Connections & Variables

This guide aims to inform you, the user, on how to create and manage your Airflow Connections & Variables.

Please note the following

Airflow Connections & Variables cannot be restricted and are open to all users. If created properly, the secret values won't be visible but they can still be overwritten by any user.

The Hogwarts team is currently working on a better secret management system to replace this functionality. Stay tuned.

- What are Connections & Variables?
- Connections
- Variables

What are Connections & Variables?

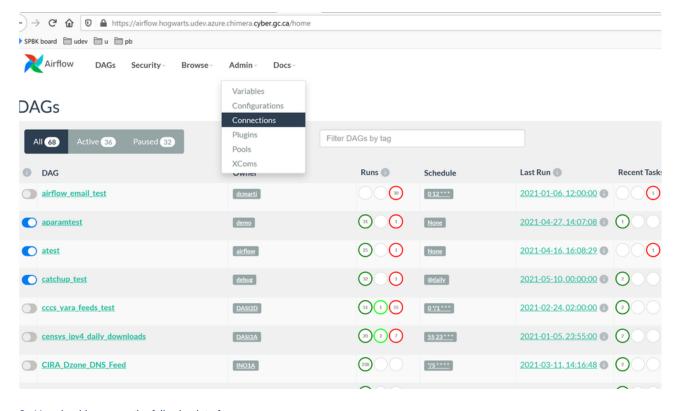
Connections and Variables allow users to create predefined resources which may be accessed in their DAGs at runtime. These resources are stored in Airflow's metadata DB and can only be viewed/created by users with the required permission level.

Connections are typically used by Hooks and Sensors but can also be used to generate a resource URI. Variables however, are most commonly used as a medium for storing sensitive key/values which are then injected as environment variables or parameters for the task operator.

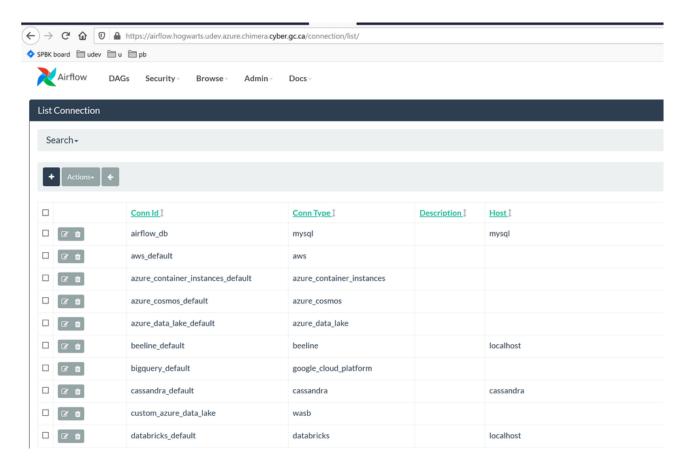
Connections

List Airflow Connections:

- 1 Navigate to Airflow
- 2 Under the navigation > Admin > Connections



3 - You should now see the following interface

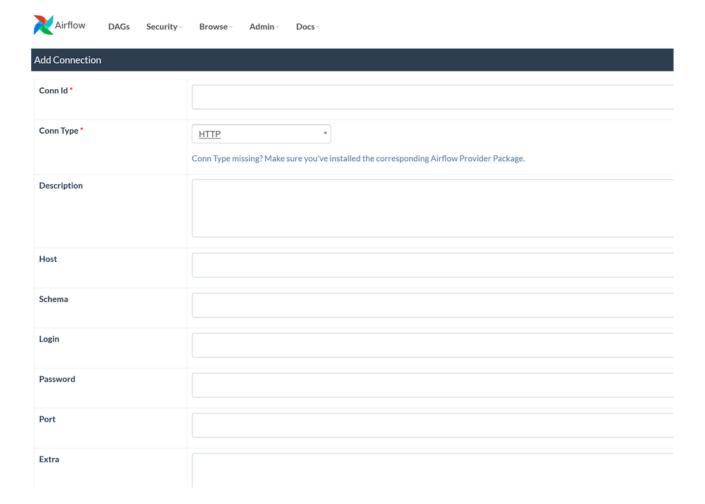


Create an Airflow connection:

1. Under Admin > Connections, click



- 2. Enter the 'Conn Id' make sure its unique but descriptive as this will be referenced in your DAG.
- 3. Enter the 'Conn type' that matches the Connection you want.
- 4. Enter the necessary connection information for your Connection type.



Edit/delete an Airflow connection:

- 1. Under Admin > Connections, find your connection in the list
- 2. Click the appropriate icon to edit or delete your connection
 - a. Note: Inputs such as password will need to be re-entered as they are encrypted on submit and cannot changed like other inputs.

Using Connections in your DAG

The following code will extract the full URI, the login, and the password from the stored connection and pass these values as environment variables to the BashOperator.

```
from airflow.hooks.base_hook import BaseHook

...

# Connection type for this test is "http"

connection = BaseHook.get_connection("<connection_id>")

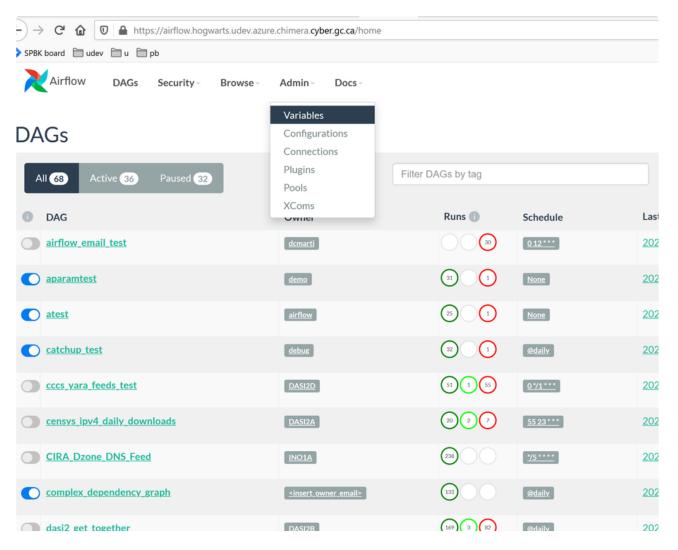
t1 = BashOperator(
    dag=dag,
```

```
task_id='<task_id>',
bash_command='env | grep CONNECTION',
env={
    "CONNECTION_URI": connection.get_uri(),
    "CONNECTION_LOGIN": connection.login,
    "CONNECTION_PASSWORD": connection.password
}
```

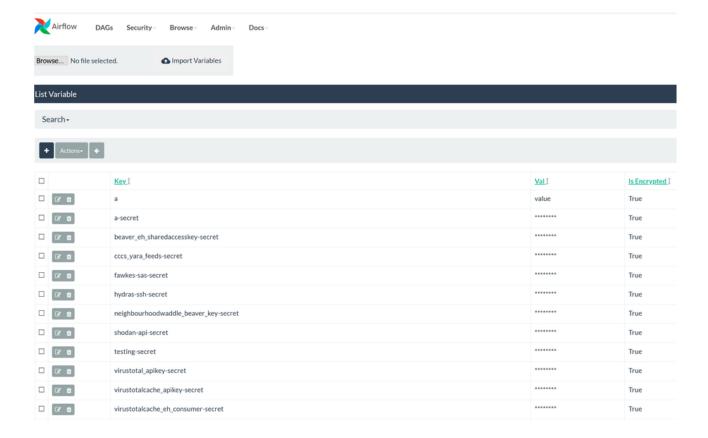
Variables

List Airflow Variables:

- 1 Navigate to Airflow
- 2 Under the navigation > Admin > Variables



3 - You should now see the following interface

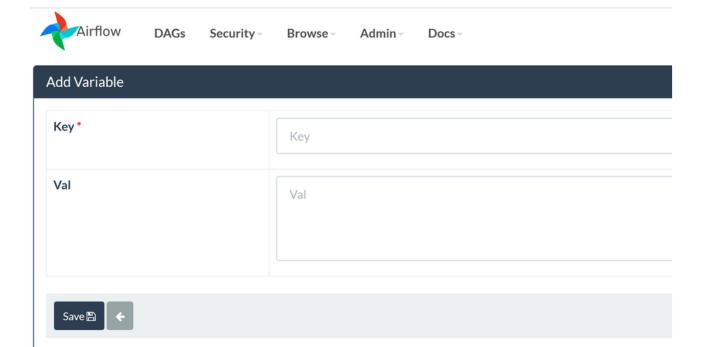


Create an Airflow Variable:

1. Under Admin > Variables, click



- 2. Enter the 'Key' make sure it's unique and it contains the word 'secret'. This is how Airflow knows to encrypt the value.
- 3. Enter your 'Value'.



Edit/delete your Airflow Variable:

- 1. Under Admin > Variables, find your variable in the list
- 2. Click the appropriate icon to edit or delete your variable
 - a. Note: Inputs such as password will need to be re-entered as they are encrypted on submit and cannot changed like other inputs.

Using Variables in your DAG

The following code will extract the Variable's value, decrypt it, and pass it as an environment variable to the BashOperator.

```
1 from airflow.models import Variable
2 ...
3 t1 = BashOperator(
4
      dag=dag,
5
       task_id='<task_id>',
 6
     bash_command='env | grep SECRET',
 7
       env={
8
           "SECRET_VARIABLE": Variable.get("<variable_secret_id>")
9
       }
10 )
```

As always, the code for these examples can be found in the Hogwarts examples repository.