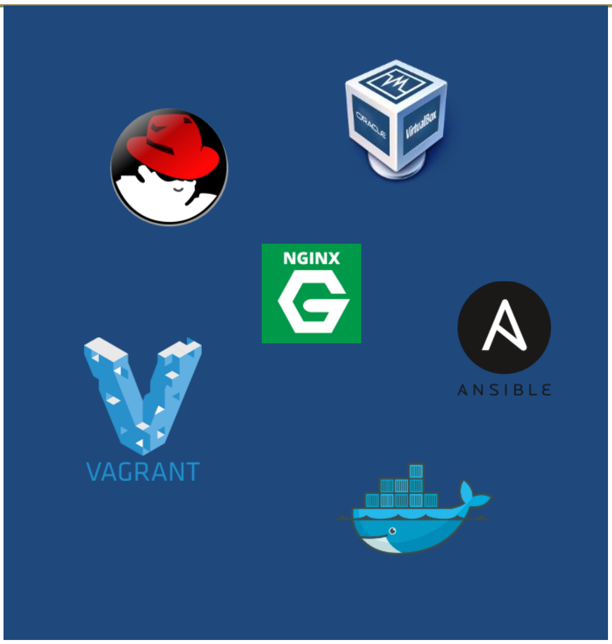


Vagrant Box Based - Docker Environment

Kareem Ghazaly (2017)

Contents

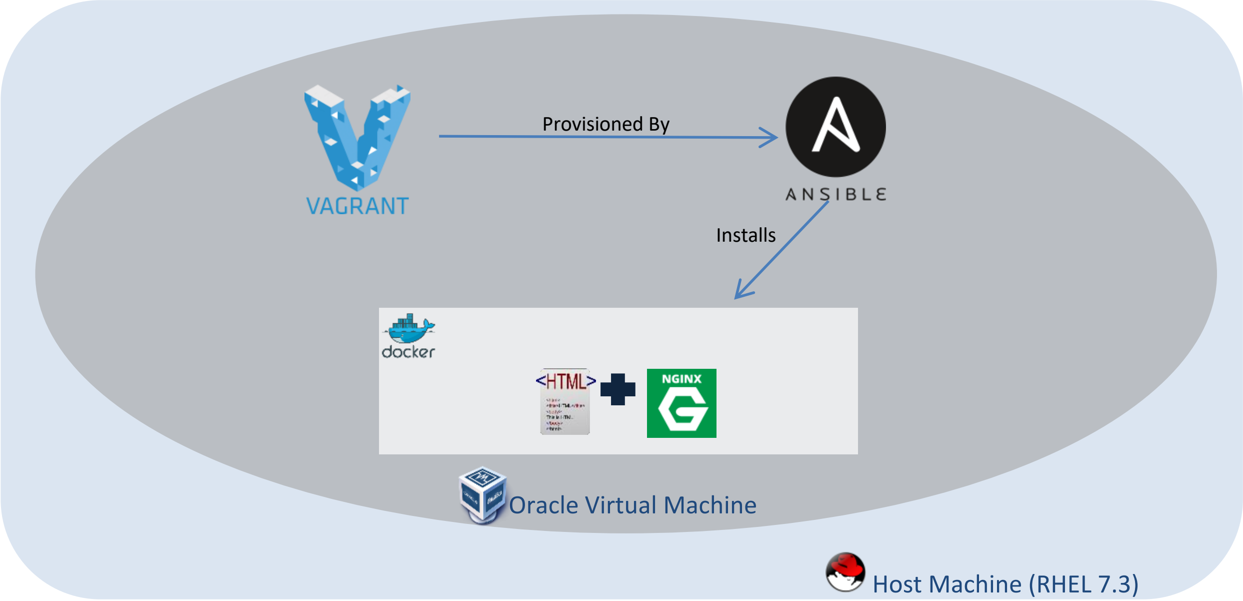
Introduction

This document describes the Vagrant Box based environment main components and their roles to run a static web content project, also views the hierarchy of the used machines, and needed steps to clone and test the environment.

In scope

- Environment machines
- Vagrant Box configuration
- Provisioning Ansible tasks
- Testing criteria
- Technology stack
- Cloning Steps

Environment Hierarchy

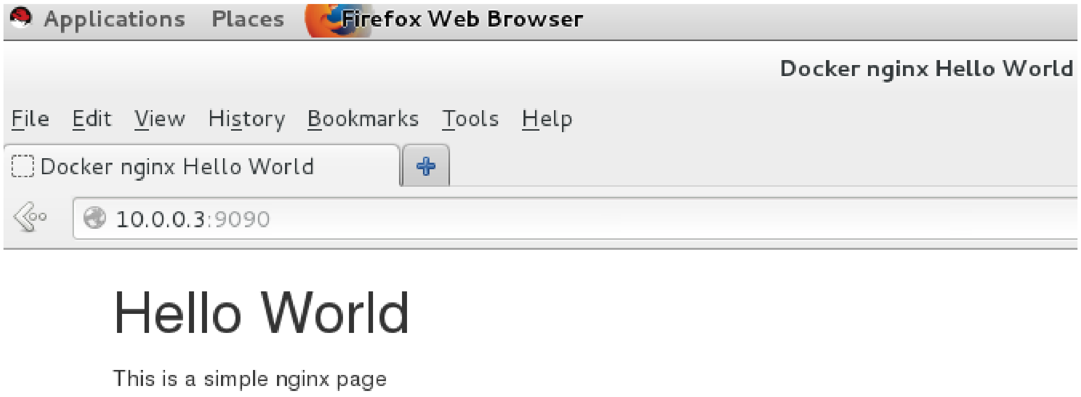


Environment Description

- The main host is a Red Hat server (RHEL 7.3) with Vagrant version 1.9.7 installed on it.
- Oracle VirtualBox (OVM) is installed on the host to act as the Provider for the Vagrant Box
- Vagrant is configured to use the image “iamseth/rhel7.3” and deploy it on the OVM with name “vag_rhel”, then assign Private IP “10.0.0.3” and forwarded port “7777”
- The Host uses synced folder “src/” to share HTML script with Vagrant Box
- Ansible is configured as the provisioning tool for the Vagrant box node
- Ansible playbook file “play.yml” provision the vagrant box to do below tasks:
    1. Subscribe the RHEL Vagrant box to RHN to enable the extras repositories for downloading Python tools, Docker packages and its dependencies.
    2. Making sure that the Docker service is up and running on the vagrant box
    3. Build a docker container based on the official Alpine Linux container (library/alpine:latest)
    4. Build a docker container with NginX installed based on the official nginx container (library/nginx:latest) and serve out a static HTML script with Hello World page.
- Test.sh is a simple bash script that runs command curl on localhost and port 7777, then check if the output contains work “Hello World”.

Testing the deployment

- A Shell script file "test.sh" is added in the host to test the deployment status, and it should be run manually after provisioning success.
- "test.sh" runs a curl command on the container IP with the assigned port and then checks the output for deployment status.
- The provisioned URL should be available from the Host OS



Hello World

This is a simple nginx page

Technology stack

Component	Version
Red Hat platform	RHEL 7.3
Oracle Virtual Machine (OVM)	5.1.24
Vagrant	1.9.7
Ansible	2.3.1
Nginx Container image	Library/nginx:latest
Alpine Linux Container image	Library/alpine:latest
HTML	5.0

Cloning Steps:

1- Make sure Vagrant, Ansible and Oracle VirtualBox are installed on your machine.

2- Create a new directory to have the configurations for this project

- ➢ mkdir ~/vagrant-ovm-rhel

3- Copy the Vagrantfile, play.yml, /src and test.sh to the new directory

4- Open the Vagrantfile and edit Private IP and guest port

```
config.vm.network "forwarded_port", guest: 9090, host: 7777
config.vm.network "private_network", ip: "10.0.0.3"
```

5- Open the Ansible PlayBook “play.yml” and edit below value:

- In Redhat subscription task put your username and password for RHN

6- Start the Vagrant box

- ➢ vagrant up

7- Start provisioning

- ➢ Vagrant provision

8- After Ansible finish provisioning successfully we should have nginx docker container running on the Vagrant Box and using static Hello World HTML page.
Run the bash script “test.sh” to check the

- ➢ ./test.sh

Note: the bash script test the localhost IP and Port “7777” so if you change the forwarded_port in Vagrantfile then you should edit it in the test.sh script.