Dockerize SMILE with Docker-Compose

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How to Install Docker

Follow the instructions here: https://docs.docker.com/get-docker/

Acquire/Configure Credentials

- Contact Social Media Macroscope development team to acquire current SMILE credentials Chen Wang
- Alternatively, you can set up your own set of credentials by configuring the below shell script.

Shell script example using Traefik:

Using traefik is probably the easier solution in most cases. There are many benefits and one of the most important thing is that it will make the secure connection much easier and forwarding the components without complicated settings. However, there is prerequisite that your DNS should be pointing something like *.your.domain to your host. By doing this, the components will be able to have the DNS of traefik.your.domain, minio.your.domain,

```
# system setting
export DOCKERIZED=true

# if use AWS algorithm, then you must use a static IP address
export LOCAL_ALGORITHM=true

# single user version vs multiple users
export SINGLE_USER=false

#set up home directory
export HOME=/your/home/directory

#set server info
export SERVER=smm.server.com

# settings for CILOGON
export CILOGON_CLIENT_ID=<<cilogon id>>
export CILOGON_CLIENT_SECRET=<<cilogon client secret>>
export CILOGON_CALLBACK_URL=<<ci logon callback url>>

export MINIO_URL=https://minio-api.${SERVER}
export MINIO_PUBLIC_ACCESS_URL=https://minio-api.${SERVER}
export BUCKET_NAME=macroscope-smile
export SMILE_GRAPHQL_URL=https://graphql.${SERVER}/graphql

# create mounted volumes on host machine
mkdir -p ${HOME}/smile_data/${BUCKET_NAME}
mkdir -p ${HOME}/smile_user
mkdir -p ${HOME}/smile

export RABBITMQ_HOST=${SERVER}
export RABBITMQ_URL=amqp://${SERVER}
export REDIS_URL=redis://redis
```

```
# email notification
#export EMAIL_HOST=<<email host>>
#export EMAIL_PORT=465
#export EMAIL_FROM_ADDRESS=<<email from address>>
#export EMAIL_PASSWORD=<<email password>>

# align with AWS
export AWS_ACCESSKEY=<<aws_accesskey>>
export AWS_ACCESSKEYSECRET=<<aws_accesskeysecret>>

# social media platforms
export REDDIT_CLIENT_ID=<<reddit client id>>
export REDDIT_CLIENT_SECRET=<<reddit client secret>>
export REDDIT_CALLBACK_URL=<<reddit callback url>>
#export TWITTER_CONSUMER_KEY=<<twitter consumer key>>
#export TWITTER_CONSUMER_SECRET=<<twitter consumer secret>>
export TWITTER_V2_CLIENT_ID=<<twitter v2 client id>>
export TWITTER_V2_CLIENT_SECRET=<<twitter v2 client secret>>
export TWITTER_V2_CALLBACK_URL=<<twitter v2 callback url>>

# export
export BOX_CLIENT_ID=<box client id>
export BOX_CLIENT_SECRET=<<box client secret>>
export DROPBOX_CLIENT_ID=<<dropbox client id>>
export DROPBOX_CLIENT_SECRET=<<dropbox client secret>>
export GOOGLE_CLIENT_ID=<<google client id>>
export GOOGLE_CLIENT_SECRET=<<google client secret>>

export CLOWDER_BASE_URL=https://clowder.server.com/
export CLOWDER_GLOBAL_KEY=<<clowder global key>>
export CLOWDER_ON=false

# start
docker-compose -f docker-compose-smile-traefik.yml -d up

# stop
# docker-compose -f docker-compose-smile.yml down -v

# update latest image from docker hub
# docker-compose -f docker-compose-smile.yml pull
```

Variables Explained

More details about variables are documented in here

- System setting. Set to true to use standalone containerized SMILE.
  - DOCKERIZED=true
- If using algorithm deployed on AWS, then you must use a static IP address.
  - LOCAL_ALGORITHM=true
- Single user mode vs multiple users mode.
  - SINGLE_USER=false
- Settings for CILOGON (this section is not required if running in single user mode)
  - CILOGON_CLIENT_ID={{cilogon id}}
  - CILOGON_CLIENT_SECRET={{cilogon client secret}}
  - CILOGON_CALLBACK_URL={{ci logon callback url}}
- Configure email server to enable capability of sending email notifications for long running jobs.
  - EMAIL_HOST={{email host}}
  - EMAIL_PORT=465
  - EMAIL_FROM_ADDRESS={{email from address}}
  - EMAIL_PASSWORD={{email password}}
- MINIO access keys and secret. Can be set to align with AWS S3 access keys and secret.
  - AWS_ACCESSKEY={{aws_accesskey}}
  - AWS_ACCESSKEYSECRET={{aws_accesskeysecret}}
- Social media platforms configurations.
  - REDDIT_CLIENT_ID={{reddit client id}}
  - REDDIT_CLIENT_SECRET={{reddit client secret}}
  - REDDIT_CALLBACK_URL={{reddit callback url}}
  - TWITTER_CONSUMER_KEY={{twitter consumer key}}
  - TWITTER_CONSUMER_SECRET={{twitter consumer secret}}
  - TWITTER_V2_CLIENT_ID={{twitter v2 client id}}
  - TWITTER_V2_CLIENT_SECRET={{twitter v2 client secret}}
  - TWITTER_V2_CALLBACK_URL={{twitter v2 callback url}}

- Cloud storage platforms configurations (Optional)
  - BOX_CLIENT_ID=
  - BOX_CLIENT_SECRET={{box client secret}}
  - DROPBOX_CLIENT_ID={{dropbox client id}}
  - DROPBOX_CLIENT_SECRET={{dropbox client secret}}
  - GOOGLE_CLIENT_ID={{google client id}}
  - GOOGLE_CLIENT_SECRET={{google client secret}}
- Clowder configurations (Optional)
  - CLOWDER_BASE_URL={{clowder instance base url}}
  - CLOWDER_GLOBAL_KEY={{clowder global key}}
  - CLOWDER_ON=false (enable connection to clowder or not)

Additional Notes:

- The **HOME** variable will be the location to hold persistent data, such as user information, social media and analytics output, tags and etc.
- When set SINGLE_USER=true, it uses your home user name on your machine. When set SINGLE_USER=false, you will be redirect to registration/login page.

How to Run

All images you needed to run the stack have already been pushed to Docker Hub: https://hub.docker.com/orgs/socialmediamacroscope/repositories
All you need is the YAML configuration file to run.

You must acquire either one of the below docker compose YAML file

Latest docker compose yaml file here:

- SMILE Using NGINX: https://github.com/ncsa/standalone-smm-analytics/blob/main/rabbitmq/docker-compose-smile.yml
- SMILE Using Traefik (**recommended**) https://github.com/ncsa/standalone-smm-analytics/blob/main/rabbitmq/docker-compose-smile-traefik.yml

To Start

run the aforementioned shell script:

```
sh docker-command-smile.sh
```

or

export all environment variables and then

```
docker-compose -f docker-compose-smile.yml up
```

Then you should be able to access SMILE at **http://<your IP address>:8001**

To Stop

```
docker-compose -f docker-compose-smile.yml down -v
```

Update

```
docker-compose -f docker-compose-smile.yml pull
```

To remove Existing volume

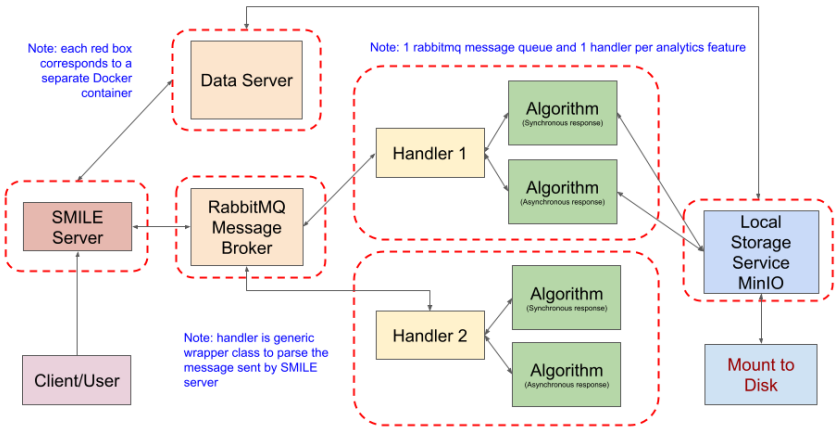
```
docker volume rm {volume name. e.g.rabbitmq_smile_content_data}
```

Appendix:

SMILE and BAE images on Docker Hub

https://hub.docker.com/orgs/socialmediamacroscope/repositories

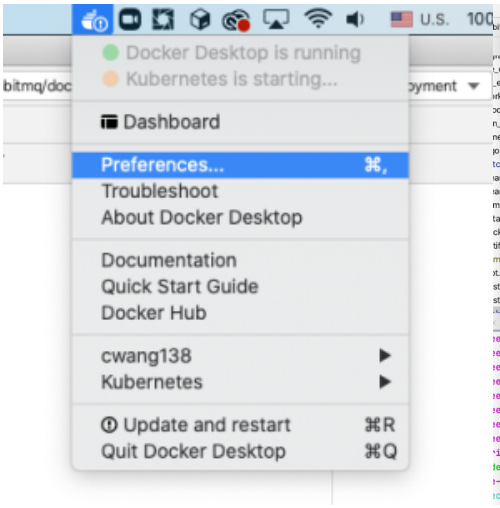
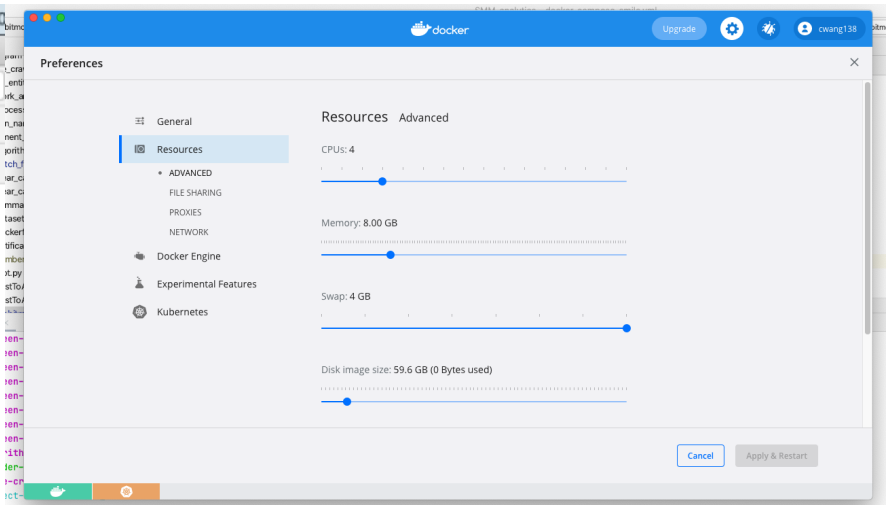
Architectures



Docker vs Hubzero Tool mode (legacy)

`export DOCKERIZED=true  Dockerized version`

`export DOCKERIZED=false  Hubzero Tool version, can be run by command npm start`

Increase Memory and CPU allocation for Docker

Some of the analysis algorithms are very memory intensive. Make sure you adjust memory and CPU for Docker to achieve the optimal performance. Make sure you set values smaller than your host machine.