

What is Vagrant?

- Intro to Vagrant
- Create VM Automatically
- Vagrant Commands
- Vagrant Networking
- Provisioning
- RAM, CPU, & Disk
- Multi VM Vagrantfile
- Documentation

Vagrant is an automation tool to manage VM lifecycle, right from creating a virtual machine to making any changes, deleting it, recreating it, provisioning it, anything that we do manually with VMs, we can automate that by using vagrant. Vagrant is a command line tool.

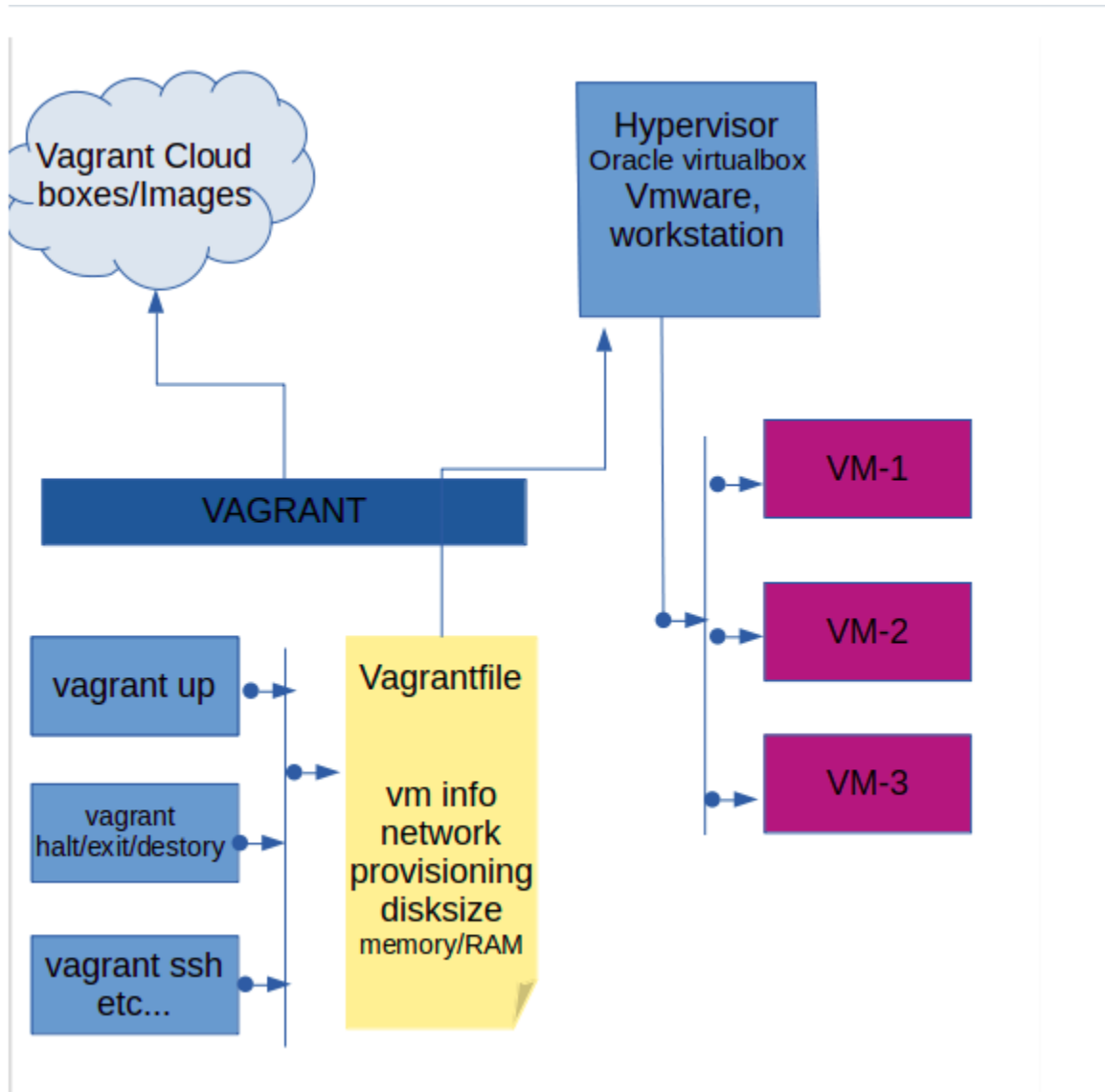
VM Management problems

- OS Installations
- Time Consuming
- Manual setup
- Tough Replication for Multi VM
- Documentations for Multi VM

Vagrant for VM's

- No OS installations
- VM Setup through Images(vagrant boxes)
- Images/ Boxes available in Vagrant cloud
- Manage VM's with a file(Vagrantfile)
- VM changes automatic through Vagrantfile
- Vagrant commands to manage VM's
- Provisioning VM/ Executing commands & scripts

Vagrant Architecture



Vagrant Setup

- VT(Virtualization Technology) Enabled in BIOS
- Vagrant tool
- Hypervisor like Oracle Virtualbox
- CLI(Command line interface) like GIT Bash

VM Setup with Vagrant

- Vagrant Box name from <https://app.vagrantup.com/boxes/search>
- Project Directory(Folder/Directory at any location of your choice)
- Vagrantfile in Project Directory
- Vagrant commands like 'vagrant up'
- Login with 'vagrant ssh' command for Linux vm's

Some commands

- Vagrant up → to start vm
- Vagrant ssh → to login vm
- Vagrant halt → to poweroff vm
- Vagrant reload → to reload/reboot vm
- Vagrant destroy → to delete vm
- vagrant global-status → to see the status of all the VMs. It also shows some stale information.
- vagrant global-status --prune → to remove old information
- vagrant status → to show vm status in the current directory

Vagrant IP, Memory & CPU

vm provider --> vmware_desktop or virtualbox

Bridged network

private_network

Memory and CPU

Changing RAM size

vb.memory = "value"

vb.cpus = "value"

Vagrant Sync Directories

Default sync directory inside vm

/vagrant/

Use Cases

- preserve the files in the vm where there is a chance of vm being corrupted or aborted
- When using the IDEs for coding

```
config.vm.synced_folder "../data", "/opt/vagrant_data"  
vagrant reload
```

Provision

- Means executing the commands or scripts when the vm comes up. In other technologies, this is also called bootstrapping.

```
config.vm.provision "shell", inline: <<-SHELL
```

On a already created vm, update the Vagrantfile and run
vagrant reload --provision

Server management/ Website Setup

CentOS7, httpd, html templates

Ubuntu20, (LAMP) and wordpress

<https://github.com/srtimsina/DevOps/tree/master/staticPage>

<https://github.com/srtimsina/DevOps/tree/master/wordpress>