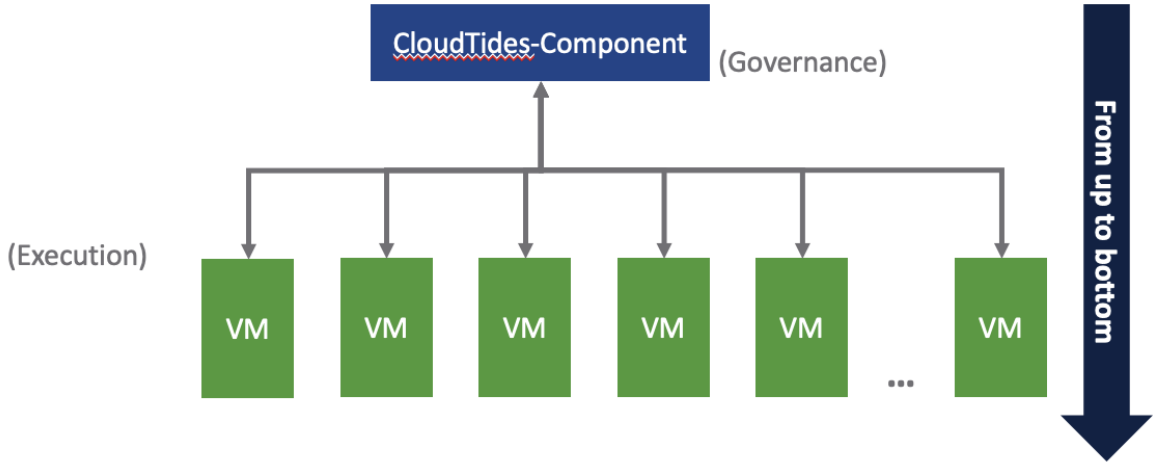
Deployment of CloudTides-Component



Requirements

- Docker and Docker-compose are installed
- Ensure that VM deployed with CTC(CloudTides-Component) are connected to both external and internal networks and have fixed IP addresses accessible (to support webssh connections)

Download Image

Log in to the VM where the Manager is to be deployed (blue in Figure 1) and use the following command to download the image within the CTC deployment VM. The Broker module is responsible for the governance function of VMS in the cluster. The WebSSH module provides a springboard for users to access clusters

```
+---------+     http     +--------+    ssh    +-----------+
| browser | <==========> | webssh | <=======> | target VM |
+---------+   websocket  +--------+    ssh    +-----------+

------------------------------------------------------------
docker pull yinhaozheng/tides-broker:latest
docker pull yinhaozheng/webssh:latest
```

Log in to the VM to be scheduled respectively (the green VM part in Figure 1) and download the application images. Currently, there are two provided application images, namely Gromacs and Openfoam

```
docker pull yinhaozheng/gromacs:latest
docker pull yinhaozheng/openfoam:latest
```

Edit Config

Create a separate directory in the Manager's VM as the project directory, and then create and edit the Docker-compose file

```
mkdir cloudtides-agent
cd cloudtides-agent

vim docker-compose.yaml
------------------------------------------------------------
version: "3.8"
services:
  broker:
    image: yinhaozheng/tides-broker:latest
    restart: always
    environment:
      - AGENT_NAME=testcloud
      - MQ_HOST=120.133.15.12:9092
      - SERVER_URL=http://www.cloudtides.org.cn:8000/api/v1/application/instance/action/statue
    volumes:
      - ${PWD}/hosts.yaml:/build/hosts.yaml
  webssh:
    image: yinhaozheng/webssh:latest
    ports:
      - "8888:8888" # Expose the port to access the WebSSH
    environment:
      - host_url=http://www.cloudtides.org.cn:8000 # CloudTides Central server address
```

AGENT_NAMEThe name of the current Agent, which will be used as the name of customer in Kafka and mapped to CloudTides Server
MQ_HOSTCurrently the service only supports Kafka, so this corresponds to kafka's address
SERVER_URLCloudTides Central server address

In addition, you need to prepare a hosts.yaml file for other VMS in the cluster in the current directory to ensure that the agent can be connected to the VM using SSH

```
- host: "120.133.15.12"
  pass: "ca$hc0w"
  port: "20023"
  user: "root"
```

Deployment

Use the following command to deploy in the current directory:

```
docker-compose up -d
```

The docker-compose logs -f command will output the following logs

```
  tides-broker git:(notebooks)  docker-compose up
Recreating tides-broker_broker_1 ... done
Creating tides-broker_webssh_1   ... done
Attaching to tides-broker_webssh_1, tides-broker_broker_1
broker_1  | 2022/03/04 01:22:25 - host: "120.133.15.12"
broker_1  |   pass: "ca$hc0w"
broker_1  |   port: "20023"
broker_1  |   user: "root"
broker_1  | 2022/03/04 01:22:25 &{120.133.15.12 root ca$hc0w 20023}
broker_1  | 2022/03/04 01:22:25 MQ host 120.133.15.12:9092
webssh_1  | [I 220304 01:22:26 settings:126] WarningPolicy
webssh_1  | [I 220304 01:22:26 main:42] Listening on :8888 (http)
```

Then contact the administrator yhaozheng@vmware.com to send the AGENT_NAME and webssh IP and port information to the administrator. The administrator will manually register the current Agent node with the Central server of CloudTides