Post-installation Tasks


After you install SAS Intelligent Decisioning 5.4, complete the following steps:

1. Configure publishing destinations.
2. (Optional) Enable performance logging.
3. Verify configuration properties.
4. (Optional) Configure access to analytic store models.
5. (Optional) Configure support for Python code files.
6. (Optional) Configure support for SQL query files.
7. (Optional) Transfer (promote) content to the new environment.
8. (Optional) Modify the casstartup_usermods.lua file to reload lookup tables.
9. Verify that permissions are correct for your site.

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.
In addition to the default `maslocal` destination, you can also configure one or more remote SAS Micro Analytic Service destinations. For more information, see "Define a Remote SAS Micro Analytic Service Publishing Destination" in SAS Intelligent Decisioning: Decision Management REST API Examples.

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.

---

Enabling Performance Logging

About Performance Logging

When performance logging is enabled, the Micro Analytic Score service records the total execution time for decisions. The service also records individual times for each node in the decisions except for branch nodes and condition nodes. Times are also logged for nodes that are inside subdecisions. The service writes these times to the SAS Micro Analytic Service log file.

Log entries can include the following information:

- **package name**
  - the name of the generated DS2 package.

- **node name**
  - the name of node that is displayed in the SAS Intelligent Decisioning user interface.
  - The log entry for the entire decision does not include the node name.

- **node ID**
  - a unique ID for each node. When multiple decisions are running simultaneously, the logging for both decisions might be interleaved in the SAS Micro Analytic Service log file. If those decisions both contain a node with the same name, you can use the node ID to identify the node.
  - The log entry for the entire decision does not include the node name.

- **total duration**
  - the elapsed time, in seconds, that it took the node or package to execute. If the number is very small, it is displayed in scientific notation such as 1.9073486328125E-6.

For example, the following log entry shows the execution time for the node named `cellPhone_demo` in the package `cellPhone_demo_0`:

```
2019-07-03T15:46:56,659 [00000008] DEBUG App.tk.SID.Perf -
Package Name: cellPhone_demo_0, Node Name: cellPhone_demo,
Node ID: cbe4d5ea-05fe-442a-a2d2-26d52d754ea, TOTAL DURATION:0.04584789276123
```

The following log entry shows the execution time for the node named `AggregatePromoPredicator` in a subdecision, for which the time is very small:

```
2019-07-03T15:46:56,615 [00000008] DEBUG App.tk.SID.Perf -
Package Name: c_VY76XRZ7GFEP3DRTS3BVA6SPLM, Node Name: AggregatePromoPredicator,
Node ID: 04200f5f-2903-44aa-90a2-156890a7fc18, TOTAL DURATION:1.9073486328125E-6
```

The following entry shows the total execution time for the `cellPhone_demo_0` package:

```
2019-07-03T15:47:01,264 [00000008] DEBUG App.tk.SID.Perf -
Package Name: cellPhone_demo_0, TOTAL DURATION:1.5830275082711
```
Enable Performance Logging

1 Create the App.tk.SID.Perf logger. This logger captures the execution times for the decision nodes. For more information, see “Create the App.tk.SID.Perf Logger” on page 3 and “SAS Micro Analytic Service Logging” in SAS Micro Analytic Service: Programming and Administration Guide.

2 Verify that the includeLoggingInGeneratedCode configuration property is turned on. When this property is on, additional LOG statements are added to the generated DS2 code. These statements write performance information to the SAS Micro Analytic Service log. For more information, see “Properties for All Environments” on page 3.

Create the App.tk.SID.Perf Logger

1 Click and select Manage Environment to switch to SAS Environment Manager.

2 Click .

3 Select All services in the View menu, and then select Micro Analytic Score service.

4 Click New Configuration. The Select Definition window appears.

5 Select logging.level. The New logging.level Configuration window appears.

6 Select DEBUG for the logging level.

7 Enter App.tk.SID.Perf for the logger name, and click Save.

8 Restart the SAS Micro Analytic Score service. For more information, see “Starting and Stopping SAS Micro Analytic Service” in SAS Micro Analytic Service: Programming and Administration Guide.

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>Definition</th>
<th>Property</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sas.businessrules</td>
<td>deleteVersions</td>
<td>On</td>
<td>Enables users who have permission to delete rule sets to delete specific versions of rule sets.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>execution.threadCount</td>
<td>4</td>
<td>Specifies the maximum number of threads that can be allocated for executing DS2 code packages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lookupStaticBinding</td>
<td>Off</td>
<td>Specifies whether published rule sets and decisions use new versions of lookup tables that were activated after the rule set or decision was published. When this property is set to On, the content of the active version of the lookup table is included in the code that is generated by SAS Intelligent Decisioning. Newly activated versions of lookup tables are ignored. Important If you publish objects that use lookup tables to a Teradata or Hadoop destination, or if the sas.referencedata.publish.lookupDisableMasPublish configuration option is set to On and you publish objects that use lookup tables to SAS Micro Analytic Service destinations, then set this option to On. In both of these cases, code that is generated for these destinations works correctly only when lookup tables are included in the generated code. For more information, see &quot;Controlling Where Lookup Tables Are Activated And How They Are Used&quot; in SAS Intelligent Decisioning: User’s Guide.</td>
</tr>
<tr>
<td>jvm</td>
<td>java_option_xmx</td>
<td>-Xmx512m</td>
<td>Specifies the JVM heap size of the Business Rules, Decisions, and Model Publish services. TIP You might need to increase the heap size if you are importing very large lookup tables.</td>
</tr>
</tbody>
</table>

TIP
- You might need to increase the heap size if you are importing very large lookup tables.
<table>
<thead>
<tr>
<th>Definition</th>
<th>Property</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sas.decisions</td>
<td>deleteVersions</td>
<td>On</td>
<td>Enables users who have permission to delete decisions to delete specific versions of decisions.</td>
</tr>
<tr>
<td>execution.threadCount</td>
<td></td>
<td>4</td>
<td>Specifies the maximum number of threads that can be allocated for executing DS2 code packages.</td>
</tr>
<tr>
<td>includeLoggingInGeneratedCode</td>
<td></td>
<td>On</td>
<td>Enables all logging, including performance logging, for decisions that are running in the Micro Analytic Score service. For more information, see “Enabling Performance Logging” on page 2.</td>
</tr>
<tr>
<td>taskExecutor.maxThreadsPerRequest</td>
<td></td>
<td>4</td>
<td>Specifies the maximum number of threads that can be used for processing requests.</td>
</tr>
<tr>
<td>taskExecutor.minItemsPerThread</td>
<td></td>
<td>5</td>
<td>Specifies the minimum number of items that can be processed inside the same thread.</td>
</tr>
<tr>
<td>sas.microanalyticservice.system</td>
<td>historyscheduler</td>
<td></td>
<td>Controls the extraction and publishing of subject contact history records. For information, see “historyscheduler” in SAS Micro Analytic Service: Programming and Administration Guide.</td>
</tr>
<tr>
<td>asynchronousexecution</td>
<td></td>
<td></td>
<td>Controls asynchronous communication between the SAS Micro Analytic Service and the subject contact service. For more information, see “asynchronousexecution” in SAS Micro Analytic Service: Programming and Administration Guide.</td>
</tr>
<tr>
<td>Definition</td>
<td>Property</td>
<td>Default</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>sas.referencedata</td>
<td>deleteVersions</td>
<td>On</td>
<td>Enables users who have permission to delete lookup tables to delete specific versions of lookup tables.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>publish.lookupDisableMasPublish</td>
<td>Off</td>
<td>Specifies whether lookup tables are automatically activated in SAS Micro Analytic Service publishing destinations. If this option is set to On, then lookup tables are not automatically activated in SAS Micro Analytic Service destinations, and lookup tables must be included in the generated code for rule sets and decisions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IMPORTANT If you set this option to On and you are publishing rule sets or decisions that use lookup tables to SAS Micro Analytic Service destinations, then you must also set the configuration option sas.businessrules.lookupStaticBinding to On.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>For more information, see “Controlling Where Lookup Tables Are Activated And How They Are Used” in SAS Intelligent Decisioning: User’s Guide.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sas.referencedata.casformats</td>
<td>backupLibrary</td>
<td>Formats</td>
<td>Specifies the CAS library in which to store a backup of the formats library that is identified in the formatsLibrary property. See also “Properties for Multi-tenancy Environments” on page 7.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>formatsLibrary</td>
<td>userformats3</td>
<td></td>
<td>Specifies the name of the formats library that contains the CAS formats that are associated with production lookup tables. If you change this property, and you have modified the casstartup_usermods.lua file to automatically reload lookup tables, you must update the casstartup_usermods.lua file. For more information, see “Reloading Lookup Tables When CAS Is Restarted” on page 10,See also “Properties for Multi-tenancy Environments” on page 7.</td>
</tr>
<tr>
<td></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 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**. For more information, see “Reloading Lookup Tables When CAS Is Restarted” on page 10 and the description of the Formats property in Table 1 on page 4.

6. In the **formatsLibrary** field, enter **userformats3**. For more information, see “Reloading Lookup Tables When CAS Is Restarted” on page 10 and the description of the formatsLibrary property in Table 1 on page 4.

7. Click **Save**.
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/modelsvr/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 Data Query Files

To use custom code files that contain data queries, you must configure SAS Micro Analytic Service support for your databases. You can supply the database connection string in code, but SAS recommends that you supply it by using the sas.microanalyticservice.service.connectionstring property for the Micro Analytic Score service in SAS Environment Manager. For information, see “Database Access with DS2” in SAS Micro Analytic Service: Programming and Administration Guide.
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 5.4 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*
- “dcmtransfer Plug-in” 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 or from SAS Intelligent Decisioning 5.3 to SAS Intelligent Decisioning 5.4 on SAS Viya, use the SAS Viya promotion process. For more information, see *SAS Viya Administration: Promotion (Import and Export)*.

When you use the SAS Viya transfer CLI to transfer objects from one environment to another, all of the content is transferred except for notes that are associated with specific versions of the objects. For more information, see “Transferring Version Comments” in *SAS Intelligent Decisioning: Command-Line Interfaces*.

**IMPORTANT** After lookup tables and treatment groups are transferred to a new environment, you must activate them in the new environment. Alternatively for lookup tables, you can transfer the formats data on SAS Cloud Analytic Services (CAS). For more information, see “Activating Lookup Tables” in *SAS Intelligent Decisioning: User’s Guide* and “Activate a Treatment Group” in *SAS Intelligent Decisioning: User’s Guide*.

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 that are in a folder, you can transfer the folder. To transfer test definitions and test results that were not saved in a folder, you must list the URI for each definition and results table in the transfer request.
(Beginning with SAS Intelligent Decisioning 5.3, you can save test definitions and test results in a folder.)

Output tables in 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.

---

## Reloading Lookup Tables When CAS Is Restarted

Whenever SAS Cloud Anlaytic Services (CAS) is restarted, you must either manually reactivate lookup tables, or you must enable them to be reloaded automatically when the `casstartup_usermods.lua` file is invoked. To enable the lookup tables to be reloaded automatically, add the following lines to the `casstartup_usermods.lua` file:

```
s:sessionProp_addFmtLib
{caslib="Formats",fmtLibName="userformats3",name="userformats3.sashdat",promote=true}
newFmtSearch = " userformats3"
newFmtSearch = ((cas.fmtsearch or "") .. " " .. newFmtSearch)
s:configuration_setServOpt
{fmtsearch=newFmtSearch}
```

These lines add the USERFORMATS3 library to the formats search path.

---

**Note:** The values that are specified for the CAS library and format library must match the values that are specified for the Formats and formatsLibrary configuration properties. For more information, see “Properties for All Environments” on page 3 and “Properties for Multi-tenancy Environments” on page 7.

---

For more information, see “Using the Casstartup_usermods.lua File” in SAS Viya Administration: Data and “Persisting User-Defined Formats across Server Restarts” in SAS Viya Administration: Data.

---

## 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:

- “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 12.

The default permissions for SAS Intelligent Decisioning are described in “Default Permissions” on page 11.

Default Permissions

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

- create rule sets, lookup tables, treatments, treatment groups, code files, and decisions
- update and delete any rule set, lookup table, treatment, treatment group, code file, or decision that they created
- delete a specific version of a rule set, lookup table, or decision if they have Delete permission for the object
- activate any lookup table or treatment group that they created
- publish any rule set, decision, or model that they created
- run a publishing validation test for any rule set, 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 12.

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 13
- 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 12
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 13. 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, treatment groups, code files, and subdecisions 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 12 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 That Were Created in SAS Intelligent Decisioning 5.3 or 5.4

When you create a new rule set test or decision test in SAS Intelligent Decisioning 5.3 or 5.4, 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 12.

Note: You can control access to rule set tests and decision tests in SAS Intelligent Decisioning 5.4 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 That Were Created in SAS Decision Manager 5.1 or 5.2 on SAS Viya

In SAS Decision Manager 5.1 and 5.2, 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 13.

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/ruleSets</td>
<td>Create, read, update, and delete rule sets. Create and delete versions of rule sets. Generate SAS code for rule sets.</td>
</tr>
<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>Object URI</td>
<td>Permissions That Can Be Granted</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</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 and delete 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. Publish content to the specified destination, and read published content in the specified destination.</td>
</tr>
<tr>
<td>/referenceData/domains</td>
<td>Create, read, update, and delete lookup tables. Create and delete versions of 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>

### 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 3 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
“scoreexecution Plug-in” in *SAS Intelligent Decisioning: Command-Line Interfaces* for more
information.