18.8.25 - Task

Apache Airflow Setup on Windows using Docker

1. Introduction

Apache Airflow allows you to schedule, monitor, and manage workflows with ease. Having it on your Windows PC can be a gamechanger for your data engineering and automation projects.

In this guide, we will install **Docker Desktop**, set up **Apache Airflow** using **Docker Compose**, and create an **Admin user** to access the Airflow UI.

2. Prerequisites

- 1. **Docker Desktop** Download and install: https://www.docker.com/products/docker-desktop
- 2. **Visual Studio Code (VS Code)** Download and install: https://code.visualstudio.com/

3. Project Setup

Step 1: Download Airflow Docker Compose File

Download the official docker-compose.yaml file for Airflow:

curl -LfO 'https://airflow.apache.org/docs/apache-airflow/2.7.3/docker-compose.yaml'

Step 2: Create .env File

Open **VS Code** and create a new file named .env. Add the following lines:

AIRFLOW_IMAGE_NAME=apache/airflow:2.4.2 AIRFLOW_UID=50000

```
P.env

1 AIRFLOW_IMAGE_NAME=apache/airflow:2.4.2
2 AIRFLOW_UID=50000
```

Step 3: Start Airflow Services

Run the following command to start Airflow containers:

docker-compose up -d

```
PS C:\Users\harci\Materilas> docker-compose up -d
time="2025-08-18T15:43:31+05:30" level=warning msg="C:\\Users\\harci\\Materilas\\docker
-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove i
t to avoid potential confusion"
[+] Running 7/7

√ Container materilas-redis-1

                                             Heal...

√ Container materilas-postgres-1

√ Container materilas-airflow-worker-1

                                             Started

√ Container materilas-airflow-scheduler-1 Started

                                                                                    9.9s

√ Container materilas-airflow-webserver-1 Started
                                                                                   10.0s

√ Container materilas-airflow-triggerer-1 Started
                                                                                   10.0s

√ Container materilas-airflow-init-1

                                                                                    8.9s
```

Step 4: Create Admin User

Run the following command to create an Admin user for Airflow:

docker-compose run airflow-worker airflow users create \

```
--role Admin \
--username admin \
--email admin \
--firstname admin \
--lastname admin \
--password admin
```

```
PS C:\Users\harci\Materilas> docker-compose run airflow-worker airflow users create
ole Admin --username admin --email admin --firstname admin --lastname admin --password
 admin
\label{time=2025-08-18T15:56:26+05:30} time=2025-08-18T15:56:26+05:30 level=warning msg=C:\Users\harci\Materilas\docker=2025-08-18T15:56:26+05:30 level=warning msg=C:\Users\harci\Materilas\docker=2025-08-18T15:56:26+05:3
-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove i
t to avoid potential confusion"
 [+] Creating 2/2

√ Container materilas-redis-1

                                                                                                                                              Running
                                                                                                                                                                                                                                                                                                                                               0.0s

√ Container materilas-postgres-1 Running

                                                                                                                                                                                                                                                                                                                                               0.0s
 [+] Running 3/3

√ Container materilas-redis-1

                                                                                                                                                               Healthy
                                                                                                                                                                                                                                                                                                                                               0.5s

√ Container materilas-postgres-1

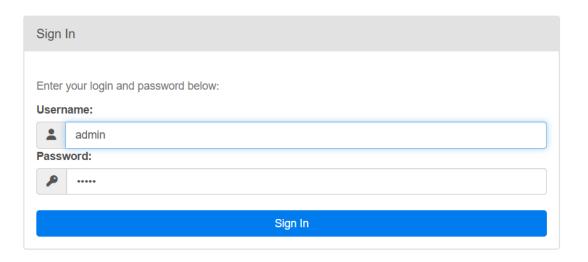
                                                                                                                                                              Health...
                                                                                                                                                                                                                                                                                                                                               0.5s
       ✓ Container materilas-airflow-init-1 St...
```

4. Access Apache Airflow UI

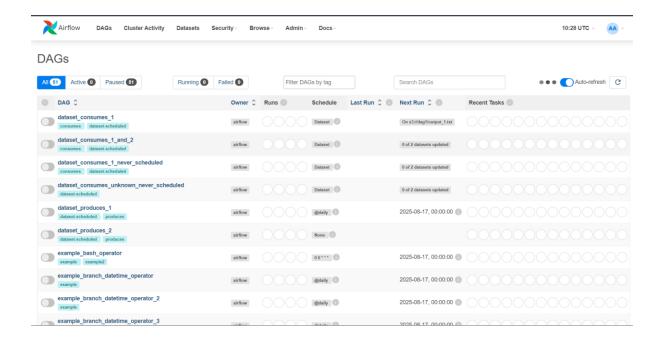
- Open your browser and visit: http://localhost:8080
- Login with the credentials you created:

o Username: admin

Password: admin



Airflow Dashboard with Example DAGs



5. Verify Running Containers

To check if services are running:

docker ps

PS C:\Users\harci\Materilas> docker ps				
>>				
CONTAINER ID	IMAGE PORTS	COMMAND	Created Names	STATUS
bac708cc945c utes (healthy) rer-1		"/usr/bin/dumb-init"	2 minutes ago materilas-airfl	
b3ce3b64c57e utes (healthy) ver-1		"/usr/bin/dumb-init" ccp, [::]:8080->8080/tcp	2 minutes ago materilas-airfl	
b1873ed22a72 utes (healthy) ler-1		"/usr/bin/dumb-init"	2 minutes ago materilas-airfl	
3f6bc1dc40b5 utes (healthy) -1		"/usr/bin/dumb-init"	2 minutes ago materilas-airfl	
ece340f0885f utes (healthy)	redis:latest 6379/tcp	"docker-entrypoint.s"	5 minutes ago materilas-redis	
56660a0a857c utes (healthy)	postgres:13 5432/tcp	"docker-entrypoint.s"	5 minutes ago materilas-postg	

7. Conclusion

You have successfully installed **Apache Airflow on Windows** using Docker.

Now you can:

- Add custom **DAGs** to the dags/ folder.
- Schedule, run, and monitor workflows from the Airflow UI.