Configuration Properties

Properties for All Environments

After you install SAS Intelligent Decisioning, review the configuration properties listed in Table 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 1 SAS Intelligent Decisioning 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 PerRequest</td>
<td>4</td>
<td>Specifies the maximum number of threads that can be used for processing requests.</td>
</tr>
<tr>
<td>Score</td>
<td>historyscheduler</td>
<td></td>
<td>controls the extraction and publishing of subject contact history records. For information, see &quot;historyscheduler&quot; in SAS Micro Analytic Service: Programming and Administration Guide.</td>
</tr>
<tr>
<td>Score</td>
<td>asynchronousexecution</td>
<td></td>
<td>controls asynchronous communication between the SAS Micro Analytic Service and the subject contact service. For more information, see &quot;asynchronousexecution&quot; in SAS Micro Analytic Service: Programming and Administration Guide.</td>
</tr>
<tr>
<td>Execution</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 7.</td>
</tr>
<tr>
<td>Definition</td>
<td>activation.destinations</td>
<td>maslocal</td>
<td>Specifies the list of SAS Micro Analytic publishing destinations.</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 you onboard the tenant, sign in to the tenant SAS Environment Manager as an administrator for the tenant environment.
   
   **Note:** If you are already logged in to SAS Intelligent Decisioning, access SAS Environment Manager by clicking and selecting Manage Environment.

2. Click on the navigation bar.

3. On the View menu, select Definitions.


5. In the backupLibrary field, enter Formats.

6. In the formatsLibrary field, enter userformats3.

7. 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. You can control which categories appear in the user interface by controlling access to root endpoints. 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 Intelligent Decisioning 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

For rule sets and decisions, 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 granting access to the folder that contains the tests or by granting the users access to specific results. For more information, see “Granting Access to Test Results” on page 4.

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 4

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 folder that contains the test definition and test results
- 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, if you are using the SASScoreUsers group, the user can be a member of the SASScoreUsers group. See “Granting Access to Test Results” on page 4 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 Intelligent Decisioning displays ☓ next to the object name.
Granting Access to Test Results

Granting Access to Tests Created In SAS Intelligent Decisioning 5.3

When you create a new rule set test or decision test in SAS Intelligent Decisioning 5.3, you can specify a folder in which the test definition and the test results are stored. For tests that are saved in folders, access is based on the permissions for the folders, the object types, or the specific objects as described in "Full Access and Service Endpoints" on page 3.

Note: You can control access to rule set tests and decision tests in SAS Intelligent Decisioning 5.3 by using the SASScoreUsers group. However, it is recommended that you store test definitions and results in folders. The ability to store tests outside of folders and the use of the SASScoreUsers group for rule set and decision tests is supported for legacy purposes only.

Granting Access to Tests Created In Previous Releases

In previous releases, you could not save test definitions and test results in a folder. By default, only the user who created a rule set test, decision test, or model test could view, update, or delete the test definition or run the test. Only a user who ran a test could view the test results and run rule-fired analyses or decision-path tracking analyses. Other users could not access the test definition or test results unless one of the following was true:

- the user was a member of the SASScoreUsers group. SAS Intelligent Decisioning configured the SASScoreUsers group automatically. Members of this group had full access to test definitions and results. These permissions enabled 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.

- you created rules in SAS Environment Manager that grant the user access to the URIs that were generated when a particular test was 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. You can grant access to these results by creating rules in SAS Environment Manager. See “General Authorization: How to (Rules Page)” in SAS Viya Administration: General Authorization for more information. 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 Intelligent Decisioning. 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 2 on page 5.

Note: In the New Rule window, the Container URI is a URI to a folder.
### Table 2  Object URIs for Objects in SAS Intelligent Decisioning

<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, treatment groups, and decisions to the SAS Micro Analytic Service, to a SAS Cloud Analytic Services (CAS) server, to an Apache 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>
<tr>
<td>/subjectContacts/contacts/**</td>
<td>Create, read, update, and delete subject contact records.</td>
</tr>
<tr>
<td>/treatmentDefinitions/definitions/**</td>
<td>Create, read, update, and delete treatment definitions.</td>
</tr>
<tr>
<td>/treatmentDefinitions/definitionGroups/**</td>
<td>Create, read, update, and delete treatment group definitions.</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. You must configure all other publishing destinations. Use SAS Environment Manager to manage publishing destinations. For more information, see [SAS Viya Administration: Publishing Destinations](#).

You can use the SAS Intelligent Decisioning tutorial to verify that your publishing destinations have been configured properly. For more information, see [SAS Intelligent Decisioning: Quick Start Tutorial](#).
In addition to the default `maslocal` destination, you can also configure one or more remote SAS Micro Analytic Service destinations. To create the publishing destination, post a REST request to `/modelPublish/destinations`. The request must include the fields listed in Table 3 on page 6.

**Table 3  HTTP Request Fields to Create a Remote SAS Micro Analytic Publishing Destination**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content-type</td>
<td>application/vnd.sas.models.publishing.destination+json</td>
<td></td>
</tr>
<tr>
<td>Body Fields</td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td><code>destination_name</code></td>
<td>Specify a unique name for the destination. This name will appear in the publishing windows.</td>
</tr>
<tr>
<td>masUri</td>
<td><code>https://host.com:&lt;port&gt;</code></td>
<td>Specify the URI for the destination. Include a port number if you are using a port other than port 80.</td>
</tr>
<tr>
<td>authenticationDomain</td>
<td><code>domain_name</code></td>
<td>Specify the authentication domain. The domain must be available in SAS Environment Manager. For instructions for creating a new domain, see “Create a New Domain” in SAS Viya Administration: External Credentials.</td>
</tr>
</tbody>
</table>

**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

  **Important:** Complex rule flows are not supported in SAS Intelligent Decisioning and cannot be transferred from SAS 9.4 to SAS Viya.

  To transfer content from SAS Business Rules Manager on SAS 9.4 or SAS Decision Manager on SAS 9.4 to SAS Intelligent Decisioning 5.3 on SAS Viya, use the `sas-dcmtransfer-cli` command-line interface. For more information, see the following topics:

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

  **Note:** Rule flows that use data grids cannot be transferred using the SAS Intelligent Decisioning command-line interface.

  For rule expressions that use macros, the macros are transferred, but the macros must be replaced after rule sets are imported to SAS Viya.

- transferring content from one SAS Viya environment to another
To transfer content from SAS Decision Manager 5.1 or 5.2 on SAS Viya to SAS Intelligent Decisioning 5.3 on SAS Viya, use the SAS Viya promotion process. For more information, see SAS Viya Administration: Promotion (Import and Export).

Important: 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 Intelligent Decisioning: 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 that is not in a folder must be listed in the transfer request. To transfer test definitions and test results that are in a folder from one SAS Intelligent Decisioning 5.3 environment to another SAS Intelligent Decisioning 5.3 environment, you can transfer the folders that contain the tests instead of listing specific URIs 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 Intelligent Decisioning: Command-Line Interfaces for more information.

### Configuring Access to Analytic Store Models

In order to publish decisions that use analytic store models to the maslocal SAS Micro Analytic Service destination, you must configure access to the location where the ASTORE files are located. Also, users who need to work with analytic store models must have Read and Write access to analytic store directories. For more information, see “Configuring Access to Analytic Store Model Files” in SAS Viya Administration: Models.

When you publish decisions that use analytic store models to remote SAS Micro Analytic Service destinations, SAS Intelligent Decisioning does not automatically extract and copy the ASTORE files to the /opt/sas/viya/config/data/modelsrv/astore directory on the remote server that is hosting SAS Micro Analytic Service. You must either copy the ASTORE files manually or mount a shared file system across all environments, including remote systems, so that the files are available at the appropriate location.

In order to publish decisions that use analytic store models to SAS Cloud Analytic Services (CAS), you must configure access to the ModelStore caslib and give users Read and Write access to the source file system directory path. For more information, see “Configuring Model Data Libraries” in SAS Viya Administration: Models.
Configuring Support for Python Code Files

To support decisions that contain custom Python code files, you must enable PyMAS package support. For more information, see “Enabling PyMAS Package Support” in SAS Micro Analytic Service: Programming and Administration Guide.

Users that are developing and testing Python code files must be added to the CASHostAccountRequired custom group. For more information, see “The CASHostAccountRequired Custom Group” in SAS Viya Administration: Identity Management and “Add or Remove Custom Group Members” in SAS Viya Administration: Identity Management.

Configuring Support for SQL Query Files

To use custom code files that contain SQL queries, you must configure SAS Micro Analytic Service support for your databases. For information, see “Database Access with DS2” in SAS Micro Analytic Service: Programming and Administration Guide.