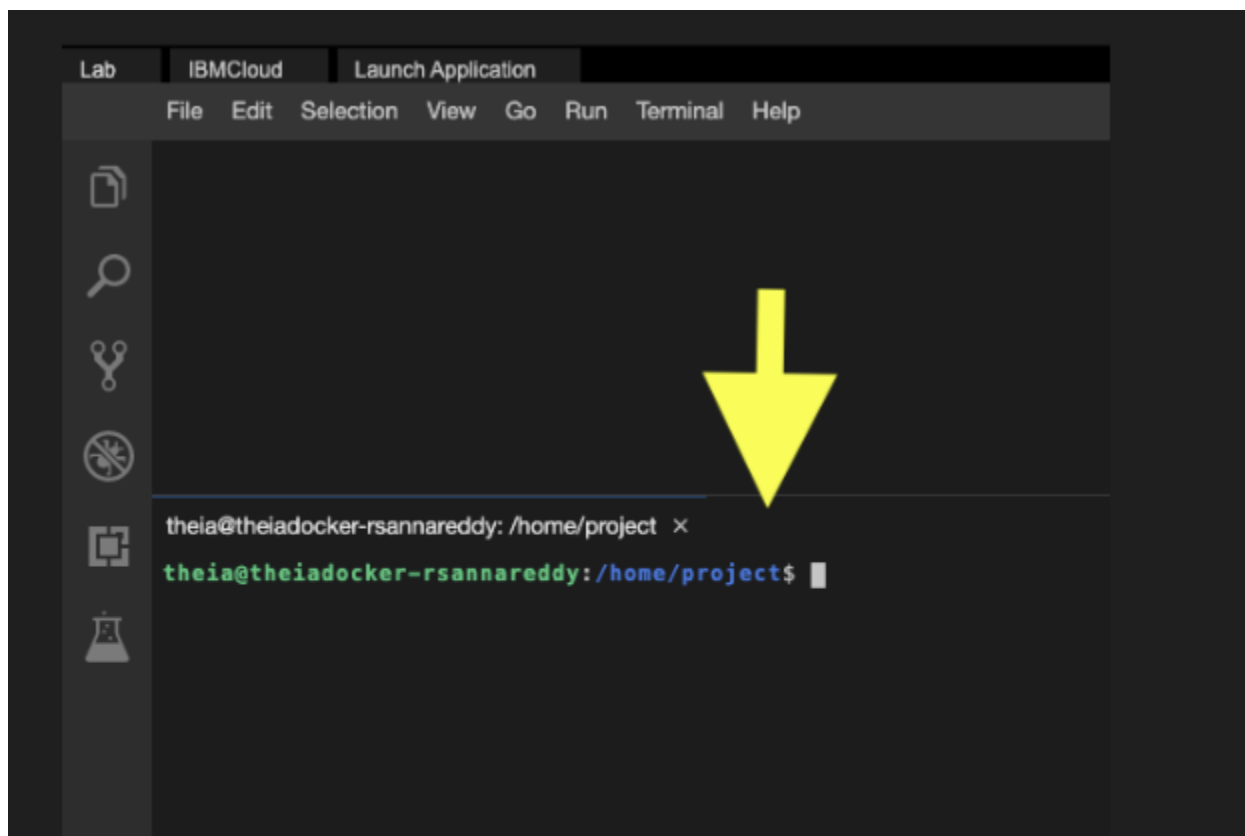# Hands-on Lab: Getting Started with Apache Airflow

Objectives

After completing this lab you will be able to:

- Start Apache Airflow.
- Open the Airflow UI in a browser.
- List all the DAGs.
- List the tasks in a DAG.
- Explore a DAG in the UI.

Start Apache Airflow

Run the commands below on the newly opened terminal. (You can copy the code by clicking on the little copy button on the bottom right of the codeblock below and paste it wherever you wish.)

Run the command below in the terminal to start Apache Airflow.

```
1    start_airflow
```

Please be patient, it may take upto 5 minutes for airflow to get started.

When airflow starts successfully, you should see an output similar to the one below.

```
theia@theiadocker-craigtrupp8:/home/project$ start_airflow
Starting Airflow
This process can take up to 15 minutes...
 - Initializing configuration
 - Running the Airflow initialization Service
 - Starting Airflow Services

Airflow started, waiting for all services to be ready....

Your airflow server is now ready to use and available with username:
airflow password: MTU1ODItY3JhaWd0

You can access your Airflow Webserver at:
https://craigtrupp8-8080.theiadocker-3-labs-prod-theiak8s-4-tor01.proxy.cog
nitiveclass.ai

CommandLine:
  • List DAGs: airflow dags list
  • List Tasks: airflow tasks list example_bash_operator
  • Run an example task: airflow tasks test example_bash_operator runme_1
2015-06-01
```

Airflow WebUI

List all DAGs

```
theia@theiadocker-craigtrupp8:/home/project$ airflow dags list
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The sql_alchemy_conn option in [core] has been
moved to the sql_alchemy_conn option in [database] - the old setting has
been used, but please update your config.
```

```
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The auth_backend option in [api] has been renamed
to auth_backends - the old setting has been used, but please update your
config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:3
60: FutureWarning: The auth_backends setting in [api] has had
airflow.api.auth.backend.session added in the running config, which is
needed by the UI. Please update your config before Apache Airflow 3.0.
  FutureWarning,
dag_id                                          | filepath
| owner   | paused
=======================================+===================================
===========================+=========+=======
example_bash_operator                   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                |
ample_dags/example_bash_operator.py                             |         |
example_branch_datetime_operator        |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                |
ample_dags/example_branch_datetime_operator.py                  |         |
example_branch_datetime_operator_2      |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                |
ample_dags/example_branch_datetime_operator.py                  |         |
example_branch_dop_operator_v3          |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                |
ample_dags/example_branch_python_dop_operator_3.py              |         |
example_branch_labels                   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                |
ample_dags/example_branch_labels.py                             |         |
example_branch_operator                 |
```

```
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_branch_operator.py                       |         |
example_branch_python_operator_decorator |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_branch_operator_decorator.py             |         |
example_complex                          |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                 | ample_dags/example_complex.py
|            |
example_dag_decorator                    |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_dag_decorator.py                         |         |
example_external_task_marker_child       |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_external_task_marker_dag.py              |         |
example_external_task_marker_parent      |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_external_task_marker_dag.py              |         |
example_kubernetes_executor              |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_kubernetes_executor.py                   |         |
example_local_kubernetes_executor        |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
ample_dags/example_local_kubernetes_executor.py             |         |
example_nested_branch_dag                |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                            |
```

```
ample_dags/example_nested_branch_dag.py                  |          |
example_passing_params_via_test_command   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_passing_params_via_test_command.py        |          |
example_python_operator                   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_python_operator.py                    |          |
example_short_circuit_operator            |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_short_circuit_operator.py             |          |
example_skip_dag                          |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                          | ample_dags/example_skip_dag.py
|          |
example_sla_dag                           |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                          | ample_dags/example_sla_dag.py
|          |
example_subdag_operator                   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_subdag_operator.py                    |          |
example_subdag_operator.section-1         |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_subdag_operator.py                    |          |
example_subdag_operator.section-2         |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                         |
ample_dags/example_subdag_operator.py                    |          |
example_task_group                        |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
```

```
True
                                                       | ample_dags/example_task_group.py
|          |
example_task_group_decorator                 |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       |
ample_dags/example_task_group_decorator.py                   |          |
example_time_delta_sensor_async              |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       |
ample_dags/example_time_delta_sensor_async.py                |          |
example_trigger_controller_dag               |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       |
ample_dags/example_trigger_controller_dag.py                 |          |
example_trigger_target_dag                   |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       |
ample_dags/example_trigger_target_dag.py                     |          |
example_weekday_branch_operator              |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       |
ample_dags/example_branch_day_of_week_operator.py            |          |
example_xcom                                 |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       | ample_dags/example_xcom.py
|          |
example_xcom_args                            |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       | ample_dags/example_xcomargs.py
|          |
example_xcom_args_with_operators             |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                       | ample_dags/example_xcomargs.py
|          |
```

```
latest_only                                      |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                     |
ample_dags/example_latest_only.py                           |           |
latest_only_with_trigger                 |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                     |
ample_dags/example_latest_only_with_trigger.py              |           |
tutorial                                 |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                             | ample_dags/tutorial.py
|            |
tutorial_etl_dag                         |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                             | ample_dags/tutorial_etl_dag.py
|            |
tutorial_taskflow_api_etl                |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                     |
ample_dags/tutorial_taskflow_api_etl.py                     |           |
tutorial_taskflow_api_etl_virtualenv     |
/home/airflow/.local/lib/python3.7/site-packages/airflow/ex | airflow |
True
                                                     |
ample_dags/tutorial_taskflow_api_etl_virtualenv.py          |           |

theia@theiadocker-craigtrupp8:/home/project$
```

List Tasks in a DAG

Exercise 4 - List tasks in a DAG

Run the command below in the terminal to list out all the tasks in the DAG named
`example_bash_operator` .

```
1    airflow tasks list example_bash_operator
```

Here `example_bash_operator` is the name of the DAG.

Try listing out the tasks for the DAG `tutorial` .

```
theia@theiadocker-craigtrupp8:/home/project$ airflow tasks list
example_bash_operator
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The sql_alchemy_conn option in [core] has been
moved to the sql_alchemy_conn option in [database] - the old setting has
been used, but please update your config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The auth_backend option in [api] has been renamed
to auth_backends - the old setting has been used, but please update your
config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:3
60: FutureWarning: The auth_backends setting in [api] has had
airflow.api.auth.backend.session added in the running config, which is
needed by the UI. Please update your config before Apache Airflow 3.0.
  FutureWarning,
also_run_this
run_after_loop
run_this_last
runme_0
runme_1
runme_2
this_will_skip
```

```
theia@theiadocker-craigtrupp8:/home/project$ airflow tasks list tutorial
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The sql_alchemy_conn option in [core] has been
moved to the sql_alchemy_conn option in [database] - the old setting has
been used, but please update your config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The auth_backend option in [api] has been renamed
to auth_backends - the old setting has been used, but please update your
config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:3
60: FutureWarning: The auth_backends setting in [api] has had
airflow.api.auth.backend.session added in the running config, which is
needed by the UI. Please update your config before Apache Airflow 3.0.
  FutureWarning,
print_date
sleep
templated
```

Pause/Unpause a DAG

Exercise 5 - Pause/Unpause a DAG

Run the command below in the terminal to unpause a DAG.

```
1    airflow dags unpause tutorial
```

Here `tutorial` is the name of the DAG.

Pause a DAG.

```
1    airflow dags pause tutorial
```

Try to unpause the DAG named `example_branch_operator`.

```
theia@theiadocker-craigtrupp8:/home/project$ airflow dags unpause tutorial
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The sql_alchemy_conn option in [core] has been
moved to the sql_alchemy_conn option in [database] - the old setting has
been used, but please update your config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The auth_backend option in [api] has been renamed
to auth_backends - the old setting has been used, but please update your
config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:3
60: FutureWarning: The auth_backends setting in [api] has had
airflow.api.auth.backend.session added in the running config, which is
needed by the UI. Please update your config before Apache Airflow 3.0.
  FutureWarning,
Dag: tutorial, paused: False
theia@theiadocker-craigtrupp8:/home/project$ airflow dags pause tutorial
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The sql_alchemy_conn option in [core] has been
moved to the sql_alchemy_conn option in [database] - the old setting has
been used, but please update your config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:5
28: DeprecationWarning: The auth_backend option in [api] has been renamed
to auth_backends - the old setting has been used, but please update your
config.
  option = self._get_environment_variables(deprecated_key,
deprecated_section, key, section)
/home/airflow/.local/lib/python3.7/site-packages/airflow/configuration.py:3
60: FutureWarning: The auth_backends setting in [api] has had
airflow.api.auth.backend.session added in the running config, which is
needed by the UI. Please update your config before Apache Airflow 3.0.
  FutureWarning,
Dag: tutorial, paused: True
```