Configuration Properties

Properties for All Environments

After you install SAS Decision Manager, review the configuration properties listed in Table A.1 to ensure that the values are appropriate for your environment. For instructions about modifying these properties, see “Configuration Properties: How to Configure Services” in SAS Viya Administration: Configuration Properties.

<table>
<thead>
<tr>
<th>Service</th>
<th>Property</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decisions</td>
<td>taskExecutor.maxThreads</td>
<td>4</td>
<td>Specifies the maximum number of threads that can be used for processing requests.</td>
</tr>
<tr>
<td></td>
<td>PerRequest</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>taskExecutor.minItemsPer</td>
<td>5</td>
<td>Specifies the minimum number of items that can be processed inside the same thread.</td>
</tr>
<tr>
<td></td>
<td>Thread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>deleteExecutions</td>
<td>false</td>
<td>Specifies whether existing test results for a rule set, model, or decision test are deleted before the test is re-run. By default, existing results are not deleted when a test is re-run. For more information, see “Managing Test Data” on page 5.</td>
</tr>
<tr>
<td>Execution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Properties for Multi-tenancy Environments

After you onboard a tenant, you need to define two configuration properties. Complete these steps for each tenant:

1. After the tenant has been onboarded, sign in to SAS Environment Manager as an administrator.

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

2. Click on the navigation bar.
On the View menu, select Definitions.

Select sas.referencedata.casformats, and click New Configuration. The New sas.referencedata.casformats Configuration window appears.

In the backupLibrary field, enter Formats.

In the formatsLibrary field, enter userformats3.

Click Save.

---

Managing Permissions

About Permissions

You use SAS Environment Manager 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

You can configure user access based on folders, object types, or specific objects. To grant full access to an object, a user must have access to all of the service endpoints (object URIs) that are associated with the object. For more information, see “Full Access and Service Endpoints” on page 3.

The default permissions for SAS Decision Manager are described in “Default Permissions” on page 2.

Default Permissions

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

- create rule sets, lookup tables, and decisions
- update and delete any rule set, lookup table, or decision that they created
- publish any rule set, lookup table, decision, or model that they created
- run a publishing validation test for any rule set, lookup table, decision, or model that they published
- create a test definition for any rule set, decision, or model that they created

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
- run a rule-fired analysis or decision-path tracking analysis and view the results

You can grant access to test definitions, to publishing validation test definitions, and to 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 results. For more information, see “Granting Access to Test Results” on page 3.

Modifying the Default Permissions

You can modify the default permissions in the following ways:

Modify the existing rules or create new rules. For more information, see the following topics:

- “Granting Permissions for Object URIs” on page 4

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 3

Full Access and Service Endpoints

In order to have full access to an object, a user must have access to the folder that contains the object, to the specific object, to any additional objects that are referenced the object, and to the service endpoints for all object types.

Service endpoints for specific object types are represented by the object URIs. These object URIs are shown in “Granting Permissions for Object URIs” on page 4. You grant permissions for object URIs by creating or modifying rules in SAS Environment Manager.

For example, in order to have full access to a specific decision, the user must have access to the following:

- the folder that contains the decision.
- the decision, plus any rule sets, lookup tables, models, or code files that are included in the decision.
- the service endpoints for the object types for the folder, the decision, and all of the objects that are included in the decision. If the decision contains a model, the endpoints for the model repository and the model project (if the model is in a project) must be included.
- the service endpoints for the object types that are needed to create and run a decision test: /scoreDefinitions/definitions and /scoreExecution/executions. Alternatively, the user can be a member of the SASScoreUsers group. See “Granting Access to Test Results” on page 3 for more information.
- the service endpoints that are needed to publish the decision: /modelPublish/destination and /modelPublish/destination/{destination}.

Note: If a user has access to a decision but does not have access to an object that is referenced in the decision, SAS Decision Manager displays 🅱️ next to the object name.

Granting Access to Test Results

By default, only the user who creates a rule set test, decision test, or model test can view, update, or delete the test definition or run the test. Only a user who runs a test can view the test results and run rule-fired analyses or decision-path tracking analyses. Other users cannot access the test definition or test results unless one of the following is true:

- the user is a member of the SASScoreUsers group. SAS Decision 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.

Note: It is recommended that you control access to test definitions and results by using the SASScoreUsers group rather than by creating rules for specific test definitions or results.

- you created rules that grant the user access to the URIs that are generated when a particular test is run. The Test Results page, Rule-Fired Analysis page, and Decision Path Tracking page for a test list the URIs to all of the test results. See “General Authorization: How to (Rules Page)” in SAS Viya Administration: General
Authorization for instructions about creating rules in SAS Environment Manager. Specify the URIs of the results in the Object URI field in the New Rule window.

Note: Each time a test is run, the IDs for the test results are regenerated. Therefore, the URI to the test results changes.

Granting Permissions for Object URIs

By default, general rules exist for all object URIs in SAS Decision Manager. Before you create a new group or rule, review the existing rules. You should modify existing rules if possible, rather than create a new rule for an object URI.

See “General Authorization: How to (Rules Page)” in SAS Viya Administration: General Authorization for instructions about creating and modifying rules in SAS Environment Manager. To grant permissions for an object URI, specify the object URI in the New Rule window. Permissions that can be granted for specific URIs are shown in Table A.2 on page 4.

Note: In the New Rule window, the Container URI is a URI to a folder.

Table 2  Object URIs for Objects in SAS Decision Manager

<table>
<thead>
<tr>
<th>Object URI</th>
<th>Permissions That Can Be Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>/businessRules/rules</td>
<td>Import and export rule sets.</td>
</tr>
<tr>
<td>/decisions/codeFiles</td>
<td>Create, read, update, and delete custom code files.</td>
</tr>
<tr>
<td>/decisions/commons/validations/codeFiles</td>
<td>Validate code file content. Code file content is validated when you save the code file.</td>
</tr>
<tr>
<td>/decisions/flows</td>
<td>Create, read, update, and delete decisions. Create new versions of decisions. Generate SAS code for decisions.</td>
</tr>
<tr>
<td>/modelPublish/models</td>
<td>Publish rule sets, models, and decisions to the SAS Micro Analytic Service, to a CAS server, to a Hadoop database, or to a Teradata database.</td>
</tr>
<tr>
<td>/modelPublish/destinations</td>
<td>Define new publish destinations.</td>
</tr>
<tr>
<td>/modelPublish/destinations/destinationName</td>
<td>Update or delete an existing destination.</td>
</tr>
<tr>
<td>/referenceData/domains</td>
<td>Create, read, update, and delete lookup tables.</td>
</tr>
<tr>
<td>/referenceData/domainEntries</td>
<td>Import and export lookup tables.</td>
</tr>
<tr>
<td>/scoreDefinitions/definitions/**</td>
<td>Create, read, update, and delete rule set tests, decision tests, model tests, and publishing validation tests in the user interface and in the score definition service.</td>
</tr>
<tr>
<td>/scoreExecution/executions/**</td>
<td>Run rule set tests, decision tests, model tests, and publishing validation tests in the user interface and the score execution service. Run rule-fired analyses and decision-path tracking analyses.</td>
</tr>
</tbody>
</table>
Configuring Publishing Destinations

You can publish content to destinations on SAS Cloud Analytic Services (CAS), Apache Hadoop, SAS Micro Analytic Service, and Teradata. By default, a SAS Micro Analytic Service destination named maslocal is defined for you. Use SAS Environment Manager to manage publishing destinations. For more information, see SAS Viya Administration: Publishing Destinations.

You can use the SAS Decision Manager tutorial to verify that your publishing destinations have been configured properly. For more information, see SAS Decision Manager: Quick Start Tutorial.

Promoting Content

Promotion is the process of capturing content and transferring it to a different location. The following scenarios are supported:

- transferring content from SAS 9.4 to SAS Viya
  
  To transfer SAS Decision Manager content from SAS Decision Manager 3.2 on SAS 9.4 to SAS Decision Manager 5.2 on SAS Viya, use the sas-dcmtransfer-cli command-line interface. For more information, see the following topics:

  - “Using SAS Decision Manager CLIs” in SAS Decision Manager: Command-Line Interfaces
  - “Command-Line Interface: Preliminary Instructions” in SAS Viya Administration: Using the Command-Line Interfaces
  - “sas-dcmtransfer-cli” in SAS Decision Manager: Command-Line Interfaces

- transferring content from one SAS Viya environment to another
  
  To transfer SAS Decision Manager content from SAS Decision Manager 5.1 on SAS Viya to SAS Decision Manager 5.2 on SAS Viya, use the SAS Viya promotion process. For more information, see SAS Viya Administration: Promotion (Import and Export).

Note: After a lookup table is transferred to a new environment, you must either activate the table in the new environment or transfer the formats data on SAS Cloud Analytic Services (CAS). See “Activate a Lookup Table” in SAS Decision Manager: User’s Guide for more information.

Note: Test definitions and test results for rule sets, models, and decisions are not transferred automatically when rule sets, models, and decisions are transferred. To transfer test definitions and test results, the URIs for each definition or results table must be listed in the transfer request. Output tables on CAS must be transferred manually. However, it is recommended that you re-create and rerun the test in the target environment instead of transferring the old output tables and test information.

Managing Test Data

When you run a rule set, model, or decision test, several files are created. The URI to the test definition and all of the test results are displayed on the Test Results page.

By default, when you re-run an existing test, the previous test results are not deleted before the new results are generated. To automatically delete test results, set the deleteExecutions configuration property to True. See “Properties for All Environments” on page 1 for more information.
When a test definition is deleted, the associated test results are normally deleted. However, the deletion transaction might be interrupted or the user might not have permission to delete output tables on CAS. To delete results files such as log files, code files, and CAS tables that are not deleted when the associated test is deleted, use the `sas-scoreexecution-cli` command-line interface. See “sas-scoreexecution-cli” in SAS Decision Manager: Command-Line Interfaces for more information.

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Configuring Access to Analytic Store Models

Mapping Analytic Store Directories

In order to publish decisions that use Analytic store models to the SAS Micro Analytic Service destination, the model's analytic store (ASTORE) file must be accessible from the `/models/astores/viya` path.

The Compute service extracts the ASTORE file from the analytic store’s CAS table in the ModelStore caslib and copies it to `/opt/sas/viya/config/data/modelsvr/astore`. The service copies the ASTORE file when you do any of the following:

- run a decision test for a decision that uses the Analytic store model
- set the model as a project champion in SAS Model Manager
- publish the model to SAS Micro Analytic Service from SAS Model Manager

In order to make the model’s ASTORE file accessible, you must map the `/opt/sas/viya/config/data/modelsvr/astore` directory to the `/models/astores/viya` directory. You must create this mapping on each server that hosts either SAS Micro Analytic Service or SAS Event Stream Processing.

If the Compute service and one of the consuming services are on the same server, the mapping can be a symbolic link. In a clustered environment in which the Compute service and the consuming services are on different servers, you can use a Network File System (NFS) mount or another shared directory.

Setting Permissions

Users who need to work with Analytic store models must have Read and Write permissions to both the `/opt/sas/viya/config/data/modelsvr/astore` and `/models/astores/viya` directories. By default, the `sas` group has full permission to these directories. However, this group is intended for administrators. For more information, see “User Accounts (Reference)” in SAS Viya for Linux: Deployment Guide.

As an alternative, you can create a new system group and give members of the new group access to these directories.

1. Create a system group that contains the user accounts for users that need to work with Analytic store models.
2. Replace the default `sas` group with the new group for both directory paths.
3. Grant members of the group Read and Write permissions for the directory paths.
4. Set the `setgid` bit on both directories. For more information, see How to use special permissions: the `setuid`, `setgid` and sticky bits.