

Oracle Financial Services Scheduler Service

User Guide

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ORACLE
Financial Services

OFS Scheduler Service User Guide

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1

Preface

This preface provides information for the Oracle Financial Services Scheduler Service User Guide.

Topics:

- [Access to Oracle Support](#)
- [Audience](#)
- [Conventions Used](#)
- [Acronyms](#)

1.1

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit:

- <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info>
- <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

1.2

Audience

This document is intended for the system administrators and users configuring the Scheduler Service.

1.3

Conventions Used

The following table lists the conventions used in this guide.

Table 1: Conventions Used in this Guide

Convention	Meaning
<i>Italics</i>	<ul style="list-style-type: none">• Names of books, chapters, and sections as references• Emphasis
Bold	<ul style="list-style-type: none">• The object of an action (menu names, field names, options, button names) in a step-by-step procedure• Commands typed at a prompt• User input
Monospace	<ul style="list-style-type: none">• Directories and subdirectories• File names and extensions• Process names• Code sample, including keywords and variables within the text and as separate paragraphs, and user-defined program elements within the text

Convention	Meaning
Hyperlink	Hyperlink type indicates the links to external websites, internal document links to sections.

1.4 Acronyms Used

The following table lists the acronyms used in this guide.

Table 2: Acronyms Used in this Guide

Conventions	Description
BA	Business Analysts
Infodom	Information Domain
Navigation Tree Menu or Navigation Menu	Left-hand side menu
OFS AAI	Oracle Financial Services Analytical Application Infrastructure
OFSAA	Oracle Financial Services Analytical Applications
OFS MMG	Oracle Financial Services Model Management and Governance
Production Infodom	Production Information Domain
Sandbox Infodom	Sandbox Information Domain
SA	System Administrator
URL	Uniform Resource Locator
UI	User Interface

2 Scheduler Service

2.1 Introduction

Scheduler is a service in the Infrastructure system automates behind-the-scenes work that is necessary to sustain various enterprise applications and functionalities. This automation helps the applications to control unattended background jobs program execution.

The functionalities in Scheduler facilitates you a graphical user interface and a single point of control for the definition and monitoring of the background executions.

Following are the concepts or terminologies that are involved in the job scheduler implementation:

- **Batch:** Date and time-based execution of the background tasks based on a defined period during which the resources were available for batch processing.
- **Job:** A batch job is a piece of a program meant to meet specific and business-critical functions. The program is a RESTful API used in a batch.
- **Job Dependency:** When the batch job is submitted, it is moved to the job queue until the system is ready to process. If, the job queue contains many job waiting to be processed, the system process the job based on the chronological order or by priority.
- **Schedule:** Batch jobs are used to automate the tasks that require to be performed on a regular basis but don't necessarily need to occur during the day or have an employee interacted with the system are batch schedule. Jobs that happen on a regular basis are incorporated into batch schedules.
- **Monitor:** Scheduler provide options to monitor your executions using a web-browser. It provides real-time feedback on the status of the current encoding job and lists the jobs pending in the batch. You can abort or restart the service when required.

2.2 User Roles

Following are the user roles that needs to be mapped to a user group to access various functionalities within the scheduler service.

Table 1: User Roles and their Description

Role Code	Role Name	Description
BATCH_READ	Batch Read	This role provides access to batch definition screens with view permission.
BATCH_WRITE	Batch Write	This role provides access to batch definition screens with view, write and modify permissions.
BATCH_MAINT	Batch Maintenance	This role provides access to batch definition screens with view and modify permissions.
BATCH_OPER	Batch Operation	This role provides access to batch definition screens with view, schedule and execute permissions.
BATCH_ADV	Batch Advanced	This role provides access to batch definition screens with write, modify, delete, schedule and execute permissions.

2.2.1 Components of Scheduler

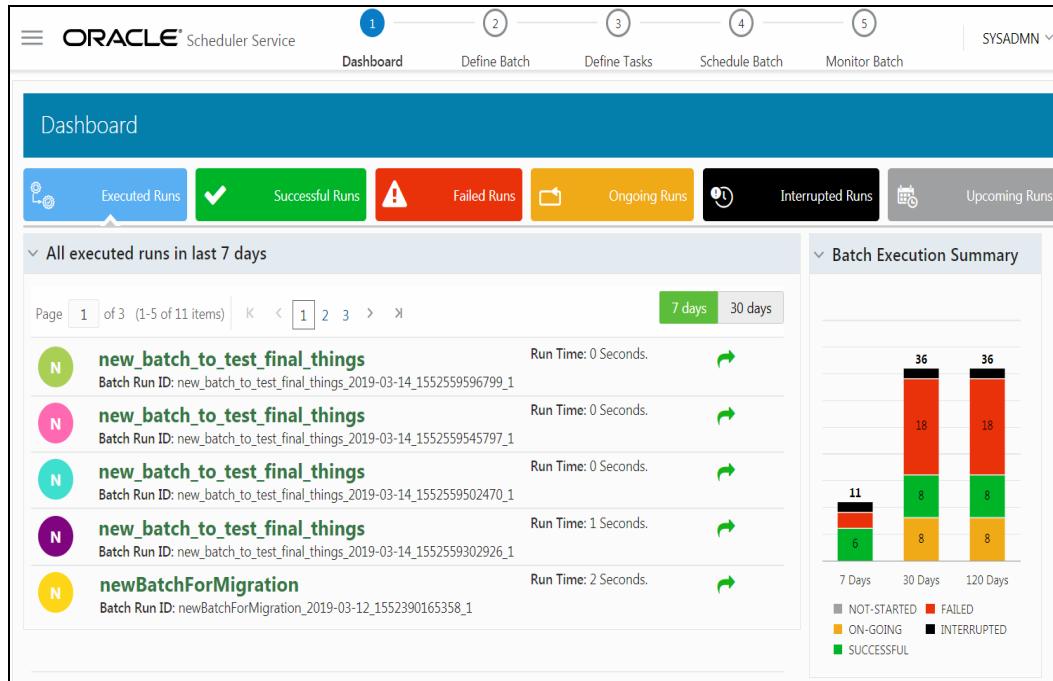
The Scheduler consists of the following modules:

- Batch Maintenance
- Batch Scheduler
- Batch Monitoring

2.2.1.1 Scheduler Landing Screen

On accessing Scheduler using your browser window, the Dashboard window is displayed.

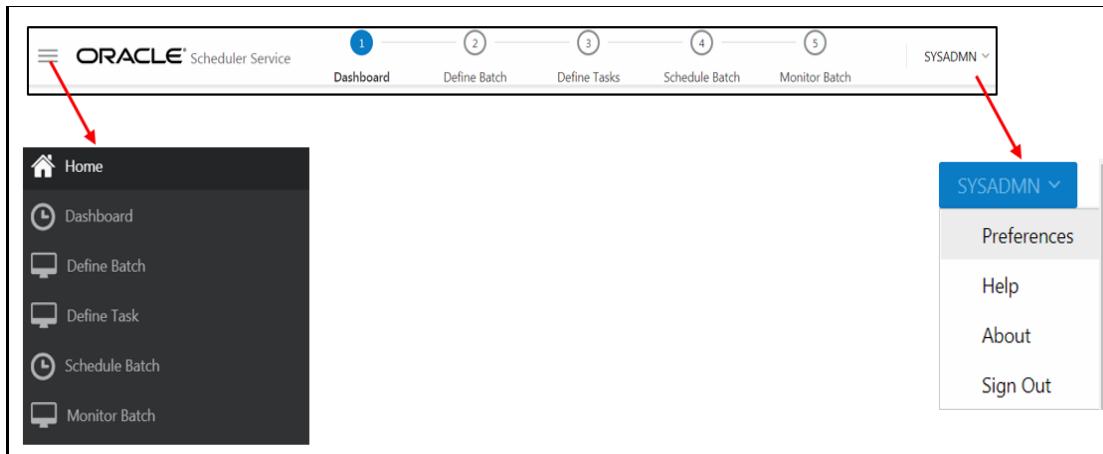
Figure 1: Dashboard window



2.2.1.1.1 Header Details

The Header Details in the Dashboard window is displayed in the following figure.

Figure 2: Header Details



2.2.2 Stages in Scheduler

Following are the stages in the Scheduled:

- Define Batch is used for creating a new batch, modifying Batch details, and deleting unwanted Batches.
- Define Task is used for creating tasks for the Batches,
- Schedule Batch is used for executing a Batch instantaneously and schedule batches.

- Monitor Batch is used to track the execution of the Batches to view the real time status.

2.3 Scheduler Dashboard

To access the Scheduler, In the Home page, select  icon, and then select Batch Administration, and then select Scheduler. On accessing the Scheduler Service using your browser window, the Dashboard window is displayed.

To view the demonstration of the Dashboard window, see the Scheduler Home page Introduction video.

Dashboard is the Landing page of the Scheduler. In this page, you can view the following details:

- Tabs such as Executed Runs, Successful Runs, Failed Runs, Ongoing Runs, Interrupted Runs, and Upcoming Runs. You can click the tabs to view the details of the Batches based on their status. For example, click Ongoing Runs to view the details of the batches which are currently running.
- The Batches that are executed in the last 7 days with details such as Batch Name, Batch Run ID, and Run Time. Click 30 days to view the batches executed for last 30 days. You can click the  icon corresponding to a Batch to monitor it.
- The Batch execution Summary pane, which displays the count of total batches executed for last 7 days, 30 days and 120 days. Additionally, you can see the separate count of successful batches, failed batches, interrupted batches, on-going batches, and the batches which are yet to start, by placing your cursor over the color given for each batch status.

2.4 Define Batch

The Define Batch window displays the details of all existing Batches like Batch ID, Batch Name, Batch Description, Last Modified By and Last Modified Date. This window allows you to create a new, edit, copy, and delete the batches.

To navigate to the Define Batch window, click Define Batch option from the Header in the Dashboard window. After selecting the batch you can select the  icon corresponding to the batch to proceed to create or edit tasks.

2.4.1 Creating a New Batch

You can create a new batch in the Define Batch window and schedule and monitor the batch that you created.

To create a new Batch, perform the following steps:

1. In the Define Batch window, click . The Create a New Batch window is displayed.
2. Specify the details as tabulated in the Create a New Batch window as described in the following table.

Table 2: Fields in the Create a New Batch window and their Description

Field	Description
Batch Details	
Batch Name	<p>The Batch Name is auto generated by the system. You can edit to specify a Batch name based on the following conditions:</p> <p>Note:</p> <ul style="list-style-type: none">• The Batch Name should be unique across the Information Domain.• The Batch Name must be alphanumeric and should not start with a number.• The Batch Name should not exceed 60 characters in length.• The Batch Name should not contain any special characters except “_”.
Batch Description	<p>Enter a description for the Batch based on the Batch Name.</p> <p>Note:</p> <p>The Batch description should be alphanumeric. The allowed special characters are_:- and <blank space>. It should not exceed 200 characters in length.</p>

Service URL Name/ Service URL

- Select the Service URL name from the drop-down list, if it is available. The Service URL is displayed in the Service URL field.
- To add a new service URL, enter a name to identify it in the Service URL Name field and enter the proper URL in the Service URL field. You can give partial URL here and the remaining URL in the Task Service URL.

3. From the Batch Parameters pane, click  to add a new Batch Parameter. By default, \$FICMISDATE\$ and \$BATCHRUNID\$ are added as Batch parameters.

TIP

Parameters whose value to be given at run time should be enclosed with \$. For example, \$paramName\$

- a. Enter the Parameter name in the Param Name field.
- b. Enter the Parameter value in the Param Value field.

You can delete a parameter by clicking  corresponding to the parameter.

4. Click Save. The new Batch is created and displayed in the Define Batch window.

2.4.2 Editing a Batch

The Edit Batch option allows you to edit the Batch details such as Batch Description, Service URL Name and Service URL and also add a new Batch Parameter.

To modify a Batch, perform the following steps:

5. In the Define Batch window, click  corresponding to the Batch you want to modify. The Edit Batch window is displayed.
6. Modify the required Batch Details. For more information, see [Creating a New Batch](#) section.
7. Click Save. The edited batch is saved and displayed in the Define Batch window.

2.4.3 Copying a Batch

The Copy Batch option allows you to copy a Batch, which you want to clone or create instances in the system from the Define Batch window.

To copy a Batch, perform the following steps:

1. In the Define Batch window, click  corresponding to the Batch you want to copy. The Copy Batch window is displayed.

2. Specify the Batch Details as you want to clone and copy the existing batch. For more information, see [Creating a New Batch](#) section.
3. Click Save. The copied batch is saved and displayed in the Define Batch window.

2.4.4 Deleting a Batch

The Delete Batch option allows you to delete a Batch, which are no longer required in the system from the Define Batch window.

To delete a Batch, perform the following steps:

4. From the Define Batch window, click  corresponding to the Batch you want to delete.
5. Click OK in the confirmation dialog to confirm deletion. If the batch has any active schedules a warning is displayed. Upon confirmation, all schedules of the batch are also deleted.

2.5 Define Tasks

The Define Tasks window displays the list of tasks associated with a specific Batch definition. You can create new tasks, edit the existing tasks or delete unwanted tasks. Additionally, you can specify task precedence for each task in Task Precedence window and click the  to Schedule the batch.

2.5.1 Adding a new Task

Adding a new task option allows you to add new tasks to a selected Batch definition.

To add new task, perform the following steps:

1. Click Define Tasks from the Header panel. The Formulate Task window is displayed.
2. Select the Batch for which you want to add new task from the Batch Name drop-down list.
3. Click . The Create a New Task window is displayed.
4. Enter the details as tabulated:

Table 3: Fields in the Create a New Task window and their Description

Field	Description
Task Details	
Task Name	<p>Enter the task name.</p> <p>Note:</p> <ul style="list-style-type: none">• The Task Name must be alphanumeric and should not start with a number.• The Task Name should not exceed 60 characters in length.• The Task Name should not contain any special characters except underscore (_).
Task Description	Enter the task description. No special characters are allowed in Task Description. Words like Select From or Delete From (identified as potential SQL injection vulnerable strings) should not be entered in the Description.
Task Type	Select the task type from the drop-down list. The options are REST, EXTERNAL API, and SCRIPT. Currently only REST is supported.
Batch Service URL	Select the required Batch Service URL from the drop-down list. This can be blank and you can provide the full URL in the Task Service URL field.
Task Service URL	Enter task service URL if it is different from Batch Service url.

5. From the Task Parameters pane, click  to add a new Task Parameter. By default, all Batch level parameters are added and enabled as task parameters. To disable, deselect the checkbox corresponding to the task parameter ()
 - a. Enter the Parameter name in the Param Name field.

- d. Enter the Parameter value in the Param Value field.

You can delete a parameter by clicking  corresponding to the parameter.

6. Click Save.

2.5.2 Defining Task Precedence

Task Precedence indicates the execution-flow of a Batch. Task Precedence value facilitates you to determine the order in which the specific Tasks of a Batch are executed.

For example, consider a Batch consisting of 4 Tasks. First 3 Tasks does not have a precedence defined and hence will be executed simultaneously during the Batch execution. But, Task 4 has precedence value as task 1 which indicates that, Task 4 is executed only after Task 1 has been successfully executed.

You can set Task precedence between Tasks or define to run a Task after a set of other tasks. However, multiple tasks can be executed simultaneously and cyclical execution of tasks is not permitted. If the precedence for a Task is not set, the Task is executed immediately on Batch execution.

To define the task precedence in the Define Task window, perform the following steps:

1. Click  button corresponding to the task for which you want to add precedence task. The Task Precedence Mapping window is displayed.
Task Precedence option is disabled if a batch has only one task associated.
 - a. Select the Task you want to execute before the current task, from the Available Tasks pane and click . You can press Ctrl key for multiple selections.
 - b. To select all the listed Tasks, click .
 - c. To remove a Task, select the task from the Selected Tasks pane and click .
 - d. To remove all the selected Tasks, click .
2. Click Save to update Task Precedence.

2.5.3 Modifying a Task

Modifying a task option allows you to modify the details of existing tasks of a Batch definition such as Task Description, Task Type, Batch Service URL and Task Service Url. You can also add a new task parameter, and enable or disable already existing task parameters.

To modify a Batch

1. From the Formulate Task window, select the Batch whose task details you want to modify, from the Batch Name drop-down list.
2. Click  corresponding to the Task whose details you want to modify. The Edit Task window is displayed.

3. Modify the required Task Details. For more information, see [Adding a new Task](#) section.
4. Click Save.

2.5.4 Deleting a Task

You can remove a task from a Batch definition which are no longer required in the system by deleting it from the Define Task window.

To delete a Task

1. From the Formulate Task window, select the Batch for which you want to delete task from the Batch Name drop-down list.
2. Click  corresponding to the Task you want to delete.
3. Click OK in the confirmation dialog to confirm deletion.

2.6 Schedule Batch

The Schedule Batch window facilitates you to run, schedule, re-start, re-run the batches in the Scheduler Service. After you upload the data in the required format into the Object Storage, you must load the data into the system using the Scheduler Service. You can schedule them to run in a required pattern and view the run time status of the scheduled services using the Monitor Batch feature.

The Schedule Batch window allows you to perform the following operation to a batch:

- [Execute a Batch](#)
- [Schedule a Batch](#)
- [Re-start a Batch](#)
- [Re-run a Batch](#)

2.6.1 Execute a Batch

The Execute batch option allows you to run a batch instantaneously. To execute a batch, perform the following steps:

1. Click Schedule Batch from the Header panel. The Schedule window is displayed.
2. Select the Batch Name from the Batch Name drop down menu. For example, AMLDataLoad.
3. Click Execute. The Execution Status Dialog Box is displayed with the Batch executed successfully message. This indicates the unique identification reference number for the batch and date of the batch execution.
4. In the Execution Status Dialog Box, click Monitor to monitor the batch.
5. If you want to exclude/include some tasks, click Exclude Tasks. For more information, see [Exclude/Include Tasks](#) section.
6. If you want to hold/release some tasks, click Hold Tasks. For more information, see [Hold/Release Tasks](#) section.
7. If you want to edit the dynamic parameters of the batch, click Edit Dynamic Parameters For more information, see

2.6.2 Schedule a Batch

You can schedule a Batch to run just for [Once](#), [Daily](#), [Weekly](#), or [Cron Expression](#) for scheduling the batches. You can also have a user defined schedule to schedule and run a batch.

2.6.2.1 Schedule Once

To schedule a Batch to run once, perform the following steps:

1. Click Schedule Batch from the Header panel. The Schedule Batch window is displayed.

2. In the Schedule Batch window, click Once.
3. Select the Batch you want to schedule for once from the Batch Name drop down menu.
4. Enter a Schedule Name.
5. Click  and select the date on which you want to run the Batch.
6. Click  and select the time at which you want to run the Batch.
7. Click Schedule.

2.6.2.2 Schedule Daily

To schedule a Batch to run daily, perform the following steps:

1. In the Schedule Batch window, click Daily.
2. Select the Batch you want to schedule daily from the Batch Name drop down menu.
3. Enter a Schedule Name.
4. Click  and select the start date from which you want to run the Batch.
5. Click  and select the end date till which you want to run the Batch.
6. Click  and select the time at which you want to run the Batch daily.
7. Click Schedule.

2.6.2.3 Schedule Weekly

To schedule a Batch to run weekly, perform the following steps:

1. In the Schedule Batch window, click Weekly.
2. Select the Batch you want to schedule weekly from the Batch Name drop down menu.
3. Enter a Schedule Name.
4. Click  and select the start date from which you want to run the Batch.
5. Click  and select the end date till which you want to run the Batch.
6. Click  and select the time at which you want to run the Batch.
7. Select the days on a week you want to run the Batch from the Select Days of the Week multi-select drop down menu.
8. Click Schedule.

2.6.2.4 Schedule Cron Expression

To run a Batch in a user-defined schedule, you can have custom schedule with the help of Cron Expression. A cron expression is a string comprised of 6 or 7 fields separated by white space. Fields can contain any of the allowed values, along with various combinations

of the allowed special characters for that field. For more information, click  icon next to the Cron Expression field.

To schedule a Batch based on Cron Expression, perform the following steps

1. In the Schedule Batch window, click Cron Expression.
2. Select the Batch you want to schedule from the Batch Name drop down menu.
3. Enter a Schedule Name.
4. Enter the Cron Expression for your schedule. For more information about the Cron Expression, click  icon next to the Cron Expression field.
5. Click Schedule.

2.6.3 Re-start a Batch

You can restart a Batch which has not been executed successfully or which has been explicitly interrupted, or cancelled, or put on hold during the execution process. By restarting a Batch, you can continue Batch execution directly from the point of interruption or failure and complete executing the remaining tasks.

To re-start a batch, perform the following steps:

6. Click Schedule Batch from the Header panel. The Schedule window is displayed.
7. From the Schedule window, select Re-start tab.
8. Select the Batch you want to re-start from the Batch Name drop down menu.
9. Select the Batch Run ID.
10. Click Re-start.

2.6.4 Re-run a Batch

You can re-run a Batch which has previously been executed. Rerun Batch facilitates you to run the Batch irrespective of the previous execution state. A new Batch Run ID is generated during the Rerun process and the Batch is executed as similar to the new Batch Run.

To re-run a batch, perform the following steps:

1. Click Schedule Batch from the Header panel. The Schedule Batch window is displayed.
2. In the Schedule Batch window, select Re-run tab.
3. Select the Batch you want to re-run.
4. Select the Batch Run ID.
5. Click Re-run.

2.6.5 Edit Dynamic Parameters

Dynamic Parameters facilitates you to the modify the dynamic parameters for the batch. You can change the param value from the Edit Dynamic Params window and save the changes to the Batch. The Edit Dynamic Parameters option is available in all the tab in the Schedule Batch window.

To edit the dynamic parameters for a batch, perform the following steps:

6. In the Schedule Batch window, click Edit Dynamic Parameters. The Edit Dynamic Params window is displayed.
7. In the Edit Dynamic Params window window, modify the values as required.
8. Click Save. The modified parameters are applied to the Batch.

2.6.6 Modifying Task Definitions of a Batch

You can modify the task definition state in the Batch Execution window to exclude or hold the defined task in a Batch from execution. The excluded tasks are therefore assumed to have completed execution and get excluded during the Batch Run.

While executing or scheduling a Batch from the Schedule Batch window, you can:

- Exclude a task or include the excluded task
- Hold a task or release the held task.

2.6.6.1 Exclude/Include Tasks

You can exclude tasks or include the excluded tasks during Batch Execution. The excluded task components are therefore executed in the normal process assuming that the excluded task have completed execution.

To exclude/include tasks, perform the following steps:

1. In the Schedule Batch window, click Exclude Tasks. The Select Tasks window is displayed.
2. To exclude tasks:
 - a. Select the required task from the Included Tasks list and click . You can press Ctrl key for multiple selections.
 - b. To exclude all tasks, click .
3. To include the excluded tasks:
 - a. Select the required task from the Excluded Tasks list and click . You can press Ctrl key for multiple selections.
 - b. To include all excluded tasks, click .
4. Click Save.

2.6.6.2 Hold/Release Tasks

You can hold tasks or release the held tasks during Batch Execution. The tasks which are on hold along with the defined components are skipped during execution. However, at least one task should be available in a Batch without being held/excluded for Batch execution.

To hold/release tasks

1. In the Schedule Batch window, click Hold Tasks. The Select Tasks window is displayed.
2. To hold tasks:
 - a. Select the required task from the Released Tasks list and click . You can press Ctrl key for multiple selections.
 - b. To hold all tasks, click .
3. To release held tasks:
 - a. Select the required task from the Held Tasks list and click . You can press Ctrl key for multiple selections.
 - b. To release all held tasks, click .
4. Click Save.

2.7 Monitor Batch

The Monitor Batch facilitates you to view the status of executed Batch along with the tasks details. You can track the issues if any, on regular intervals and ensure smoother Batch execution. A visual representation as well as tabular view of the status of each Tasks in the Batch is available.

To monitor a batch, perform the following steps:

1. Click Monitor Batch from the Header panel. The Monitor window is displayed.
2. Select the Batch Name and Batch Run ID from the Batch Name and Batch Run ID drop-down menus.
3. Click Start Monitor. The following details are displayed:
 - Batch Status: Displays the batch status, the different batch status are NOT-STARTED, ON-GOING, SUCCESSFUL, FAILED, INTERRUPTED, EXCLUDED, HELD, and UNDEFINED.
 - Batch Start Time: Displays the batch start time details.
 - Batch End Time: Displays the batch end time details.
 - Task Details: Mouseover the task to display its status and details.
4. Click List View to display the details in a tabular form.
5. Click More information link to display the message returned by the Rest Service.

2.7.1 Viewing Execution History

Execution History enables you to view the complete history of job execution, such as the start and end time of the job execution, status of the job execution, log messages generated during job execution, and so on.

To view execution history, follow these steps:

1. On the Jobs page, click the job for which you want to view the execution history.
2. The Execution History pane at the bottom of the page displays the historical information of the selected job. The details include the Batch ID, the date and time during which a job is executed, status of the job execution, and so on.
3. Click Monitor Execution corresponding to the batch ID for which you want to view more information of a batch.
4. The Execution Monitor page is displayed in a new window. The page contains the following details:
 - The pipeline for which the job is created. The widgets in the pipeline are represented in different colors. Widgets are color coded to indicate the widget type and status of the job.
 - Log messages generated during the execution of the pipeline.

NOTE

You can click the Create Event widget to display the Log Messages window. Only in case of a Scenario Pipeline, you can click the Add Hint option to add hints. Hints provide a mechanism to direct the optimizer to choose a certain query execution plan based on the specific criteria.

5. Click the widget marked as complete (with a check mark) to view the Log Messages dialog box with detailed information of the widget.

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