate" in SAS Viya Administration: General Servers and Services .

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