SAS® Infrastructure for Risk Management 3.5: User’s Guide
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Chapter 1

Introduction

Product Overview

SAS Infrastructure for Risk Management is a high-performance job execution engine with a web-based user interface and a programming interface.

SAS Infrastructure for Risk Management solutions are delivered as industry-specific content releases that are downloaded and installed after SAS Infrastructure for Risk Management is installed. The calculations that make up the solution content releases are performed using job flows. Alternatively, SAS Infrastructure for Risk Management can be ordered as a stand-alone product, which SAS programmers can use as a programming interface that enables them to easily create parallel programs that run on the SAS Infrastructure for Risk Management platform. For more information about SAS Infrastructure for Risk Management programming, see SAS Infrastructure for Risk Management: Programmer’s Guide.

The SAS Infrastructure for Risk Management platform is designed to be customizable and flexible. The architecture of SAS Infrastructure for Risk Management provides a simplified way to develop and run the fastest analytics.

Common SAS Infrastructure for Risk Management Web Application Functions

For more information about the concepts and elements of the functions that you can perform using the SAS Infrastructure for Risk Management web application, see “Elements Of SAS Infrastructure for Risk Management”.

SAS Infrastructure for Risk Management solutions provide predefined job flow definitions that you can use to perform calculations. You use the SAS Infrastructure for
Risk Management web application to create, manage, and execute job flow instances of the job flow definitions.

Some of the common functions that you perform when working with job flows in the SAS Infrastructure for Risk Management web application include the following:

• Create an instance of a job flow that you want to run for a specific entity, base date, or configuration set.

  An instance consists of underlying flows (subflows). To view the underlying flows that are a part of an instance, double-click the instance in the instance list view. Each flow consists of one or more tasks. A task is a pre-constructed analytical or reporting-oriented element of processing that has defined input and output.

• Enable debug logging for an instance to obtain more information about the execution of the tasks in an instance.

• Edit the values of variables of a data set as needed when creating a job flow instance.

• Edit the properties of an existing job flow instance.

• Share and publish instances to allow other users to view the instances that you create.

• Filter the list of instances by specific attributes and values.

• Customize the instance list view by adding or removing columns, sorting columns, and saving the view for future use.

• View the tasks that are a part of an instance, view the input and output files of a specific task, and modify an input file of a task.

• Access task-level documentation.

Note: The SAS Infrastructure for Risk Management web interface is self-explanatory. This document provides a high-level overview of the user interface and how to use it to complete basic functions.

What’s New In SAS Infrastructure for Risk Management 3.5

SAS Infrastructure for Risk Management 3.5 provides the following new features and enhancements:

• additional actions, including the following abilities:
  • place a job flow instance in pause mode
  • change the ownership of a single job flow instance or multiple job flow instances
  • improved performance by stopping all tasks that are in progress when a running job flow instance is canceled
  • support for a configurable URL in output data objects

About This Book

SAS Infrastructure for Risk Management is designed for the following users:
• the power user or administrator who is responsible for processing and modeling data marts and developing base analysis configurations and reports
• the analyst who is responsible for configuring analyses and developing reports
• the business user who needs to generate and access regulatory reports
• the executive who is charged with oversight of regulatory compliance
• programmers who are responsible for the content development or are responsible for creating parallel programs

The scope of this guide is primarily limited to tasks that analysts and business users are likely to perform through the web-based user interface.

For detailed information about administrative tasks, such as product installation, customization, configuration, assignment of roles and permissions to users, and data management, see *SAS Infrastructure for Risk Management: Administrator’s Guide.*

For information about SAS Infrastructure for Risk Management content development, see *SAS Infrastructure for Risk Management 3.5: Programmer’s Guide.*

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**Recommended Reading**

• *SAS Infrastructure for Risk Management: Administrator’s Guide*—Provides information about administrative tasks such as product installation, customization, configuration, assignment of roles and permissions to users, and data management.

Before You Begin

Before you begin using the SAS Infrastructure for Risk Management web application, note the following:

- The sections in this chapter provide a high-level overview about the end-user actions that you can perform from the SAS Infrastructure for Risk Management web application.
• You can perform many of the same actions from more than one location in the web application.

• By default, all job flow instances are automatically executed when you create or edit an instance. The exceptions to this rule are if you rename an instance or if you change its description so that the instance is not triggered to rerun. To disable automatic execution, select Manual execution when you create or edit a job flow instance.

• The tasks that are documented in this chapter begin at the instance list view. The instance list view is the SAS Infrastructure for Risk Management web application product home page.

### Instance List View

• You can arrange the order in which columns appear on the instance list view by dragging and dropping the columns next to the column name. In addition, you can click ![Manage columns](image) in the header of the list of instances table and select Manage columns to rearrange and choose columns that you want to display or hide.

• The Status column reports the execution-related status of an instance. Possible values are as follows:

<table>
<thead>
<tr>
<th>Table 2.1 Instance List View Status Icons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icon</td>
</tr>
<tr>
<td>☑</td>
</tr>
<tr>
<td>☒</td>
</tr>
<tr>
<td>🔄</td>
</tr>
<tr>
<td>🔒</td>
</tr>
<tr>
<td>⚪</td>
</tr>
<tr>
<td>⚫</td>
</tr>
</tbody>
</table>

• If any values in an input data object for a task have changed, the Modified column displays ![Modified](image).

• The icons that appear in the State column indicate the state of a job flow instance.
Table 2.2  Instance State Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>The instance is published for others to view. A published instance cannot be modified or run by other users.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The instance is shared with other users.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>The instance is shared with you, but you cannot run or modify it.</td>
</tr>
</tbody>
</table>

Note: Instances with no icons are your private instances.

- If an instance is read-only, a check mark displays in the Read Only column.

The following options are available on the main banner:

Table 2.3  Main Banner Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Icon] | Displays notifications.  
*Note: Notifications are not supported in SAS Infrastructure for Risk Management 3.5.* |
| ![Icon] | Provides access to documentation and information about the SAS Infrastructure for Risk Management deployment. |
| username | Provides access to product-level settings, accessibility, language, and them settings, and the option to sign out. |

The following options are available on the toolbar:

Table 2.4  Toolbar Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>Creates an instance of a job flow definition.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Displays the results for the selected instance.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Opens the Edit instance window from where you can change the name and description of an instance and modify its input data object.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Refreshes the list of instances.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Displays the View dialog box from where you can change the instance list view.</td>
</tr>
</tbody>
</table>
Option | Description
--- | ---
... | Displays a menu from where you can choose to share, unshare, publish, open, run, cancel the execution, or delete the selected instance. In addition, you can save the current view and if you have certain permissions, you can change the ownership of an instance or list of instances.

---

**Customize the Instance List View**

- To reorder columns, click the column heading and drag and drop it in the preferred column position.

- To prevent a column from being dragged and dropped, right-click the column heading and select **Freeze**. The column is moved to the far left side of the table, and you can scroll through the list of instances without scrolling that column. To release the column, right-click and select **Unfreeze**.

- To manage the columns that are displayed:
  1. Click to the right of the column headings, and select **Manage columns**.
  2. In the Manage Columns window, you can move columns between the **Hidden columns** list and the **Displayed columns** list. In addition, you can reorder the columns as appropriate using the up and down arrows on the far right.
  3. Click **OK**.

- To sort the list of instances by a specific column, right-click a column heading.
  1. Select **Sort (ascending)** or **Sort (descending)**.
  2. To create a secondary sort column, right-click a different column and select **Sort to Add to sort (ascending)** or **Sort to Add to sort (descending)**.
  3. To remove sorting, right-click a sorted column and select **Sort to Remove sort**.

  *Note*: Selecting a new column on which to sort removes all previous sorting selections.

- To save the current instance list view:
  1. Click on the toolbar and select **Save current view**. The Save View window is displayed.
  2. Enter a unique name for the view and click **Save**.

  When you create and save a new instance list view, it becomes the default initial view.

- To manage saved views, click . The View window is displayed.
  - The current default initial instance list view is denoted by a circle to the left of its name.
  - To use a view, select it.
  - To delete a view, click to the right of the view.
• To display a view that contains all available columns, click Full View. To display only the columns that you selected in the Columns window, click Compact View.

Create an Instance

1. Click . The New Instance window is displayed.

2. Enter a unique name (across all instances and users) for your job flow instance in the Instance field.

3. (Optional) Enter a description of the instance in the Description field.

4. (Optional) To enable debug logging, select Debug logging.
   Debug logging delivers a detailed level of logging about the execution of the tasks of an instance to the task logs. You can use this information for troubleshooting issues.

5. (Optional) To configure a job flow instance to not automatically execute after you create it, select Manual execution. When you select Manual execution, the instance is paused until you manually execute it. Select the instance in the instance list view, click , and select Run. This option enables you to create a job flow instance and make changes to it without automatically executing it (the default).

6. In the Base date field use the drop-down menu to select a base date for which to perform the calculation.

Alternatively, you can click Select to filter dates. On the Select Base Date dialog box, you can perform the following actions:

<table>
<thead>
<tr>
<th>Click</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Expand all]</td>
<td>Display the values for all of the base date attributes. Click the box next to a value to select or deselect a value.</td>
</tr>
<tr>
<td>![Collapse all]</td>
<td>Hide the values for all of the base date attributes.</td>
</tr>
<tr>
<td>![Expand]</td>
<td>Display the values for a specific base date attribute (year, month, or day). Click to select or deselect a value.</td>
</tr>
<tr>
<td>![Collapse]</td>
<td>Hide the values for a specific base date attribute (year, month, or day).</td>
</tr>
<tr>
<td>Reset all</td>
<td>Clear all of the values that you selected for all of the base date attributes.</td>
</tr>
<tr>
<td>Reset</td>
<td>Clear all of the values that you selected for a specific base date attribute.</td>
</tr>
</tbody>
</table>

All base dates that match the attribute values that you select appear on the right side of the dialog box. Click the box next to a value to select or deselect it. The number of base dates that exist within that year, month, or day display to the right of each value in a blue circle ( ).
Note: If you select a base date for which there is no input available, an error message is generated and SAS Infrastructure for Risk Management cannot create the instance.

7. Select an entity from the Entity drop-down menu or click Select to the right of the Entity field to display a hierarchical list of entities from which you can search for and select an entity.

8. To specify whether to treat the entity as a solo entity or as a group entity, click Solo or Group.

Note: The Solo or Group entity configuration option applies only to specific SAS Infrastructure for Risk Management federated content.

9. Select a configuration from the Configuration menu. Configuration sets contain parameters and settings for your job flow instance calculation. Your administrator provides you with one or more configuration sets.

10. Select a category from the Category menu. Job flows are assigned to categories to simplify the management of the job flows.

11. From the Flow menu, select a job flow definition. When you select a flow, the federated area to which the job flow definition belongs displays to the right of the Flow field. To display documentation for the federated area, click the federated area.

12. To select input data, click Show Inputs ⇒ Load Data Sets and select from the list of the data sets that display under Data Sets.

13. (Optional) To create multiple new instances in a row without having to repopulate all of the fields in the New Instance window, select Create another, and click Create. When you create your last new instance, deselect Create another and click Create.

Open an Instance

Note: If viewing an instance that a user has shared with you, click after opening the instance to ensure that you are viewing the most current version of that instance.

1. Double-click the instance. The job flow instance is displayed.

2. In the opened job flow instance, you can perform the following functions:
   • To facilitate navigating large job flow instances, you can zoom in to an area of an instance. To zoom in to an area of an instance, press Shift and click and drag the box over the area in to which you want to zoom. To toggle between the views, press Shift + Z.
   • To display information about a task in an instance, place the cursor on the task. This information includes the name and purpose of the flow and the federated area with which it is associated. In addition, you can place the cursor on input data for a task to view the name of the input data and place the cursor on the output to view the name of the output.

Note: A job flow can contain tasks that are located in different federated areas. Therefore, the ability to display information about the task, including the federated area with which it is associated, is helpful troubleshooting information.
To search for an object in the job flow instance (for example, subflow, input, output, and so on) that is used by the instance, click \( \text{🔍} \). To return to the job flow instance diagram, click \( \text{🔍} \).

For more information about searching for objects, see “Search for Objects Used by an Instance”.

Using the toolbar of the open job flow instance, you can perform the following functions:

**Table 2.6  Job Flow Instance Toolbar Options**

<table>
<thead>
<tr>
<th>Click</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Refresh" /></td>
<td>Refresh the job flow instance.</td>
</tr>
<tr>
<td><img src="image" alt="Run" /></td>
<td>Run the job flow instance.</td>
</tr>
<tr>
<td><img src="image" alt="Toggle Manual Execution" /></td>
<td>Toggles between manual execution of an instance or automatic execution when changes are made.</td>
</tr>
<tr>
<td><img src="image" alt="Options Menu" /></td>
<td>Display a menu from which you can choose additional options to perform on the open instance.</td>
</tr>
</tbody>
</table>

On the right side of the window, there is additional information about the instance, including its status, configuration (details), results, and errors.

### Manually Run an Instance

After you create an instance, SAS Infrastructure for Risk Management automatically executes the instance unless you selected **Manual execution** when you created the instance. To manually run an existing instance:

1. Select the check box to the left of the instance.
2. Click \( \text{🔍} \) on the toolbar and select **Run**.

### Cancel the Execution of an Instance

To cancel a job flow instance during its execution:

1. Select the check box to the left of the instance.
2. Click \( \text{🔍} \) on the toolbar and select **Cancel execution**.

*Note:* When you cancel the execution of a job flow instance, SAS Infrastructure for Risk Management immediately stops any tasks that are in the process of being executed.
Manual Execution of an Instance

When you create or modify an instance, by default SAS Infrastructure for Risk Management automatically executes that instance unless you select Manual execution. You can enable Manual execution when you create an instance, or you can enable it while editing an existing job flow instance. When you enable manual execution, the job flow instance does not run until you manually execute it or until you disable manual execution. When manual execution is enabled, you can create job flow instances and modify existing job flow instances without the instance automatically executing.

To pause the automatic execution of an instance:
1. Select the check box to the left of the instance.
2. Click \( \text{on the toolbar.} \)
3. Select Manual execution and click Save.

Note: When Manual execution is enabled, a job flow instance will not execute unless you manually execute the instance or disable the Manual execution option.

Edit an Existing Instance

1. Select the check box to the left of the instance and click \( \text{. The Edit job flow instance window is displayed.} \)
2. You can edit the following elements of an existing instance:
   - Enter a new name and a new description in the Instance field and the Description field.
   - Edit the values of specific input data sets when creating a job flow instance, click Show Inputs.
     1. Under Data Sets, click Load Data Sets and select the data set for which you want to edit values. The values for the data set are displayed in table format to the right.
     2. As necessary, modify the value of the data set variables.
3. Click Save.

Note: Renaming an instance or changing its description does not trigger the instance to rerun.

Manage an Instance

1. Select the instance and click \( \text{ on the toolbar.} \)
2. Select from the following options:
Table 2.7  Manage Instances Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share</td>
<td>Shares the instance with users of the same entity. (Active only when you are the owner of the instance.)</td>
</tr>
<tr>
<td>Unshare</td>
<td>Unshares the instance. (Active only when you are the owner of the instance.)</td>
</tr>
<tr>
<td>Publish</td>
<td>Publishes the instance for other users to see, but they cannot run or modify the instance. (Depending on the capabilities that are assigned to you by your administrator, this option might not be active.)</td>
</tr>
<tr>
<td>Open</td>
<td>Opens the instance.</td>
</tr>
<tr>
<td>Run</td>
<td>Executes the instance. (Active only when you are the owner of the instance.)</td>
</tr>
<tr>
<td>Cancel execution</td>
<td>Cancels the execution of the instance. (Active only when you are the owner of the instance and the instance is running.)</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes the instance. (Active only when you are the owner of the instance.)</td>
</tr>
<tr>
<td>Change owner</td>
<td>Changes the owner of an instance. (This option appears only when you are assigned certain capabilities and if the instance has not been published.)</td>
</tr>
</tbody>
</table>

Note: The options that are available for you to choose vary depending on the job flow instance that you selected.

Enable or Disable Debug Logging for an Instance

1. Open the instance.
2. Click on the toolbar.
3. To turn on debug logging, select Enable debug. To turn off debug logging, deselect Disable debug.
4. To view any errors that occurred when the instance was executed, click Task Errors.

Note: Alternatively, you can enable debug logging when you care create an instance. By default, debug logging is disabled.

Share and Publish Instances

1. Select one or more instances.
2. Click  † on the toolbar and select **Share** to share one or more instances with other users of the same entity.

3. Click  † on the toolbar and select **Publish** to enable other users to see, but not to run or modify an instance.

*Note:* The actions that you can perform (for example, publish an instance, delete a published instance, or change the owner of an instance) are determined by the capabilities that are assigned to you by your administrator. For more information about capabilities, see *SAS Infrastructure for Risk Management: Administrator’s Guide*.

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**View the Results of an Instance**

1. Select the instance.

2. On the toolbar, click ![image](https://example.com/image.png).

3. In the Results dialog box, click on the results that you want to view.

*Note:* Alternatively, you can view the results for an instance by opening the instance and selecting **Results** on the right side of the window.

---

**Filter Instances**

1. Click ![image](https://example.com/image.png) on the main banner.

2. The Filters pane lists the values for one or more attribute names on which you can filter the list of job flow instances.

   - Click ![image](https://example.com/image.png) to expand the list of values for all attribute names. Click ![image](https://example.com/image.png) to collapse the list of values for all attribute names.
   - Beside each value for an attribute, the number of instances that have that value is displayed in a blue circle.
   - Use the scroll bar on the right of the Filters pane to scroll through the list of attributes and the values for each attribute.

3. Select the attribute values that you want to use to filter the list of instances.

   As you select attributes, the list of instances in the table on the right side of the window displays only those instances that match the filter. The attributes of the filter are listed as buttons on the toolbar at the top of the instance list view. These buttons are known as *facets*.

4. To clear the values that you selected for an attribute, click **Reset** to the right of the attribute name.

   To clear the all of the values that you selected for all attribute names, click **Reset all**.

5. Click ![image](https://example.com/image.png) to return to the instance list view.
**Search for Objects Used by an Instance**

You can search for tasks, subflows, and inputs and outputs that a job flow uses.

1. Open the instance.
2. Click  
3. In the **Search** field, enter the name of the object that you want to search for. To search within folders, select **Search within folders**.
4. Alternatively, you can select a value or values for an attribute name in the Filter Nodes pane.
   The Filters Nodes pane lists the values for one or more attributes on which you can filter the list of objects used in a job flow instance.
   - Click  to expand the list of values for all attribute names.
   - Click  to collapse the list of values for all attribute names.
5. Select the attribute values that you want to use to filter the list objects.
   As you select objects, the list of objects in the table on the right side of the window displays those objects in the instance.
6. As you select objects in the Filter Nodes pane, a table in the center pane lists where the object is used.
   - To expand or collapse an object in the table, click the arrow to the left of its name. You can drill down to view the inputs and outputs for a task within a subflow.
   - To filter the tasks, select an attribute from the Filter Nodes pane and click  .
   You can filter by execution status or type of object (for example, input file, modified input files, output file, tasks, and so on).
   - The facets of your filter are included on the toolbar. To remove a facet from your filter, click  .
   - To return to the hierarchy view, click  .
   - To expand the list of subflows and tasks in the table, click  . To collapse the list of tasks, click  .

**Change the Owner of an Instance**

When changing the owner of a single instance or multiple instances, note the following:

- You must have the correct permissions.
- You have not selected a published job flow instance.
The owner of an instance might not have changed for several reasons. Examples include the user that you selected already owns the instance, or the instance was deleted.

If you do not have the correct permissions or if you have selected a published job flow instance, the Change Owner option is unavailable.

To change the owner of one or more instances:

1. Select the check box to the left of the instance or instances.
2. Click \( \Box \) on the toolbar and select Change Owner. The Change Owner dialog box is displayed with a list of users. Select a new owner.
3. Select the user to whom you want to change the ownership and click OK.

### View the Inputs or Outputs of a Task

You can download and view inputs or outputs, or you can view them in SAS Studio.

**Note:** To view files in SAS Studio, ensure that your browser has been configured to allow pop-up windows.

1. Open the instance.
2. Right-click the input or output of a task and select the way that you want to view the input or output.

   **Input options:**
   - Open in SAS Studio
   - Download

   **Output options:**
   - Open in SAS Studio
   - Download
   - Open URL

   **Note:** You do not have the option of downloading or opening partitioned data objects (inputs and outputs) until those partitioned data objects have been recombined.

   **Note:** If no inputs or outputs appear to be associated with the tasks in an instance, ensure that the files are not hidden. To display the inputs and outputs, click \( \Box \) in the instance view.

### Edit the Input Data Object of a Task

\( \Box \) identifies inputs that you can edit.

1. Open the instance.
2. Right-click the input and select Download. Make changes as necessary.
3. When you have completed your changes and saved your changes, right-click the filename of the input and select **Upload**. To navigate to the version of the file that you edited, click **Browse**.

4. Select the edited version of file and click **Upload**.

   A flow that contains input that has been edited is identified with in the instance list view.

*Note:* When you modify a table, the change applies to each task that uses the table as input. Meaning, if you change a value in Table A for Task 1, and Table A is also used as input for Task 2, the change applies both tasks. The last version of the uploaded table takes precedence over previous versions of the table.

---

**View a Task Log**

Logs contain information about the execution of a task.

1. Open the instance for which you want to view task logs.

2. Drill down to the task or tasks for which you want to view the log.

3. To open the log, double-click the task or right-click and select **Show Log**.

*Note:* If a show log option is not available, click to run the job flow instance. In addition, if double-clicking a task does not display the log, ensure that your browser has been configured to enable pops-ups.
Appendix 1

Elements of SAS Infrastructure for Risk Management

Base Dates

The list of base dates identifies the dates for which data has been provided. Base dates are used as a basis for the calculations. When creating a job flow instance, only specific base dates can be selected.

Categories

Categories are groups to which flows are assigned. SAS Infrastructure for Risk Management solution content provides flows that are designed to produce quantitative reports for regulatory requirements. To simplify management of these flows, each flow is assigned to a category. The displayed categories depend on the details of your federated content.

Configuration Sets

Configuration sets are collections of data sets that are used when running instances.

Note: The creation and management of configuration sets is an administrative function.

Debug Logging

Debug logging enables you to view information about the execution of the tasks of an instance. You can enable debug logging when you create an instance or you can enable or disable logging for an existing instance. (See “Enable or Disable Debug Logging for an Instance”.)

Entities

Entities are logical groupings of your corporate structure. An entity can be the entire company, one or more subsidiaries, a geographical region, a specific business unit, and so on. The analyses that you perform are associated with an entity.

Note: Entity creation and management is an administrative function.

Flows

Flows are programs that contain two or more tasks. Instances are flows with a specific set of inputs. Some of the flows contain tasks that are also flows. This facilitates reuse of common flows.
A generic sample federated area is installed with SAS Infrastructure for Risk Management. This federated area contains sample flows that demonstrate the capabilities and functionality of SAS Infrastructure for Risk Management. For details about the sample flows, see the task-level help.

**Instance List View**

The instance list view consists of the following elements:
- the columns that are visible
- the sequence of the columns
- the sorting of the columns
- frozen columns
- attributes for filtering

**Job Flow Definitions**

A job flow definition is the specification of the tasks and subflows that make up the job flow.

**Job Flow Instances**

A job flow instance is a single occurrence of a job flow definition. An instance is associated with an entity, has a specified base date, and contains defined input data from a configuration set. By default, all job flow instances are private until shared or published.

**Subflows**

A subflow is a job flow definition that is contained within another job flow definition. These job flows are denoted by a +. To view the subflows, double-click the job flow.

**Tasks**

Tasks are the basic building blocks of SAS Infrastructure for Risk Management. They are pre-constructed analytical or reporting-oriented elements of processing that have a defined input or output, or both.

When working with tasks, note the following:
- To view the log file or help for a task, right-click the task and select an option from the pop-up menu. The log file opens in a new browser window. The log file reports the name of the instance and the name of the associated task.
  
  *Note: Log files are created only when the instance is run.*

- Tasks can have input and output data. Inputs are displayed above the task, and are connected with an arrow pointing to the task. Outputs are displayed below the task with arrows leading from the task. A task requires either a defined input or a defined output, but not both.

- Some tasks can have some input and output SAS data sets and files that are partitioned. Partition tasks enable large amounts of data to be partitioned into smaller
units of data and calculated across multiple cores. The task recombines the results of
the partitioned data.

- Identifies input files that you can edit.

When you modify an input file, the change applies to each task that uses the file as
input. For example, if you change a value in Table A for Task 1, and Table A is also
an input file for Task 2, the change applies to both tasks. The last version of the
uploaded table takes precedence over previous versions of the table.

Note: Some input files are not editable. In general, an input file is not editable
because it is an output from a subflow or another task.

- To open sub-tasks, double-click the parent task.
- To explore the files that are associated with a task, double-click the parent task.
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