Don't Destroy Your Machine With Development Sacrifice the Vagrant Box Instead

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Today's Topics

1. What is Vagrant?

2. Sharing Your Environment

3. Sharing Files

4. OS Level Testing – AKA Help! My Machine Is On Fire

5. Vagrant on Fedora

6. Fedora on Vagrant on ????

7. Extra Credit

8. Questions & Workshop
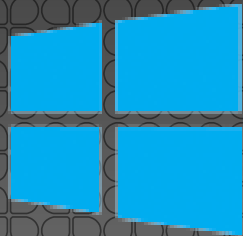
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What is Vagrant?

What is Vagrant?

- Software Tooling For Spinning up Virtual Machines
- Written In Ruby
- Developed by Mitchel Hashimoto (@mitchellh)
- Maintained by Hashicorp

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What is Vagrant?

- Runs on top of Windows/Mac/Linux

What is Vagrant?

- Vagrant user's interface through `vagrant` cli tool:

  - vagrant up

  - vagrant ssh

  - vagrant destroy

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"Who needs that? We can already spin up VMs without Vagrant"

Sharing Your Environment

Sharing Your Env

- The Vagrantfile – A Single File That:
  - Defines base disk image
    - Fedora, Debian, Suse
  - Defines any provisioning information needed
    - Run a Shell Script
    - Run Ansible Playbook

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Demo Failure Incoming!

"Hmm. That is neat, but I have my own script for provisioning VMs. It's pretty slick"

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Your Custom Script Doesn't Translate Well

Sharing Your Env

- Many Many Projects Use Vagrant For Sharing
  - Eclipse Che
    - https://github.com/eclipse/che/blob/master/Vagrantfile
  - OpenShift
    - https://www.openshift.org/vm/
  - Gluster
    - https://github.com/gluster/glusterfs/blob/master/extras/devel-tools/devel-vagrant/Vagrantfile
  - Atomic Developer Bundle
    - https://github.com/projectatomic/adb-atomic-developer-bundle

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"But my files aren't in the VM...
What if I want to access them?"

Sharing Files

Sharing Files

- Vagrant Has A Goal To Make dev/test Easy

- Sharing Files has Traditionally Been Painful

- Vagrant Has Made This Much Easier

  - rsync, NFS, VirtualBox Shared Folder, Samba

- We made it even easier with SSHFS

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Sharing Files

- rsync Plugin
  - Not True Sharing (more like syncing)
- NFS Plugin
  - Only works on Mac/Linux Hosts
- VirtualBox Shared Folders Plugin
  - Only works if you are using Vbox as Hypervisor
- Samba Plugin
  - Only for Windows Hosts

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Sharing Files

- SSHFS Plugin
  - Uses SSHFS
  - Works on Windows/Mac/Linux
  - Works on any Hypervisor
  - Works with 3rd Party Hosts
  - Can Do Reverse Mounts

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Demo Failure Incoming!

"It's OK I guess"

OS Level Testing

Help! My Machine is On Fire!

~~OS Level Testing~~

OS Level Testing

- How can Vagrant help with OS development/test?

- VMs isolate host OS from bleeding edge software

- Automated Provisioning and Quick up/destroy

  - Helps to develop, test, and repeat

- Allows for easy testing on other OS as well

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OS Level Testing

- One Example: Docker Bug Testing

  - Bleeding Edge – Changes All The Time

  - A new bug is discovered:

    - Is the bug in updates-testing vs stable?
    - Does the bug show itself in CentOS?
    - Does the bug show itself in Debian?

  - You can use Vagrant to quickly test all of these scenarios

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Demo Failure Incoming!
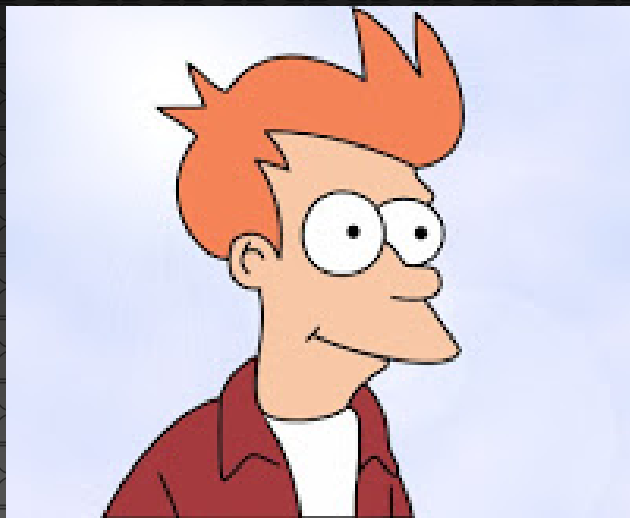
"That's cool. How do I get it?"

Vagrant On Fedora

Vagrant on Fedora

- vagrant-libvirt plugin allows easy integration

  - Uses libvirt/kvm as hypervisor

- Vagrant and the vagrant-libvirt plugin are packaged for Fedora

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Vagrant on Fedora

- Getting Started:
  - sudo dnf install vagrant-libvirt
  - sudo systemctl start libvirtd virtlogd
  - sudo usermod –a –G libvirt $USER
  - vagrant init fedora/24-cloud-base
  - vagrant up

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Fedora on Vagrant on ????

Fedora on Vagrant on ????

- Fedora Cloud WG produces Vagrant Images
  - Can find download through getfedora.org
  - Or download from atlas.hashicorp.org
    - Redirects to download from our mirrors

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Fedora on Vagrant on ????

Atlas

![Fedora logo] **fedora**

Fedora is a Linux-based operating system that provides users with access to the latest free and open source software, in a stable, secure and easy to manage form. Fedora is the largest of many free software creations of the Fedora Project.

📦 Boxes

fedora/24-cloud-base Fedora Cloud Base Box	v20160621 (last release 1 month ago) 2,242 downloads
fedora/24-atomic-host Fedora Atomic Host Box	v20160721 (last release 1 day ago) 150 downloads
fedora/23-atomic-host Fedora Atomic Host Box	v20160607 (last release 2 months ago) 3,711 downloads
fedora/23-cloud-base Fedora Cloud Base Box	v20151030 (last release 9 months ago) 23,304 downloads

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Fedora on Vagrant on ????

- These Fedora Vagrant Boxes can be run on:
  - Windows/Mac/Linux
  - VirtualBox/Libvirt... Maybe hyperv in the future
- If you like Mac/Windows then you can still have Fedora!
  - Perhaps a target audience we have missed in the past

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Extra Credit

EC: Vagrant + Ansible

- You can use an ansible provisioner with Vagrant
  - http://docs.vagrantup.com/v2/provisioning/ansible.html
- Re-usable – can be applied to more than just Vagrant

- Example:
```
tmp.vm.provision "ansible" do |ansible|
    ansible.verbose = 'v'
    ansible.playbook = "playbook.yml"
end
```

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EC: Multi-Machine Vagrant

- You can use Vagrant to test Multi-Node Environments
  - https://www.vagrantup.com/docs/multi-machine/
- Usefule for Automating Multi-Node Setup

- Example:

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EC: Multi-Machine Vagrant

```
Vagrant.configure("2") do |config|
  config.vm.provision "shell", inline: "echo Hello"

  config.vm.define "web" do |web|
    web.vm.box = "apache"
  end

  config.vm.define "db" do |db|
    db.vm.box = "mysql"
  end
end
```

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Questions?

Contact:
dusty@dustymabe.com

Workshop

Workshop

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