VagrantFlaskDockerize

A simple yet powerful tool designed to streamline the deployment of Flask applications using Docker containers, all within an isolated VirtualBox environment managed by Vagrant and provisioned with Ansible.

Getting Started

These instructions will guide you through setting up your local development environment to run and deploy a Flask application in a Docker container.

Prerequisites

Ensure the following tools are installed on your system before you proceed: - **VirtualBox**: Download VirtualBox - **Vagrant**: Download Vagrant

Installation

1. Install vbguest plugin.
   ```
   vagrant plugin install vagrant-vbguest
   ```
2. Generate MariaDB password
3. On you host machine execute:

```
bash ansible-vault encrypt_string 'yourpassword' --name 'MARIADB_PASSWORD'
```

- It will ask for a string to encrypt.

Example output with password set as

```
yourpassword
```

and the encrypted string is

```
yourpassword
```

:

```
yaml MARIADB_PASSWORD: !vault | $ANSIBLE_VAULT;1.1;AES256
30386133623462313339626536646134393535313935613031353665653434623764393236633533
39626663353062653536663035316538623435336632353 50a396233663032666363393961346 16
36396534663531646366661613363386566356634623931353833653738663261623730353261343
33363631303733633 00a376361323236363439323332313537333332353866663864663233333433
3137
```

- Copy it to

```
playbook.yml
```

```
vars
```

section. - Replace the

```
ansible-vault
```

password in

```
vault_password_file
```

- You can also change

```
MARIADB_DATABASE
```

and

`MARIADB_USER`
in
`app/docker-compose.yml`
.

1. **Start the Vagrant VM**
   Change into the directory containing the
   `Vagrantfile`
   and execute the following command:
   ```
   vagrant up --provision
   ```
   This step will create and configure the guest machine as per the Vagrantfile and automatically provision it with Docker and the necessary dependencies using the included Ansible playbook.
2. **Access the Virtual Machine**
   To SSH into the VM, use the following command:
3. **Windows (PowerShell):**
   ```
   ssh -i .\.vagrant\machines\default\virtualbox\private_key
   vagrant@127.0.0.1 -p 2222
   ```
4. **Linux/macOS:**
   ```
   ssh -i ./.vagrant/machines/default/virtualbox/private_key
   vagrant@127.0.0.1 -p 2222
   ```

Inside the VM, you can view the running Docker containers with:
```
sudo /snap/bin/docker ps
```

1. Checking the VBoxGuest Plugins:
2. ```
   lsmod | grep vboxguest
   ```
3. ```
   VBoxService --version
   ```

Usage

This section provides detailed examples of how to use your application, including any additional steps to access its features.

Accessing the Application

To access the Flask application, open http://localhost:5000/ on your browser on the host machine.

Getting encrypted ENVs

- Execute:
  ```
  /snap/bin/docker ps
  ```
  Example output:

```
bash CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES 0b4af86da650
mariadb "docker-entrypoint.s…" 3 minutes ago Up 3 minutes 3306/tcp app-
db-1 ef62bf385509 flask-app "gunicorn -b 0.0.0.0…" 3 minutes ago Up 3
minutes 0.0.0.0:5000->8000/tcp app-app-1
```

- Attach terminal and check decrypted ENVs
  ```
  bash sudo /snap/bin/docker exec -it app-app-1 bash
  ```
- Once in the container execute:

```bash
echo $MARIADB_ROOT_PASSWORD
```