Deploy to Astro

It is time! Time to deploy the DAG you've built during this course on Astro!

Without further ado, let's go!

Prerequisites

The DAG `extract_stars.py` under the folder `dags` should look like that:

```
from airflow import DAG
from airflow.operators.bash import BashOperator
from airflow.providers.http.operators.http import SimpleHttpOperator
from airflow.operators.python import PythonOperator

import json
from datetime import datetime

def _print_stargazers(github_stats: str, date: str):
  github_stats_json = json.loads(github_stats)
  airflow_stars = github_stats_json.get("stargazers_count")
  print(f"As of {date}, Apache Airflow has {airflow_stars} stars on Github!")

with DAG('extract_stars', schedule_interval='@daily', start_date=datetime(2022, 1, 1), cat
chup=False) as dag:

    get_date = BashOperator(
        task_id="get_date",
        bash_command="echo {{ ds.format('yyyy') }}"
    )

    query_github_stats = SimpleHttpOperator(
        task_id="query_github_stats",
        endpoint="{{ var.value.endpoint }}",
        method="GET",
        http_conn_id="github_api",
        log_response=True
    )

    print_stargazers = PythonOperator(
        task_id="print_stars",
        python_callable=_print_stargazers,
        op_args=["{{ ti.xcom_pull(task_ids='query_github_stats') }}", "{{ ti.xcom_pull(tas
k_ids='get_date') }}"]
    )
```

```
get_date >> query_github_stats >> print_stargazers
```

With the Connection:

- Connection Id: `github_api`
- Connection Type: `HTTP`
- Host: `api.github.com`
- Schema: `https`

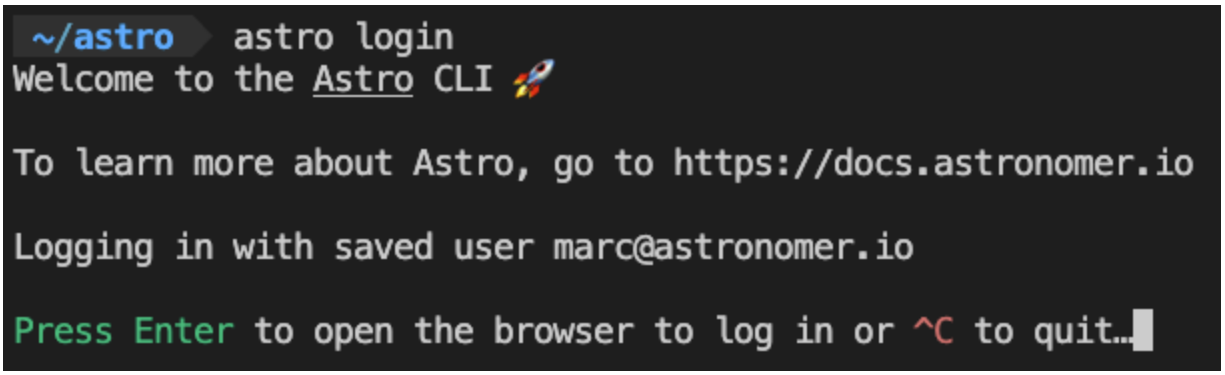
And the Variable:

- Key: `endpoint`
- Val: `repos/apache/airflow`

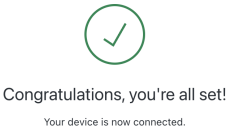
Authenticate to Astro

Once you've tested your DAGs locally with `astro dev parse`

Authenticate to the Astro CLI by running `astro login`



After running this command, you will be prompted to open your web browser and log in to the Cloud UI. Once you complete this login, you will be automatically authenticated to the CLI.

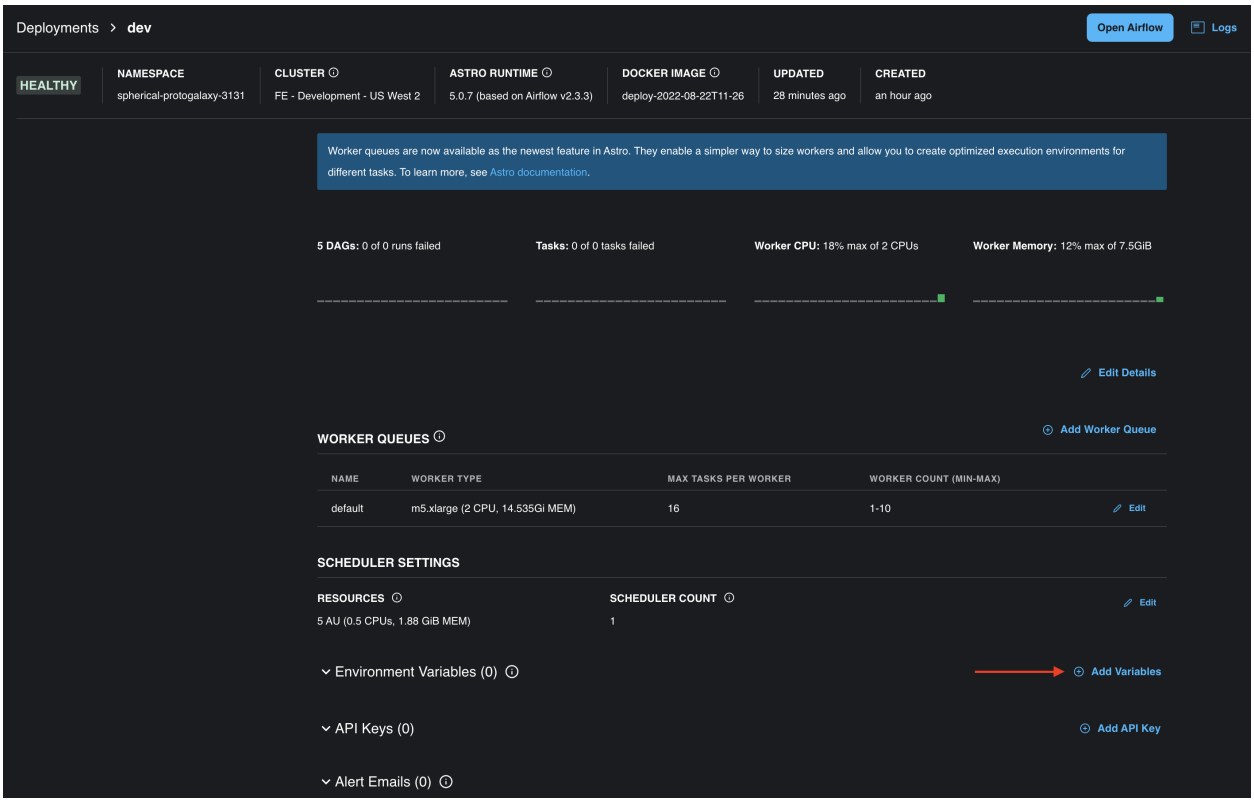


Add Variables and Connections to Astro

Before deploying your DAG, you need to recreate the connections/variables that you've created locally on Astro.

Got to your Astro deployment `dev`

Click `Add Variables`



We are going to create two environment variables. One for the connection, one for the variable.

For the connection:

KEY: `AIRFLOW_CONN_GITHUB_API`

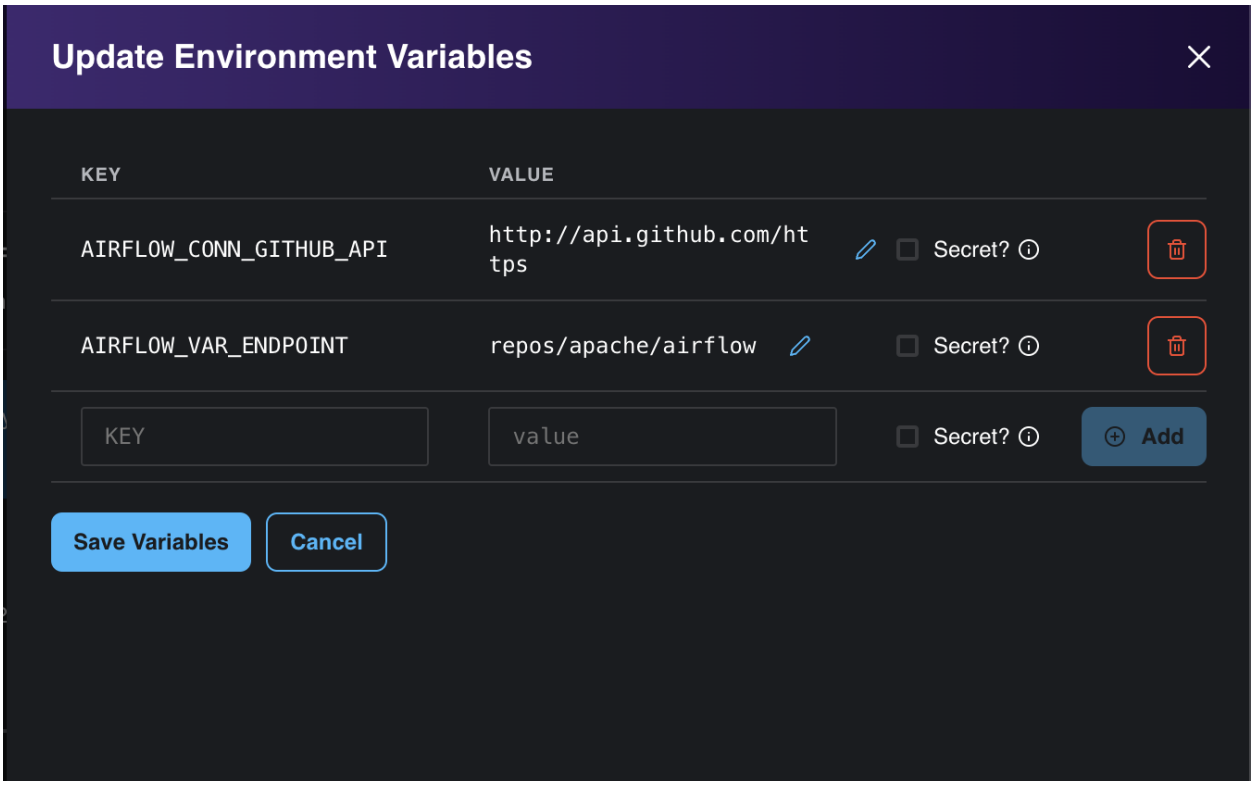
VALUE: `http://api.github.com/https`

Click `Add`

For the variable:

KEY: `AIRFLOW_VAR_ENDPOINT`

VALUE: `repos/apache/airflow`



Click `Save Variables`

Deploy to Astro

Back to the Astro CLI, you can list workspaces with `astro workspaces list`

```
NAME                            ID
Dogfood Production              g4elywerg190081hzgdwc08cei
Onboarding - Customer Success   342dg4ely190081hzgdwc08cei
Education                       cl48g4edfess234422dwc08cei
Data Engineering                cl74nlx32434324fyoa6vtvj86
```

Pick your workspace with `astro workspace switch <workspace-id>`

Next, run `astro deploy` and pick your deployment

```
Authenticated to Astro

Current Workspace: Data Engineering

Select which Deployment you want to deploy to:
 #     DEPLOYMENT NAME     RELEASE NAME                    DEPLOYMENT ID
 1     dev                 spherical-protogalaxy-3131      cl74npow0485901j0ikhpsgf4r

> 1
Deploying: spherical-protogalaxy-3131
Building image...
[+] Building 1.6s (11/11) FINISHED
```

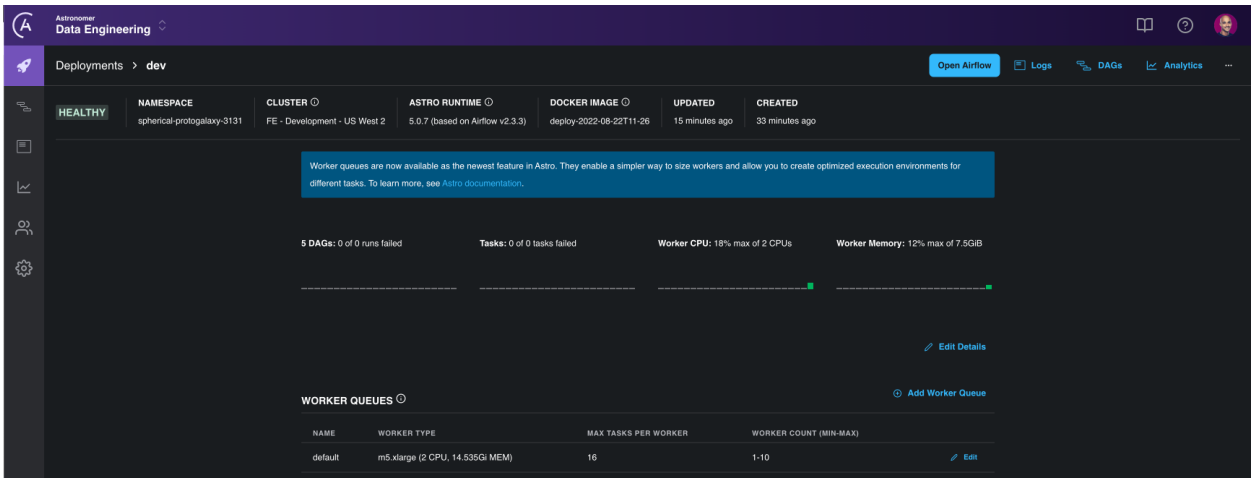
After a few minutes, you should end up with something like that:

```
Deployed Image Tag:  deploy-2022-08-22T11-26
Successfully pushed Docker image to Astronomer registry. Navigate to the Astronomer UI for confirmation that your deploy was successful.

 Deployment can be accessed at the following URLs:

 Deployment Dashboard: cloud.astronomer.io/cknaqyipv05731evsry6cj4n0/deployments/cl74npow0485901j0ikhpsgf4r
 Airflow Dashboard: astronomer.astronomer.run/dhpsgf4r?orgId=org_0FGQMRjnZdcx3EDk
```

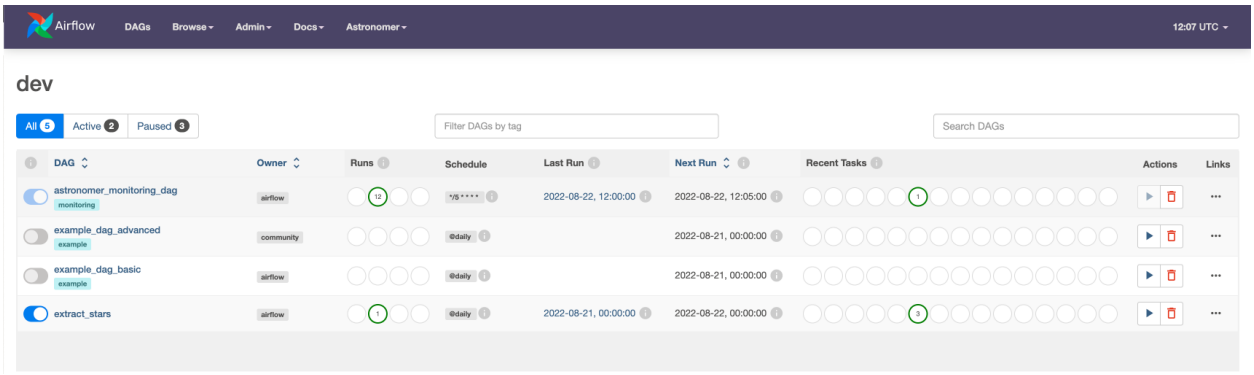
Back to your Deployment on Astro, wait until the status turned back to Healthy



Run you DAG

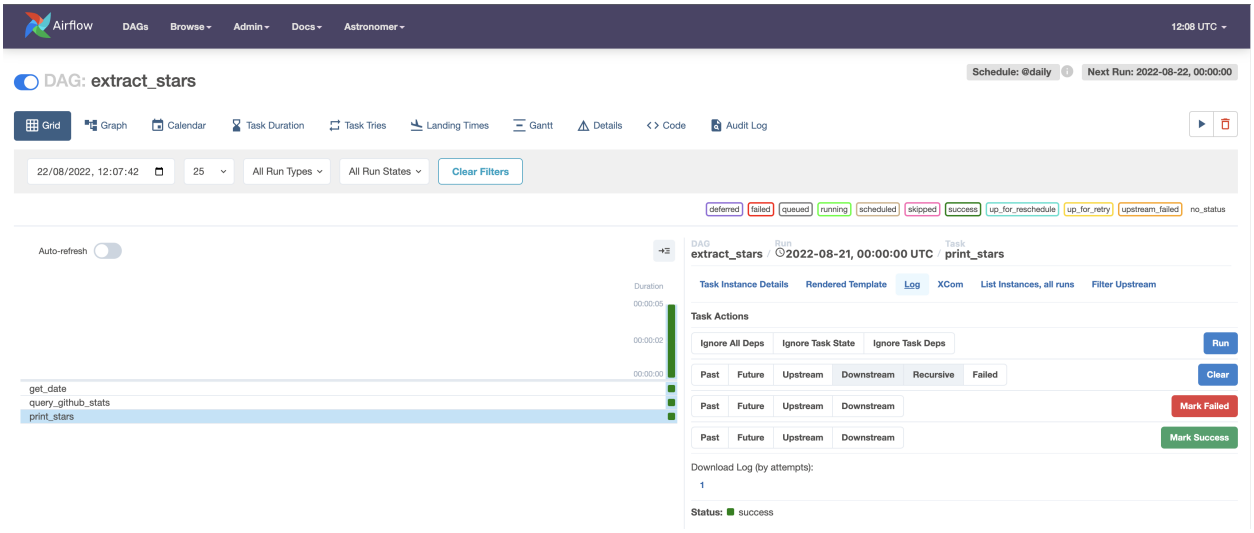
Click `Open Airflow`

Turn on the toggle of `extract_stars` DAG and wait a little bit.

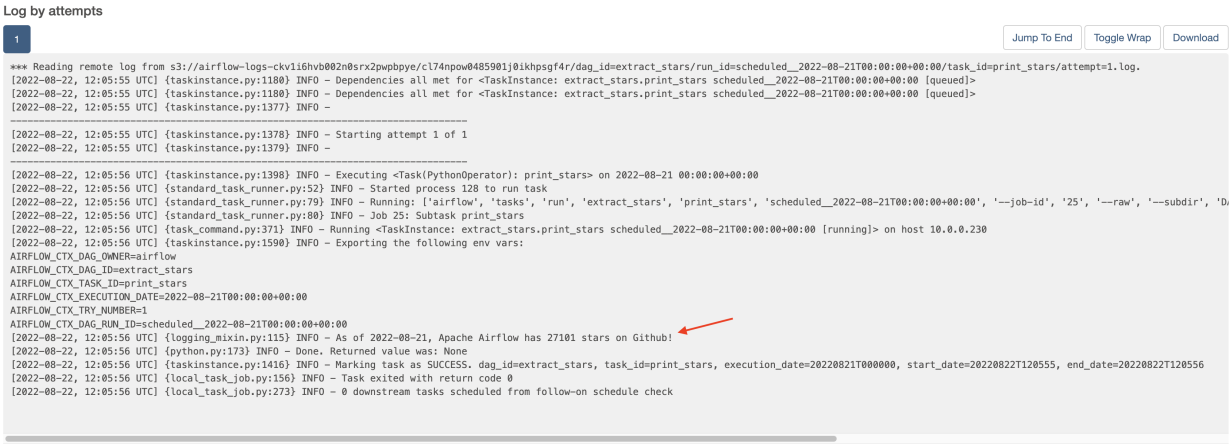


Click `extract_stars`

Then click on the task `print_stars` and `Log`



You should get something like that



Well done! You've just successfully built and deployed your first DAG on Astro! 😎

Additional resources

Astro Environment Variables: https://docs.astronomer.io/astro/environment-variables

Deploy on Astro: https://docs.astronomer.io/astro/deploy-code