
1. Project Structure (Minimal Docker Setup)

```
airflow-docker/  
├─ dags/  
│   └─ hello_world_dag.py  
├─ logs/  
├─ plugins/  
└─ docker-compose.yml
```

2. docker-compose.yml (Minimal Version)

Use the official template and adjust volume paths like below:

```
version: '3.8'  
  
services:  
  airflow-webserver:  
    image: apache/airflow:2.7.2  
    restart: always  
    ports:  
      - "8080:8080"  
    depends_on:  
      - airflow-scheduler  
    environment:  
      - AIRFLOW__CORE__EXECUTOR=LocalExecutor  
      - AIRFLOW__DATABASE__SQL_ALCHEMY_CONN=sqlite:///opt/airflow/airflow.db  
    volumes:  
      - ./dags:/opt/airflow/dags  
      - ./logs:/opt/airflow/logs  
      - ./plugins:/opt/airflow/plugins  
    command: webserver  
  
  airflow-scheduler:  
    image: apache/airflow:2.7.2  
    restart: always  
    depends_on:  
      - airflow-webserver  
    environment:  
      - AIRFLOW__CORE__EXECUTOR=LocalExecutor  
      - AIRFLOW__DATABASE__SQL_ALCHEMY_CONN=sqlite:///opt/airflow/airflow.db  
    volumes:  
      - ./dags:/opt/airflow/dags  
      - ./logs:/opt/airflow/logs  
      - ./plugins:/opt/airflow/plugins  
    command: scheduler
```

You may replace `sqlite` with `Postgres` in real setups.

3. Sample DAG (Inside `dags/hello_world_dag.py`)

```
from airflow import DAG
from airflow.operators.python import PythonOperator
from datetime import datetime

def say_hello():
    print("Hello from Airflow!")

with DAG(
    dag_id="hello_world_dag",
    start_date=datetime(2023, 1, 1),
    schedule_interval="@daily",
    catchup=False,
    tags=["example"]
) as dag:

    hello_task = PythonOperator(
        task_id="say_hello_task",
        python_callable=say_hello
    )
```

4. Commands to Run

```
# Step 1: Go to project root
cd airflow-docker

# Step 2: Initialize Airflow (first time only)
docker-compose run airflow-webserver airflow db init

# Step 3: Create an admin user (once)
docker-compose run airflow-webserver airflow users create \
    --username admin --firstname First --lastname Last \
    --role Admin --email admin@example.com

# Step 4: Start Airflow services
docker-compose up
```

Then go to: <http://localhost:8080> Log in with the credentials you created.
