

## SQL Stream Job Lifecycle

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## Running SQL Stream jobs

Every time you run an SQL statement in the SQL Stream console, it becomes a job and runs on the deployment as a Flink job. You can manage the running jobs using the Jobs tab on the UI.

### About this task

There are two logical phases to run a job:

1. **Parse:** The SQL is parsed and checked for validity and then compared against the virtual table schema(s) for correct typing and key/columns.
2. **Execution:** If the parse phase is successful, a job is dynamically created, and runs on an open slot on your cluster. The job is a valid Flink job.

### Before you begin

- Make sure that you have registered a Data Provider.
- Make sure that you have created a Table that can be used as a source in the SQL query.

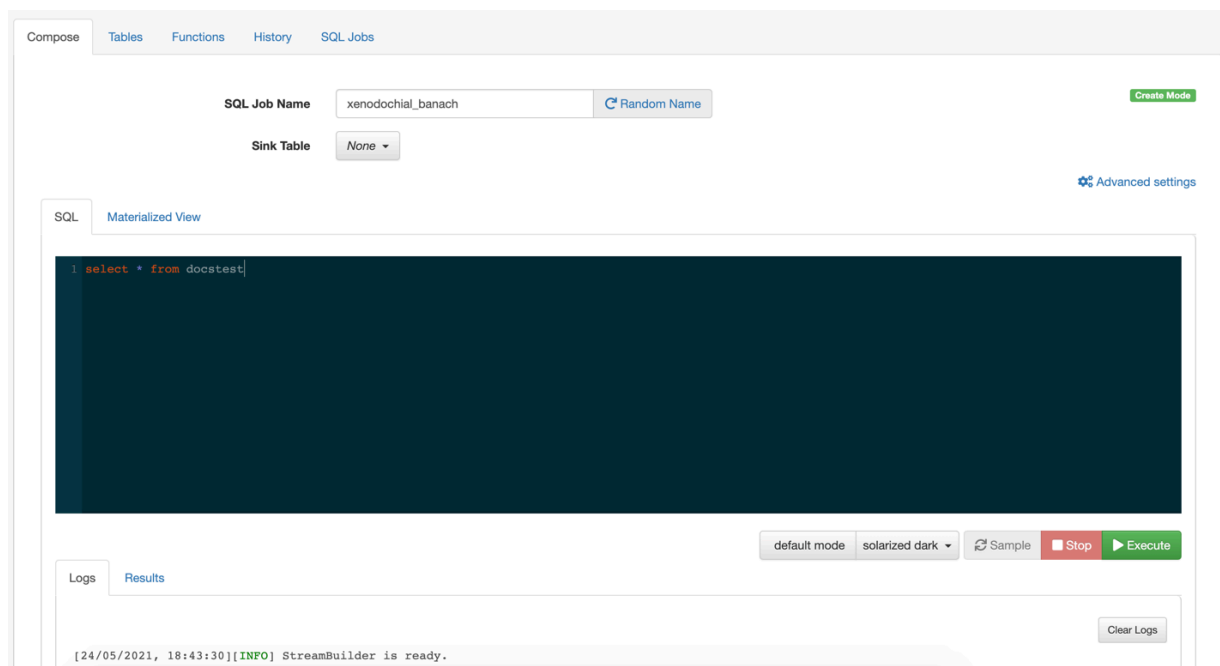
### Procedure

1. Go to your cluster in Cloudera Manager.
2. Click SQL Stream Builder from the list of services.
3. Click SQLStreamBuilder Console.  
The Streaming SQL Console opens in a new window.
4. Provide a name for the SQL job.
  - a) Optionally, you can click Random Name to generate a name for the SQL job.
5. Select a Sink Table.
  - a) Optionally, you can leave the sink as None.



**Note:** The Sink Table is an optional argument to a job that specifies the destination for the continuous results. If you select None, the results are not sent to a sink, but sampled on the screen or to a materialized view.

## 6. Add a SQL query to the SQL window.

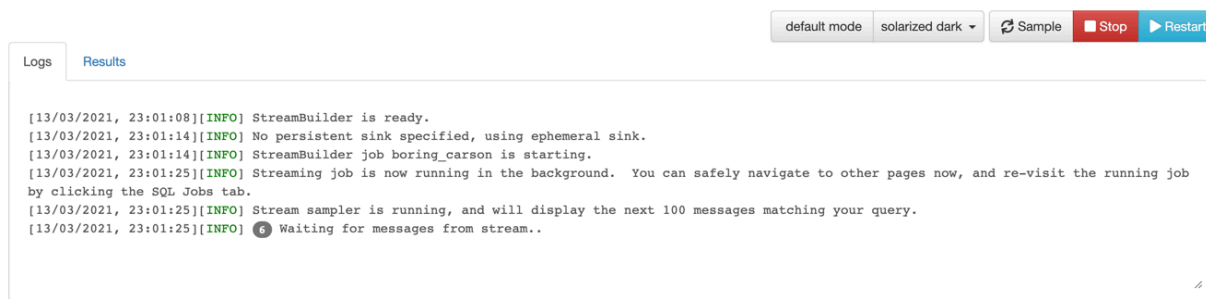


**Note:** You cannot start a job without adding a SQL statement in the SQL editor window. In case, there are no SQL statements provided and you click Execute, the following error message is displayed: You must provide a SQL query.

When starting a job, the number of slots consumed on the specified cluster is equal to the parallelism setting. The default is one slot. To change the parallelism setting, click Advanced settings.

## 7. Click Execute.

The Logs window updates the status of SSB.



## 8. Click Results to check the sampled data.

These results are only samples, not the entire result of the new stream being created from the output of the query. The entire result set is sent to the Sink Table and/or a Materialized View.



**Note:** While SSB is querying unbounded data streams, you can click Stop to stop the job execution.

## Results

A job is generated that runs the SQL continuously on the stream of data from the source Table, and pushes the results to a sink Table, to the Console under the Results tab or to a Materialized View.

## Related Information

[Registering Data Providers in SSB](#)

[Using Tables in SQL Stream jobs](#)

[Monitoring SQL Stream jobs](#)

## Configuring advanced job management

If you need to further customize your SQL Stream job, you can add more advanced features to configure the job restarting method and time, threads for parallelism, sample behavior, exactly once processing and restoring from savepoint.

Before running a SQL query, you can configure advanced features by clicking on the Show Advanced Settings button on the Compose tab.

**Console**  
Run SQL against unbounded streams of data and create persistent SQL streaming jobs

Compose Tables Functions History **SQL Jobs**

SQL Job Name: confident\_mirzakhani [Random Name](#) [Create Mode](#)

Sink Table: None

Restart Strategy: never

Restart Retry Time(sec): 30

Job Parallelism (threads): 1

Sample Behavior: Sample one message every second

Restore From Savepoint: false

[Hide Advanced settings](#)

SQL [Materialized View](#)

### Restart strategy and restart retry time

The job is restarted after Restart Retry Time seconds, if set to Always. It is not restarted if you select Stop from the SQL Jobs tab. If set to Never, the job does not restart unless you select Restart from the Compose tab.

### Job parallelism

The number of threads to start to process the job. Each thread consumes a slot on the cluster. When the Job Parallelism is set to 1, the job consumes the least resources. If the data provided supports parallel reads, increasing the parallelism can raise the maximum throughput. For example, when using Kafka as a data provider, setting the parallelism to the equal number as the partitions of the topic can be a starting point for performance tuning.

### Sample behavior

How often to sample data (in milliseconds) from the output stream. 1000ms is common and recommended.

### Restore From Savepoint

Enabling restoring from savepoint for the SQL job, using the state in Flink.

## Stopping, restarting and editing SQL jobs

As a SQL Stream job processes streaming data, you need to stop the job to finish the process. You can restart a SQL Stream job after stopping it. In case you need to update or change the configurations that you have set for a SQL Stream job, you can restart it. You can navigate through the job life cycle using the Streaming SQL Console.

### Stopping a SQL Stream job

You can stop a running job either on the **Compose** or the **SQL Jobs** page.

#### Stopping job from Compose page

1. Select Console from the main menu.

By default, you are on the Compose page when selecting Console from the main menu.

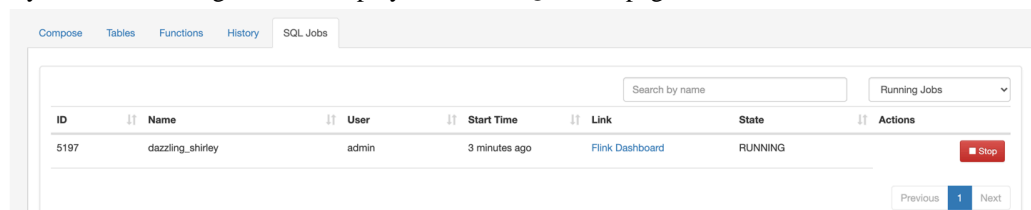
2. Click Stop under the SQL window.



### Stopping job from SQL Jobs page

1. Click Console on the main menu.
2. Select SQL Jobs tab.

By default, Running Jobs are displayed on the **SQL Jobs** page.



3. Click on the job you want to stop.
  - a. You can further filter down the results, by directly searching for the job name in the Search field.
4. Click Stop under Actions.

### Restarting a running SQL Stream job

You can restart a running SQL job using the Restart button under the SQL window.

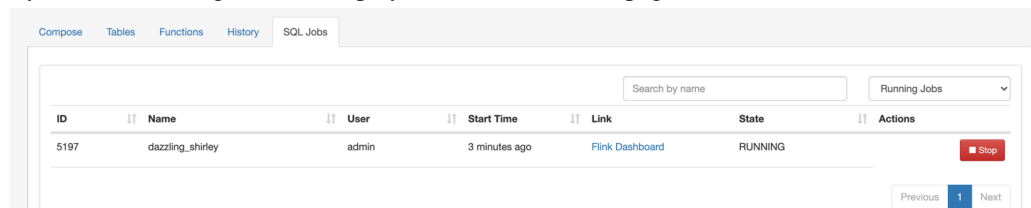


In case the job is running in the background, you can load it with its properties from the SQL Jobs tab.

### Restarting job from SQL Jobs page

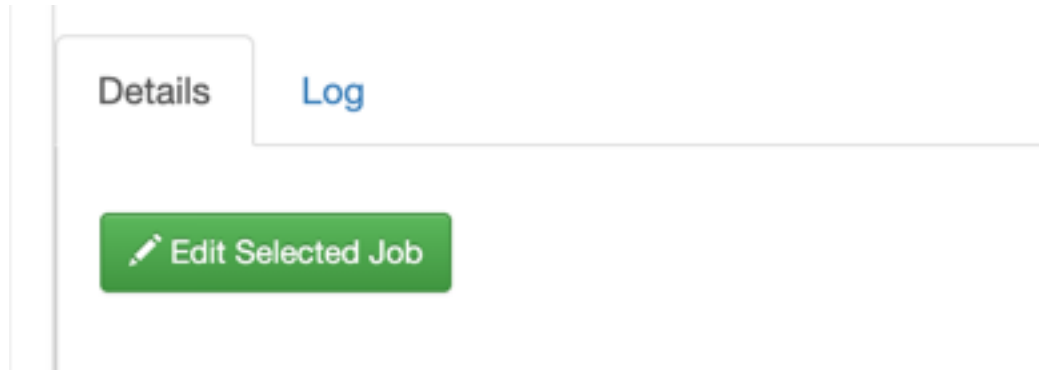
1. Click Console on the main menu.
2. Select SQL Jobs tab.

By default, Running Jobs are displayed on the **SQL Jobs** page.



3. Click on the job you want to restart.
  - a. You can further filter down the results, by directly searching for the job name in the Search field.

- Click Edit Selected Job under the **Details** tab.



The SQL job and its configuration is loaded in the SQL window on the **Compose** page.

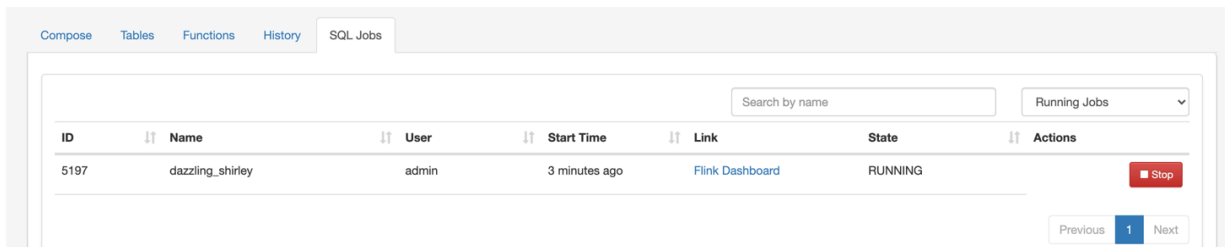
- Click Restart.

### Restarting a stopped SQL Stream job

You can restart a SQL job that was previously stopped by locating it in the SQL Jobs page.

- Click Console on the main menu.
- Select SQL Jobs tab.

By default, Running Jobs are displayed on the **SQL Jobs** page.



- Select Stopped Jobs from the drop-down menu.



4. Click on the job you want to restart.
  - a. You can further filter down the job list by searching for the job name, or locate a specific job ID by prefixing your search with id.

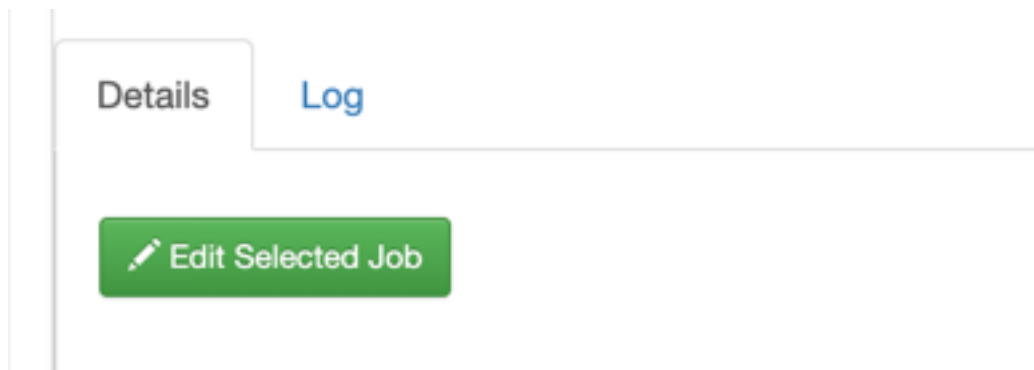
For Search by name

Compose Tables Functions History SQL Jobs			
ID	↕	Name	↕
5195		hungry_albattani	

For Search by ID

Compose Tables Functions History SQL Jobs			
ID	↕	Name	↕
5195		hungry_albattani	

5. Click Edit Selected Job under the **Details** tab.



The SQL job and its configuration is loaded in the SQL window on the **Compose** page.

6. Click on Execute.



**Note:** If you are using Materialized Views, the same Materialized View parameters will be selected. Make sure that the configured parameters are still appropriate for the job if the source schemas have been modified.

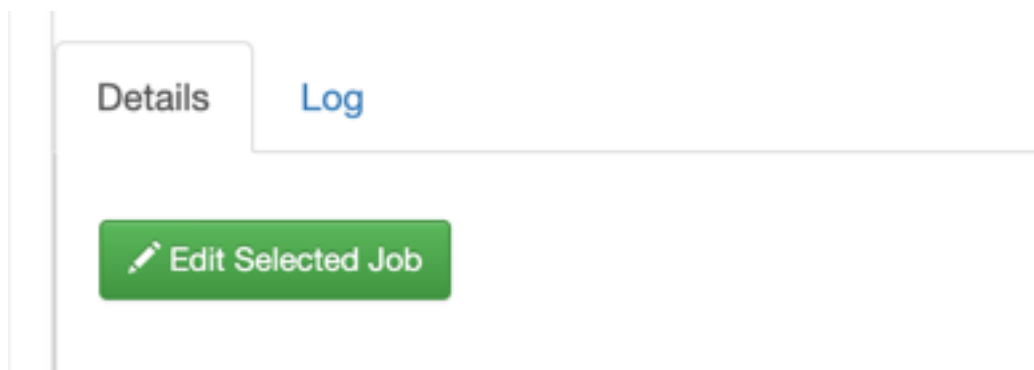
### Editing a SQL Stream job

Before editing, you must stop the running SQL job. After modifying the properties of the job, you need to execute them again to apply the changes.

1. Click Console on the main menu.
2. Select SQL Jobs tab.

By default, Running Jobs are displayed on the **SQL Jobs** page.

3. Select Stopped Jobs from the drop-down menu.
4. Click on the job you want to restart.
  - a. You can further filter down the results, by directly searching for the job name in the Search field.
5. Click Edit Selected Job under the **Details** tab.



The SQL job and its configuration is loaded in the SQL window on the **Compose** page.

6. Edit any configuration of the selected SQL job.

You need to click on Advanced Settings to display more configuration of the SQL job.

7. Click on Execute.

### Deleting a SQL Stream job

You can delete a stopped SQL job from SQL Stream Builder on the SQL Jobs tab. By deleting the SQL job, you remove them from the list of stopped jobs.

1. Click Console on the main menu.
2. Select SQL Jobs tab.

By default, Running Jobs are displayed on the **SQL Jobs** page.

3. Select Stopped Jobs from the drop-down menu.

The list of stopped jobs is displayed on the **SQL Jobs** page.

4. Click on Delete under Actions.

Compose	Tables	Functions	History	SQL Jobs
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ID	Name	User	Start Time	Link	State	Actions
5199	eager_poincare	admin	an hour ago		STOPPED	
5198	wizardly_edison	admin	2 hours ago		STOPPED	

## Sampling data for a running job

You can sample data from a running job. This is useful if you want to inspect the data to make sure the job is running correctly and producing the results you expect.

### About this task

Sampling the results to your browser allows you to inspect the queried data and iterate on your query. You can sample 100 rows in the Results tab by clicking on the Sample button in the Console. In case you do not add any sink to the SQL job, the results automatically appear in the Results tab.

### Procedure

1. Select Console on the main menu.
2. Go to the SQL Jobs tab.
3. Select the job you want to edit.
4. Go to the Details tab at the bottom.
5. Click Edit Selected Job.

The SQL window in Edit Mode appears.

6. Click Sample.

### Results

Sample results are displayed in the results window. If there is no data meeting the SQL query, sampling stops after a few attempts.