

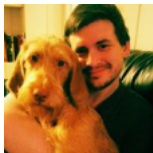
Vagrant

Development Environments Made Easy

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Introduction



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Obligatory statement

“All opinions are my own
and not that of my
employer(s).”

Credentials

Using **Vagrant** since 1.0

(now 1.6.5)

when it was just a **Ruby** gem

(now a full program)

Agenda

- ✓ Introduction
- ✓ What is Vagrant?
- ✓ Installation
- ✓ Basic configuration
- ✓ Advanced usage

What is Vagrant?



Vagrant makes development environments easy.

What does Vagrant do?

Creates and configures **lightweight**, **reproducible**, and **portable** development environments.

The value of Vagrant



vagrant up

A wild development environment appears!

Bringing machine 'default' up with 'virtualbox' provider...

==> default: Importing base box 'precise64'...

==> default: Setting the name of the VM: lanager_default_1400390353743_74044

==> default: Preparing network interfaces based on configuration...

==> default: Forwarding ports...

==> default: Booting VM...

==> default: Waiting for machine to boot. This may take a few minutes...

==> default: Machine booted and ready!

That's it.

- ✓ No more “works on my machine”
- ✓ No more rebuilding a shared dev server
- ✓ Everyone gets their own versioned dev environment

Under the hood

- ✓ Ruby
- ✓ Choice of virtualization
 - ✓ Virtualbox
 - ✓ VMware, if you pay
 - ✓ Many others via plugins

Installing Vagrant

- ✓ vagrantup.com
- ✓ Native packages
- ✓ Don't install via Rubygems

Vagrantfile is Ruby

```
Vagrant.configure("2") do |config|  
  config.vm.guest = :linux  
  config.vm.box = "precise64"  
  config.vm.box_url = "http://files.vagrantup.com/precise64.box"  
  config.vm.network :forwarded_port, guest: 80, host: 8080  
  config.vm.network :forwarded_port, guest: 3306, host: 3307  
  config.vm.provision :shell, :inline => $script  
end
```

Breakdown

✓ Declarative configuration

Declaration

```
Vagrant.configure("2") do |config|  
end
```

Guest nature

```
config.vm.guest = :linux
```

1.6+ supports :windows, too.

Box identity

```
config.vm.box = "precise64"  
config.vm.box_url = "http://files.vagrantup.com/precise64.box"
```

Caching

Boxes are

✓ cached

✓ copied on use

Network settings

```
config.vm.network :forwarded_port, guest: 80, host: 8080  
config.vm.network :forwarded_port, guest: 3306, host: 3307
```

Default for :linux

```
config.vm.network :forwarded_port, guest: 22, host: 2222
```

Provisioning

```
config.vm.provision :shell, :inline => $script
```

More later...

Any Ruby is valid in config

```
$script = <<SCRIPT
  if [ ! -f "$HOME/.provisioned" ]; then
    # Bind MySQL to all of the box's NICs to enable external access
    sed -i 's/bind-address;/bind-address/g' /etc/mysql/my.cnf
    sudo service mysql restart
  fi
SCRIPT
```

Advanced Usage

- ✓ Multi-VM
- ✓ Provisioning with configuration management systems (Chef, Puppet, etc.)
- ✓ Plugins
- ✓ Real world usage

Multiple machines, too!

```
Vagrant.configure("2") do |config|
  config.vm.define "web" do |web|
    web.vm.box = "apache"
  end
  config.vm.define "db" do |db|
    db.vm.box = "mysql"
  end
end
```

Provisioning

Base installation -> Everything

Shell scripts, inline or in a file

```
config.vm.provision :shell, :inline => $script
```

Config Management with Chef or Puppet

```
config.vm.provision "chef_solo" do |chef|
  chef.add_recipe "iptables"
  chef.json = {
    "iptables-ng" => {
      "rules" => {
        "filter" => {
          "INPUT" => {
            "default" => "ACCEPT [0:0]",
            "established" => {
              "rule" => "--match state --state ESTABLISHED,RELATED --jump ACCEPT"
            }
          }
        }
      }
    }
  }
end
```

Plugins

General helpers:

- ✓ vagrant-cachier
- ✓ vagrant-pristine
- ✓ vagrant-vbguest
- ✓ vagrant-rdp

Plugins

Useful for Chef provisioning:

- ✓ vagrant-omnibus
- ✓ vagrant-berkshelf
- ✓ vagrant-ohai

Providers

Run Vagrant VMs anywhere!

aws azure **digitalocean** joyent
kvm **libvirt** lxc **openstack** parallels
rackspace softlayer **vsphere**

Usage in the real world

✓ [Lanager](#)

✓ [Gittip](#)

Resources

✓ [Vagrant docs](#)

This talk is open source

<https://github.com/colindean/talks>

Go try it out

vagrantup.com

Thanks

[@colindean](#)

IBM Watson is hiring!

<http://j.mp/watson-pgh-jobs>