

This script is used to manage a local Apache Flink environment using Docker Compose. Here's a detailed breakdown of its functionality:

## Script Overview

- The script allows you to **start** or **stop** a Flink environment locally using Docker Compose.
- It takes several arguments: **on** or **off**, AWS SSO profile, chip architecture (amd64 or arm64), and specify the Flink language (Python or Java).
- The script uses **AWS SSO** credentials to configure the AWS environment, which are then passed to Docker containers.

## Key Features Explained

### 1. Command Argument Handling (**on** or **off**):

- **on**: Starts the local environment.
- **off**: Stops the local environment.
- If the argument is incorrect, an error message is displayed with proper usage information.

### 2. Argument Parsing:

- Parses optional arguments such as:
  - **--profile**: AWS SSO profile name.
  - **--chip**: Specify the chip architecture, and if extended resources are needed.
  - **--flink-language**: Specifies the language to be used (Python or Java).

### 3. Validation Checks:

- Checks if required arguments (**--profile**, **--chip**, **--flink-language**) are provided.
- If any of these required arguments are missing, it displays an appropriate error message and terminates.

### 4. AWS SSO Login:

- Logs in using the specified AWS SSO profile.
- Uses **aws2-wrap** to export AWS credentials (**AWS\_ACCESS\_KEY\_ID**, **AWS\_SECRET\_ACCESS\_KEY**, **AWS\_SESSION\_TOKEN**, **AWS\_REGION**) to the environment.
- Creates an **.env** file that contains the AWS environment variables required for the Docker Compose setup.

### 5. Docker Compose Setup:

- Depending on the chip architecture, it runs either **linux-docker-compose.yml** or **mac-docker-compose.yml** to start the Flink containers.
- The **.env** file is used to pass AWS credentials and settings to the Docker containers.

### 6. Python Application Handling:

- If **flink\_language** is set to **python**, it zips Python files in the **python\_apps/kickstarter** directory within the Docker container. This likely helps to package the Python Flink jobs.

## 7. Stopping the Environment:

- If the **off** argument is supplied, the script brings down the Docker Compose setup using the appropriate YAML file (`linux-docker-compose.yml` or `mac-docker-compose.yml`).

### Usage Example

The script should be run with the following syntax:

```
./deploy-flink.sh <on | off> --profile=<AWS_SSO_PROFILE_NAME> --chip=<amd64 | arm64> --flink-language=<python | java>
```

- **on**: Start the environment.
- **off**: Stop the environment.
- **--profile=<AWS\_SSO\_PROFILE\_NAME>**: The AWS SSO profile to use.
- **--chip=<amd64 | amd64-extend | arm64 | arm64-extend>**: Specify the chip architecture, and if extended resources are needed.
- **--flink-language=<python | java>**: Specify the language to use for Flink applications.

### Summary

- The script helps to manage a local Apache Flink environment via Docker, tailored for different architectures and Flink languages.
- It includes AWS integration through SSO and provides flexibility for running different Flink applications (Python or Java).
- The `.env` file generated during execution ensures that all necessary AWS credentials are passed securely to the Docker Compose setup.

This script is valuable for setting up and managing a local Flink environment that interacts with AWS resources and simplifies configuring different aspects like the execution architecture and language.