

Section 5

Automation – Continuous Delivery





In this Section, we are going to take a look at...

- What is continuous delivery
- Your first test environment
- Configuring and launching Vagrant
- Serverspec
- Am I ready for production



1x



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0:12 / 9:58

In this Video, we are going to take a look at...

- What is continuous delivery (CD)
- What does a CD system look like
- What about Continuous deployment

What Is Continuous Delivery?



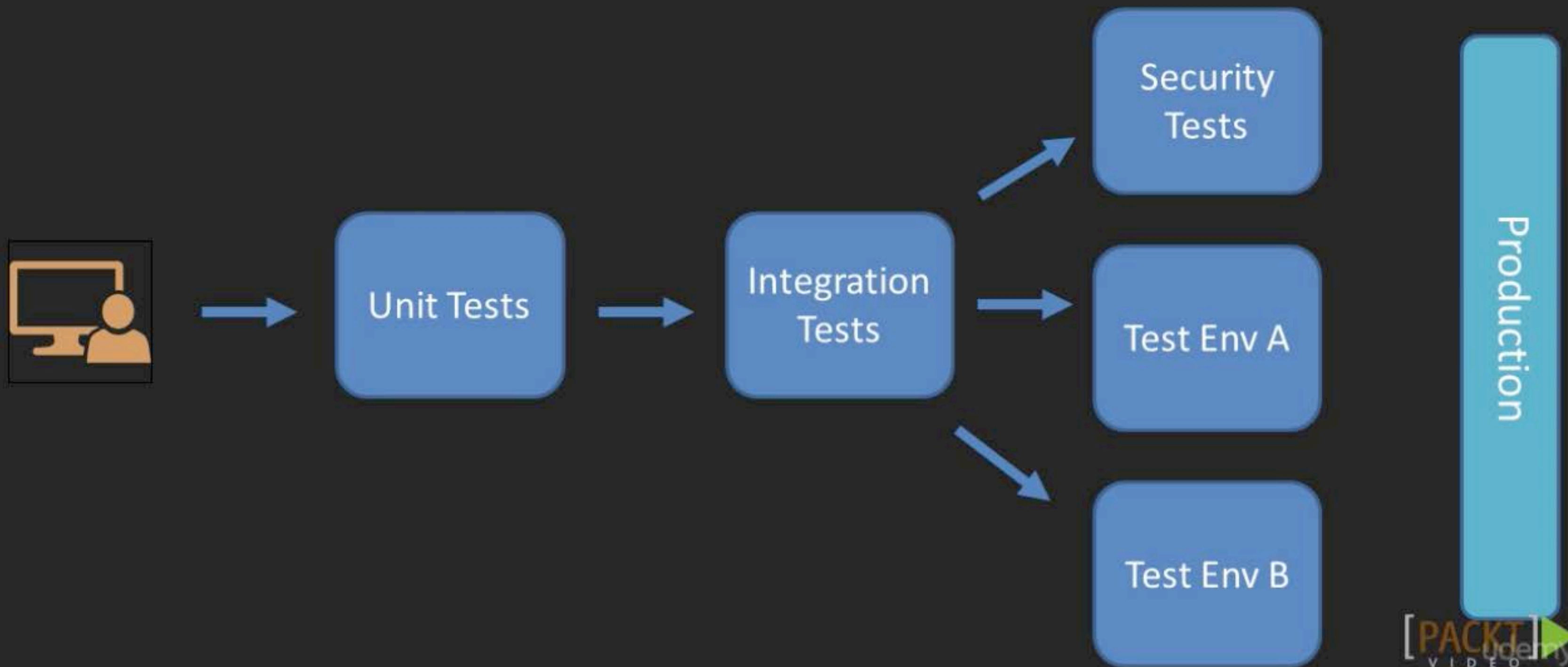
What Is Continuous Delivery?



What Is Continuous Delivery?

- Automated/Repeatable
- Run to the pain
- Version controlled
- Always deployable
- Everyone's responsibility

What Does a CD System Look Like?



Next Video

Your First Test Environment

Video 5.2

Your First Test Environment

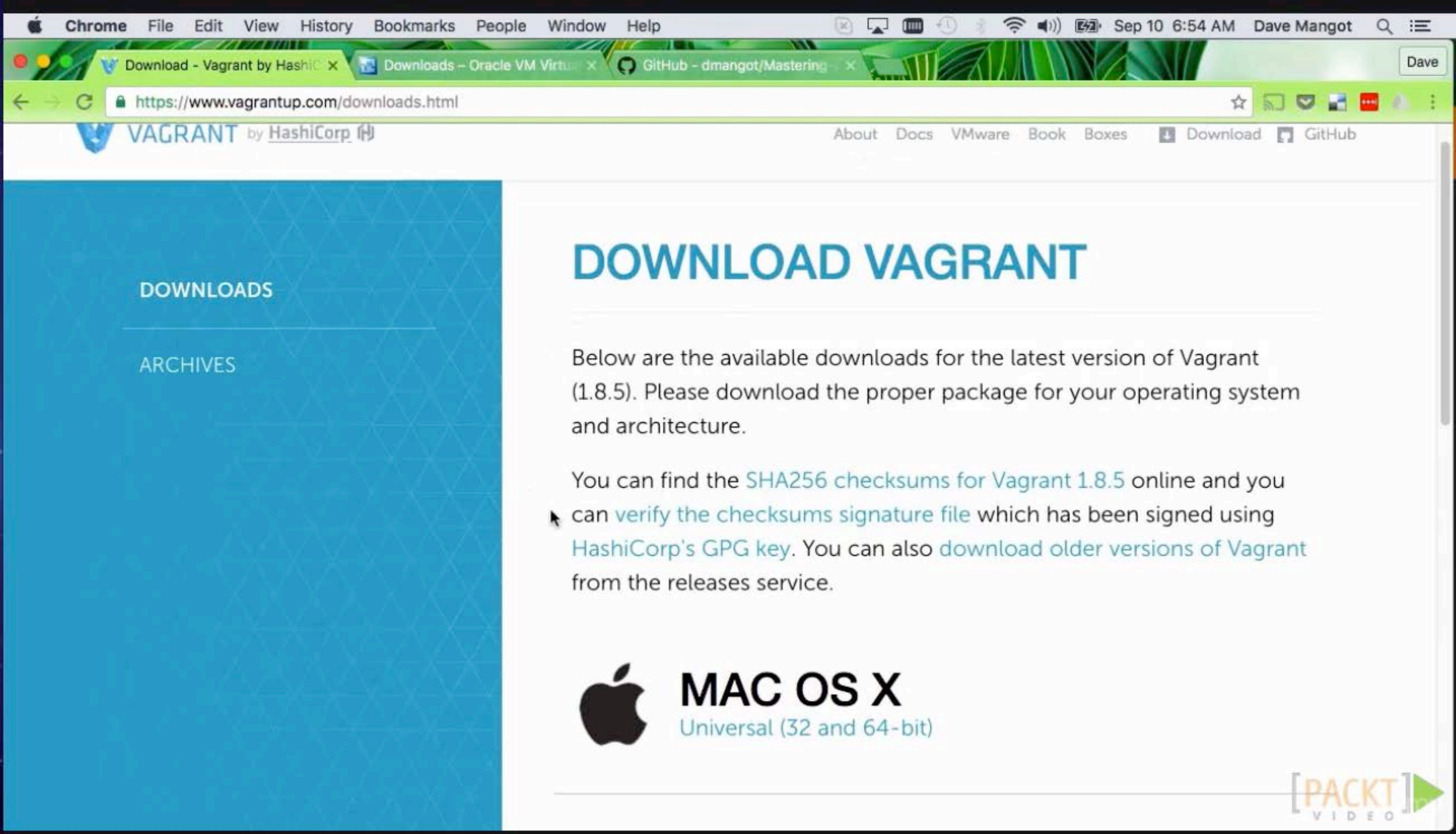


In this Video, we are going to take a look at...

- Setting up our environment
- Your first virtual machine
- Working with Vagrant
- Working with the Vagrantfile

Setting Up Our Environment

- Install Vagrant (<https://www.vagrantup.com/downloads.html>)
- Install VirtualBox (<https://www.virtualbox.org/wiki/Downloads>)
- Vagrant box add ubuntu/trusty64
 - Mac OS X and Linux: ~/.vagrant.d/boxes
 - Windows: C:/Users/USERNAME/.vagrant.d/boxes
- <https://github.com/dmangot/Mastering-DevOps>



DOWNLOADS

ARCHIVES

DOWNLOAD VAGRANT

Below are the available downloads for the latest version of Vagrant (1.8.5). Please download the proper package for your operating system and architecture.

You can find the [SHA256 checksums for Vagrant 1.8.5](#) online and you can [verify the checksums signature](#) file which has been signed using HashiCorp's GPG key. You can also [download older versions of Vagrant](#) from the releases service.



MAC OS X

Universal (32 and 64-bit)



VirtualBox

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- About
- Screenshots
- Downloads
- Documentation
 - End-user docs
 - Technical docs
- Contribute
- Community

Download VirtualBox

Here, you will find links to VirtualBox binaries and its source code.

VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

- **VirtualBox platform packages.** The binaries are released under the terms of the GPL version 2.
 - **VirtualBox 5.1.4 for Windows hosts** ⇒ [x86/amd64](#)
 - **VirtualBox 5.1.4 for OS X hosts** ⇒ [amd64](#)
 - **VirtualBox 5.1.4 for Linux hosts**
 - **VirtualBox 5.1.4 for Solaris hosts** ⇒ [amd64](#)
- **VirtualBox 5.1.4 Oracle VM VirtualBox Extension Pack** ⇒ [All supported platforms](#)
Support for USB 2.0 and USB 3.0 devices, VirtualBox RDP and PXE boot for Intel cards. See [this chapter](#) from the User Manual for an introduction to this Extension Pack. The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#).
Please install the extension pack with the same version as your installed version of VirtualBox:
*If you are using **VirtualBox 5.0.26**, please download the extension pack ⇒ [here](#).*
- **VirtualBox 5.1.4 Software Developer Kit (SDK)** ⇒ [All platforms](#)

See the [changelog](#) for what has changed.

You might want to compare the [SHA256](#) checksums or the [MD5](#) checksums to verify the integrity of downloaded packages. *The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!*

Note: After upgrading VirtualBox it is recommended to upgrade the guest additions as well.



vagrant@vagrant-ubuntu-trus...

```
blackmacbook:Video2 dave$ vagrant box list
ubuntu/trusty64 (virtualbox, 20160907.0.0)
blackmacbook:Video2 dave$ cat Vagrantfile
# -*- mode: ruby -*-
# vi: set ft=ruby :
```

```
Vagrant.configure("2") do |config|
  # Every Vagrant development environment requires a box. You can search for
  # boxes at https://atlas.hashicorp.com/search.
  config.vm.box = "ubuntu/trusty64"
  config.vbguest.auto_update = false
  #
  config.vm.provider "virtualbox" do |vb|
    # Display the VirtualBox GUI when booting the machine
    vb.gui = true

    # Customize the amount of memory on the VM:
    vb.memory = "256"
  end

  # Enable provisioning with a shell script. Additional provisioners such as
  # Puppet, Chef, Ansible, Salt, and Docker are also available. Please see the
  # documentation for more information about their specific syntax and use.
  # config.vm.provision "shell", inline: <<-SHELL
  #   apt-get update
  #   apt-get install -y apache2 graphite-web
  # SHELL
end
blackmacbook:Video2 dave$
```

Working with Vagrant



VAGRANT

Section 5, Lecture 21

2. vagrant

Video2_default_1473515939720_79864 [Running]

vagrant@vagrant-ubuntu-trus...

```
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
default: Adapter 1: nat
==> default: Forwarding ports...
default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
default: SSH address: 127.0.0.1:2222
default: SSH username: vagrant
default: SSH auth method: private key
default: Warning: Remote connection disconnect. Retrying...
default: Warning: Remote connection disconnect. Retrying...
default: Warning: Remote connection disconnect. Retrying...
default:
default: Vagrant insecure key detected. Vagrant will automatically
default: this with a newly generated keypair for better security
default:
default: Inserting generated public key within guest...
default: Removing insecure key from the guest if it's present...
default: Key inserted! Disconnecting and reconnecting using new
==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
default: The guest additions on this VM do not match the installed version of
default: VirtualBox! In most cases this is fine, but in rare cases it can
default: prevent things such as shared folders from working properly. If you see
default: shared folder errors, please make sure the guest additions within the
default: virtual machine match the version of VirtualBox you have installed on
default: your host and reload your VM.
default:
default: Guest Additions Version: 4.3.36
default: VirtualBox Version: 5.0
==> default: Mounting shared folders...
```

default: /vagrant => /Users/dave/Google Drive/Mangot.Mastering.DevOps/Mastering-DevOps/Section5/Video2

blackmacbook:Video2 dave\$

Ubuntu 14.04.5 LTS vagrant-ubuntu-trusty-64 tty1

vagrant-ubuntu-trusty-64 login: _

vagrant@vagrant-ubuntu-trus...

Get cloud support with Ubuntu Advantage Cloud Guest:
<http://www.ubuntu.com/business/services/cloud>

0 packages can be updated.
0 updates are security updates.

New release '16.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

vagrant@vagrant-ubuntu-trusty-64:~\$ sudo apt-get install apache2 graphite-web

Reading package lists... Done

Building dependency tree

Reading state information... Done

The following extra packages will be installed:

apache2-bin apache2-data javascript-common libapr1 libaprutil1
libaprutil1-dbd-sqlite3 libaprutil1-ldap libjs-excanvas libjs-jquery-flot
libjs-prototype libjs-scriptaculous python-cairo python-django
python-django-tagging python-pyparsing python-tz python-whisper ssl-cert

Suggested packages:

apache2-doc apache2-suexec-pristine apache2-suexec-custom apache2-utils
python-memcache libapache2-mod-wsgi python-ldap python-mysqldb
graphite-carbon libjs-jquery-flot-docs python-psycopg2 python-psycopg
python-flup python-sqlite geoip-database-contrib gettext python-django-doc
ipython bpython libgdal1 python-rrdtool openssl-blacklist

The following NEW packages will be installed:

apache2 apache2-bin apache2-data graphite-web javascript-common libapr1
libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjs-excanvas
libjs-jquery-flot libjs-prototype libjs-scriptaculous python-cairo
python-django python-django-tagging python-pyparsing python-tz
python-whisper ssl-cert

0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.

Need to get 5,126 kB of archives.

After this operation, 44.0 MB of additional disk space will be used.

Do you want to continue? [Y/n]

vagrant@vagrant-ubuntu-trus...

```
==> default: Setting up libjs-scriptaculous (1.9.8-2) ...
==> default: Setting up python-cairo (1.8.8-1ubuntu5) ...
==> default: Setting up python-django (1.6.1-2ubuntu0.14) ...
==> default: Setting up python-django-tagging (1:0.3.1-3) ...
==> default: Setting up python-pyparsing (2.0.1+dfsg1-1build1) ...
==> default: Setting up python-whisper (0.9.12-1) ...
==> default: Setting up ssl-cert (1.0.33) ...
==> default: Setting up python-tz (2012c-1ubuntu0.1) ...
==> default: Setting up graphite-web (0.9.12+debian-3) ...
==> default: Processing triggers for libc-bin (2.19-0ubuntu6.9) ...
==> default: Processing triggers for ureadahead (0.100.0-16) ...
==> default: Processing triggers for ufw (0.34-rc-0ubuntu2) ...
```

```
blackmacbook:Video2 dave$
blackmacbook:Video2 dave$ vagrant ssh
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 3.13.0-95-generic x86_64)
```

```
* Documentation:  https://help.ubuntu.com/

System information disabled due to load higher than 1.0

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud
```

```
2 packages can be updated.
0 updates are security updates.

New release '16.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.
```

```
vagrant@vagrant-ubuntu-trusty-64:~$ which apachectl
/usr/sbin/apachectl
vagrant@vagrant-ubuntu-trusty-64:~$ dpkg -l | grep graphite
ii  graphite-web          0.9.12+debian-3          all          Enterprise Scalable Realtime Graphing
ii  libgraphite2-3:amd64  1.3.6-1ubuntu0.14.04.1  amd64        Font rendering engine for Complex Scripts -- library
vagrant@vagrant-ubuntu-trusty-64:~$
```

all Enterprise Scalable Realtime Graphing
amd64 Font rendering engine for Complex Scripts -- library



2. vagrant@vagrant-ubuntu-trusty-64: ~ (bash)

vagrant@vagrant-ubuntu-trus...

```

=> default: Setting up python-tz (2012c-1ubuntu0.1) ...
=> default: Setting up graphite-web (0.9.12+debian-3) ...
=> default: Processing triggers for libc-bin (2.19-0ubuntu6.9) ...
=> default: Processing triggers for ureadahead (0.100.0-16) ...
=> default: Processing triggers for ufw (0.34-rc-0ubuntu2) ...
  
```

blackmacbook:Video2 dave\$

blackmacbook:Video2 dave\$ vagrant ssh

Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 3.13.0-95-generic x86_64)

* Documentation: <https://help.ubuntu.com/>

System information disabled due to load higher than 1.0

Get cloud support with Ubuntu Advantage Cloud Guest:
<http://www.ubuntu.com/business/services/cloud>

2 packages can be updated.
 0 updates are security updates.

New release '16.04.1 LTS' available.
 Run 'do-release-upgrade' to upgrade to it.

vagrant@vagrant-ubuntu-trusty-64:~\$ which apachectl
 /usr/sbin/apachectl

vagrant@vagrant-ubuntu-trusty-64:~\$ dpkg -l | grep graphite

ii	graphite-web	0.9.12+debian-3	all	Enterprise Scalable Realtime Graphing
ii	libgraphite2-3:amd64	1.3.6-1ubuntu0.14.04.1	amd64	Font rendering engine for Complex Scripts -- library

vagrant@vagrant-ubuntu-trusty-64:~\$ ls

vagrant@vagrant-ubuntu-trusty-64:~\$ exit

logout

Connection to 127.0.0.1 closed.

blackmacbook:Video2 dave\$ vagrant destroy -f

=> default: Forcing shutdown of VM...

=> default: Destroying VM and associated drives...

blackmacbook:Video2 dave\$



VAGRANT

Next Video

Configuring and Launching with Vagrant

Dave Mangot

Video 5.3

Configuring and Launching with Vagrant



What You Will Need?

- Install Vagrant (<https://www.vagrantup.com/downloads.html>)
- Install Virtualbox (<https://www.virtualbox.org/wiki/Downloads>)
- `vagrant box add ubuntu/trusty64`
- <https://github.com/dmangot/Mastering-DevOps>

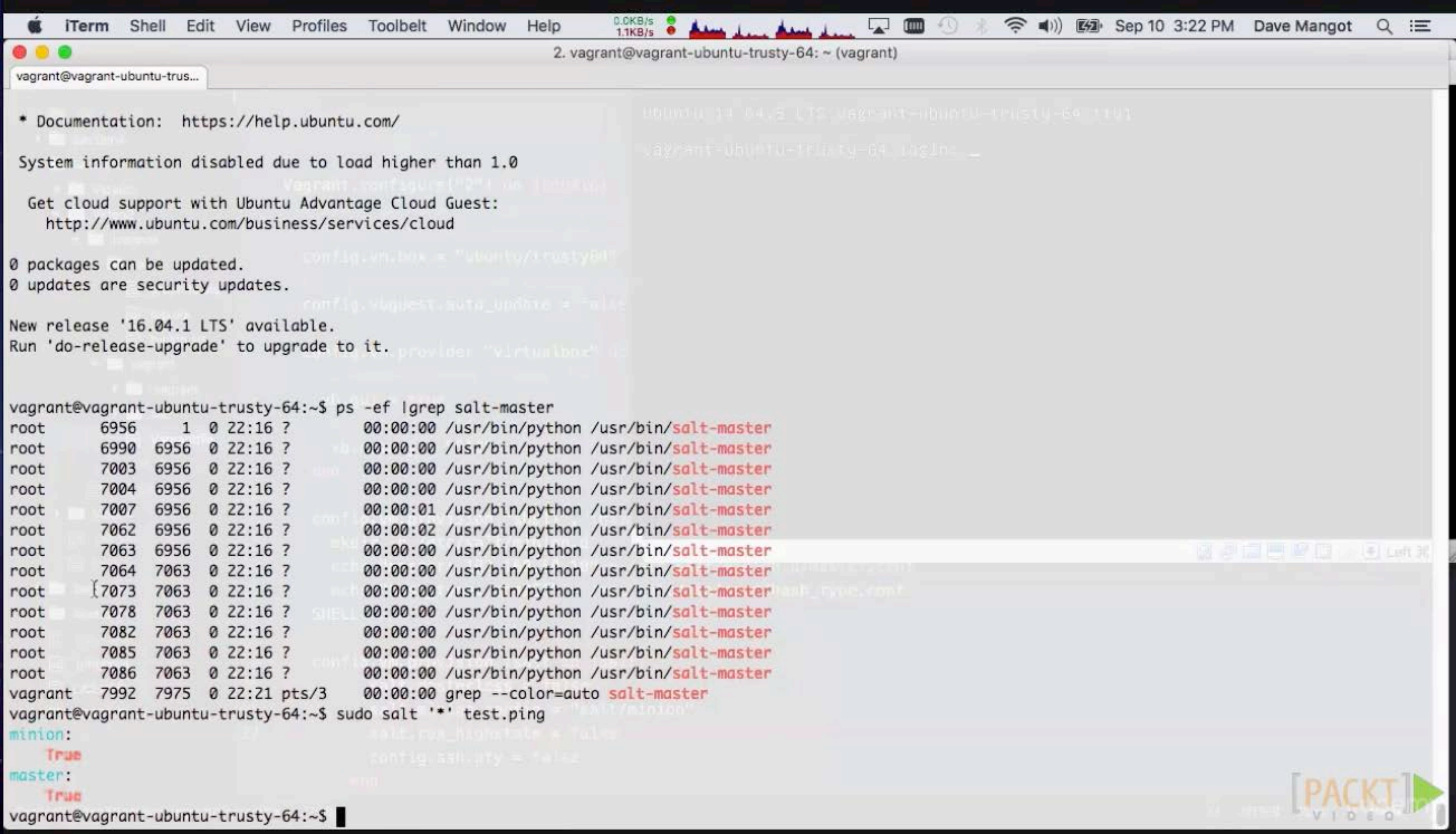
What You Will Need?

```
toplevel/  
├─ salt  
│   ├── graphite.sls  
│   ├── top.sls  
│   └─ tuning.sls  
└─ vagrant  
    ├── Vagrantfile  
    └─ salt  
        ├── key  
        │   ├── master.pem  
        │   ├── master.pub  
        │   ├── minion.pem  
        │   └─ minion.pub  
        └─ minion
```


07:58/12:47


```
Salt successfully configured and installed!
run_overstate set to false. Not running state.overstate.
run_highstate set to false. Not running state.highstate.
orchestrate is nil. Not running state.orchestrate.
=> minion: Running provisioner: shell...
minion: Running: inline script
=> minion: stdin: is not a tty
=> minion: Running provisioner: salt...
Uploading minion keys.
Checking if salt-minion is installed
salt-minion found
Checking if salt-call is installed
salt-call found
Salt binaries found. Configuring only.
Salt successfully configured!
run_overstate set to false. Not running state.overstate.
run_highstate set to false. Not running state.highstate.
orchestrate is nil. Not running state.orchestrate.
=> minion: Running provisioner: shell...
minion: Running: inline script
=> minion: stdin: is not a tty
=> minion: mv:
=> minion: cannot stat '/tmp/minion.p*': No such file or directory
=> minion: salt-minion stop/waiting
=> minion: salt-minion start/running, process 3793
blackmacbook:vagrant dave$ vagrant status
Current machine states:
master                running (virtualbox)
minion                running (virtualbox)

This environment represents multiple VMs. The VMs are all listed
above with their current state. For more information about a specific
VM, run 'vagrant status NAME'.
blackmacbook:vagrant dave$
```

* Documentation: <https://help.ubuntu.com/>

System information disabled due to load higher than 1.0

Get cloud support with Ubuntu Advantage Cloud Guest:
<http://www.ubuntu.com/business/services/cloud>

0 packages can be updated.
0 updates are security updates.

New release '16.04.1 LTS' available.

Run 'do-release-upgrade' to upgrade to it.

```
vagrant@vagrant-ubuntu-trusty-64:~$ ps -ef | grep salt-master
root      6956      1   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      6990    6956   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7003    6956   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7004    6956   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7007    6956   0 22:16 ?        00:00:01 /usr/bin/python /usr/bin/salt-master
root      7062    6956   0 22:16 ?        00:00:02 /usr/bin/python /usr/bin/salt-master
root      7063    6956   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7064    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7073    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7078    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7082    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7085    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
root      7086    7063   0 22:16 ?        00:00:00 /usr/bin/python /usr/bin/salt-master
```

```
vagrant@vagrant-ubuntu-trusty-64:~$ sudo salt '*' test.ping
```

minion:

True

master:

True

```
vagrant@vagrant-ubuntu-trusty-64:~$
```



Dave Mangot

Video 5.4

Testing with Serverspec



In this Video, we are going to take a look at...

Implementing continuous delivery

Getting started with Serverspec

Testing our Salt states

Experimenting with ServerSpec

Implementing Continuous Delivery

Jenkins (jenkins.io), Go (go.cd), and so on

Severspec (serverspec.org), TestInfra (python), Test Kitchen (kitchen.ci), Rouster (ruby), and so on

Getting Started with Serverspec

<http://Serverspec.org>

<https://github.com/dmangot/Mastering-DevOps>





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postmodern / chruby

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🍴 Fork 154

- ↔ Code
- 🔔 Issues 45
- 🔗 Pull requests 17
- 📖 Wiki
- 📡 Pulse
- 📊 Graphs

Changes the current Ruby

🕒 847 commits

🍴 9 branches

📦 21 releases

👤 33 contributors

Branch: master ▾

New pull request

Find file

Clone or download ▾

postmodern Make the 'all' task a no-op.		Latest commit 83431e7 on Apr 8
📁 benchmarks	Fixed ruby versions used by the benchmarks.	3 years ago
📁 bin	Split the chruby-exec command into smaller pieces.	2 years ago
📁 homebrew	Update brew formula opt shortcut.	2 years ago
📁 pkg	Added PGP signature for v0.3.9	2 years ago
📁 rpm	Updated the rpm spec for 0.3.9.	2 years ago

2. vagrant@vagrant-ubuntu-trusty-64: ~ (bash)

ubuntu-trus...

vagrant dave\$ which ruby

rubyhub.com/postmodern/chruby

rubies/ruby-2.3.1/bin/ruby

vagrant dave\$

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Star1,636

Fork154

Code

Issues46

Pull requests12

Wiki

Pulse

Graphs

Changes the current Ruby

847 commits

19 branches

21 releases

33 contributors

Branch: master

100% | 41.000.000

Find file

Clone or download

postmodern

Makes the 'all' task a no-op.

latest commit 83431e7 on Apr 8

benchmarks

Fixed ruby versions used by the benchmarks.

4 years ago

bin

Splits the chruby-exec command into smaller pieces.

2 years ago

doc/README

Update how to install chruby.

2 years ago

lib/pkg

Added PGP signature for v0.1.2

1 year ago

rpm

Updated the rpm spec for 0.1.2

1 year ago



RSpec tests for your servers configured
by CFEngine, Puppet, Ansible, Itamae or anything else.

ut V2

pec/Specinfra v2 has been just released. [See the document about v2.](#)

ut

verances, you can write RSpec tests for checking your servers are configured correctly.

serverspec.org



Installation

Copy this line to your application's Gemfile:

```
gem 'serverspec'
```

Then execute:

```
bundle
```

Call it yourself as:

```
bundle install serverspec
```

Getting Started

```
serverspec-init
```

Select OS type:

UN*X

Windows

```
vagrant dave$ which ruby
/usr/bin/ruby
vagrant dave$ gem install serverspec
serverspec-2.36.1.gem (100%)
Successfully installed serverspec-2.36.1
Documentation for serverspec-2.36.1
Generating documentation for serverspec-2.36.1
Generating documentation for serverspec after 0 seconds
vagrant dave$ serverspec-init
Generating Vagrantfile
Generating sample_spec.rb
Generating helper.rb
vagrant dave$ ls
```

```
Vagrantfile      salt      spec
vagrant dave$ ls spec/
spec_helper.rb
vagrant dave$ ls spec/master/
rb      sample_spec.rb
vagrant dave$ cd spec/master/
master dave$ cat sample_spec.rb
'helper'

serverspec
age('httpd'), :if => os[:family] == 'redhat' do
  be_installed }

age('apache2'), :if => os[:family] == 'ubuntu' do
  be_installed }

age('httpd'), :if => os[:family] == 'redhat' do
  be_enabled }
  be_running }

age('apache2'), :if => os[:family] == 'ubuntu' do
  be_enabled }
  be_running }

age('org.apache.httpd'), :if => os[:family] == 'darwin' do
  be_enabled }
  be_running }

UNIX
Windows
80) do
```

Vagrantfile graphite_spec.rb

```
1 require 'spec_helper'
2
3 describe package('graphite-web') do
4   it { should be_installed }
5 end
6
7 describe package('graphite-carbon') do
8   it { should be_installed }
9 end
10
11 # What About the carbon cache listener?
12 #describe port(80) do
13 #  it { should be_listening }
14 #end
15
16 # What about the carbon-cache process?
17
```



```

graphite-web"
  installed (FAILED - 1)

graphite-carbon"
  installed (FAILED - 2)

describe package('graphite-web') do
  it { should be_installed }
end

describe package('graphite-carbon') do
  it { should be_installed }
end

"graphite-web" should be installed
master'
Error: it { should be_installed }
  installed Package "graphite-web" to be installed
  Password: ' /bin/sh -c dpkg-query\ -f\ '\$${Status}\'\ -W\ graphite-web\ \|\ grep\ -E\ '\^\(install\|hold\)\' ok\ installed\$'
spec
master/graphite_spec.rb:4:in `block (2 levels) in <top (required)>'

"graphite-carbon" should be installed
master'
Error: it { should be_installed }
  installed Package "graphite-carbon" to be installed
  Password: ' /bin/sh -c dpkg-query\ -f\ '\$${Status}\'\ -W\ graphite-carbon\ \|\ grep\ -E\ '\^\(install\|hold\)\' ok\ installed\$'
master/graphite_spec.rb:8:in `block (2 levels) in <top (required)>'

09 seconds (files took 6 minutes 25 seconds to load)
failures

rs:

master/graphite_spec.rb:4 # Package "graphite-web" should be installed
master/graphite_spec.rb:8 # Package "graphite-carbon" should be installed

```


ent represents multiple VMs. The VMs are all listed
 their current state. For more information about a specific
 ent status NAME`.

vagrant dave\$ vagrant ssh master

ubuntu 14.04.5 LTS (GNU/Linux 3.13.0-95-generic x86_64)

on: <https://help.ubuntu.com/>

ation disabled due to load higher than 1.0

upport with Ubuntu Advantage Cloud Guest:

www.ubuntu.com/business/services/cloud

6.04.1 LTS' available.

se-upgrade' to upgrade to it.

at-ubuntu-trusty-64:~\$ ps -ef | grep salt-master

```

1  0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
6945 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
6945 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
6945 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
6945 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
6945 1 23:34 ?      00:00:01 /usr/bin/python /usr/bin/salt-master
6945 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 0 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 1 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 1 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 1 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 1 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7042 1 23:34 ?      00:00:00 /usr/bin/python /usr/bin/salt-master
7959 0 23:35 pts/2  00:00:00 grep --color=auto salt-master

```

at-ubuntu-trusty-64:~\$ sudo salt-call state.highstate

ubuntu-trus...

```

new:
  1
old:
python2.7-pyparsing:
-----
new:
  1
old:
describe package('graphite-web') do
  if ! should_be_installed()
    return
  end
end

describe package('graphite-carbon') do
  if ! should_be_installed()
    return
  end
end

carbon-cache
service.running
True
The service carbon-cache is already running
23:35:58.929970
123.909 ms

```

```

fs.file-max
sysctl.present
True
Updated sysctl value fs.file-max = 200000
23:35:59.055897
34.203 ms

```

```

-----
fs.file-max:
  200000

```

local

[changed=2]

ubuntu-trus...

```

1
old:
carbon-cache
service.running
True
The service carbon-cache is already running
23:35:58.929970
123.909 ms

fs.file-max
sysctl.present
True
Updated sysctl value fs.file-max = 200000
23:35:59.055897
34.203 ms

fs.file-max:
200000

[changed=2]

run: 3
: 35.653 s
at-ubuntu-trusty-64:~$ exit

127.0.0.1 closed.
vagrant dave$ rake spec

```


ubuntu-trus...

```
fs.file-max
sysctl.present
True
Updated sysctl value fs.file-max = 200000
23:35:59.055897
34.203 ms
```

```
fs.file-max:
200000
```

```
local
[changed=2]
```

```
run: 3
35.653 s
```

```
at-ubuntu-trusty-64:~$ exit
```

```
127.0.0.1 closed.
```

```
vagrant dave$ rake spec
```

```
ruby/ruby-2.3.1/bin/ruby -I/Users/dave/.gem/ruby/2.3.1/gems/rspec-support-3.4.1/lib:/Users/dave/.gem/ruby/2.3.1/gems/rspec-core-3.4.4/exe/rspec --pattern spec/master/\*_spec.rb
```

```
ite-web"
installed
```

```
ite-carbon"
installed
```

```
37 seconds (files took 11.05 seconds to load)
```

Next Video

Am I Ready for Production?

Dave Mangot

Video 5.5

Am I Ready for Production?



In this Video, we are going to take a look at...

Deployment concepts

Canaries

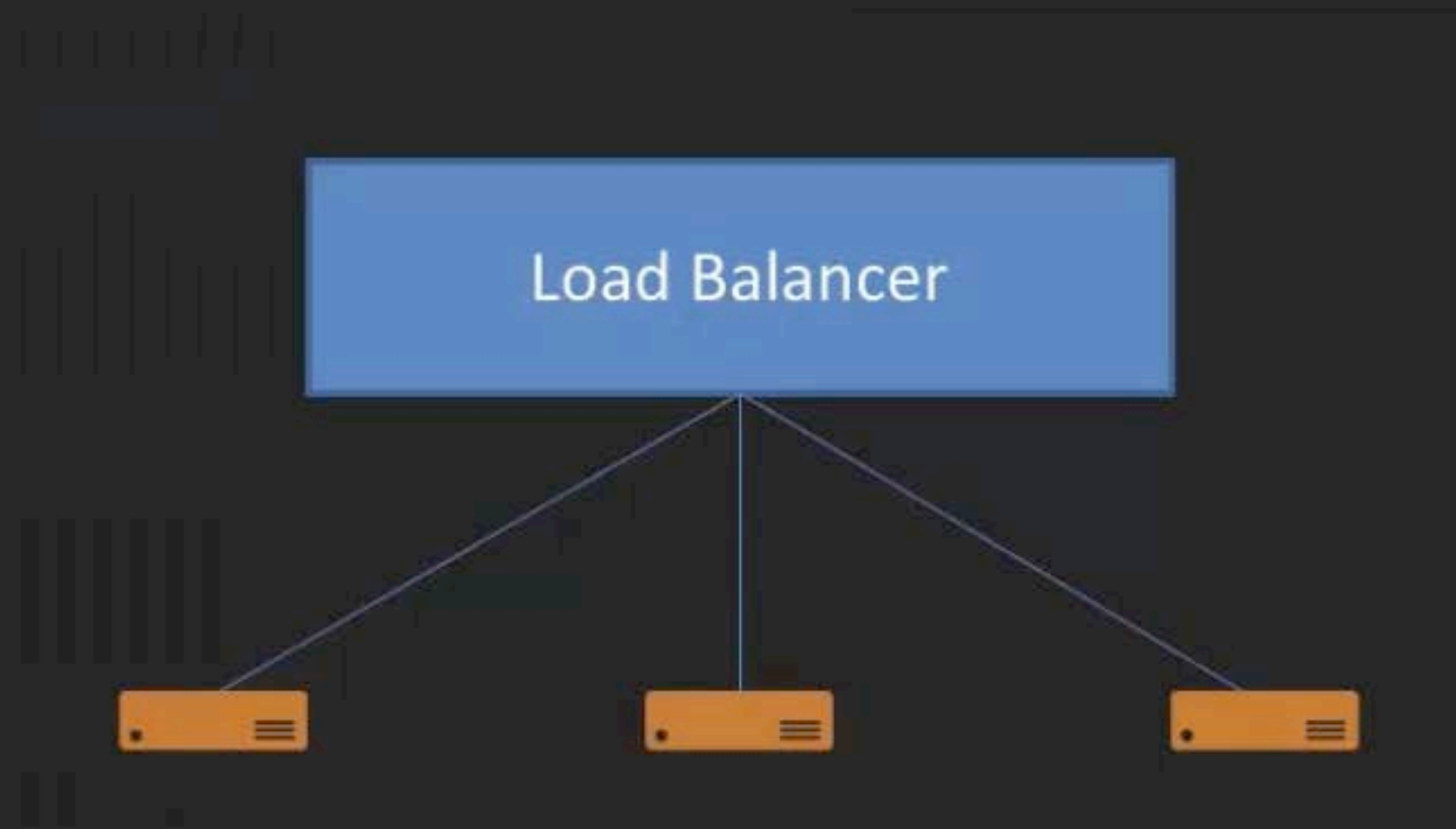
Rolling restarts

Blue/Green deployments

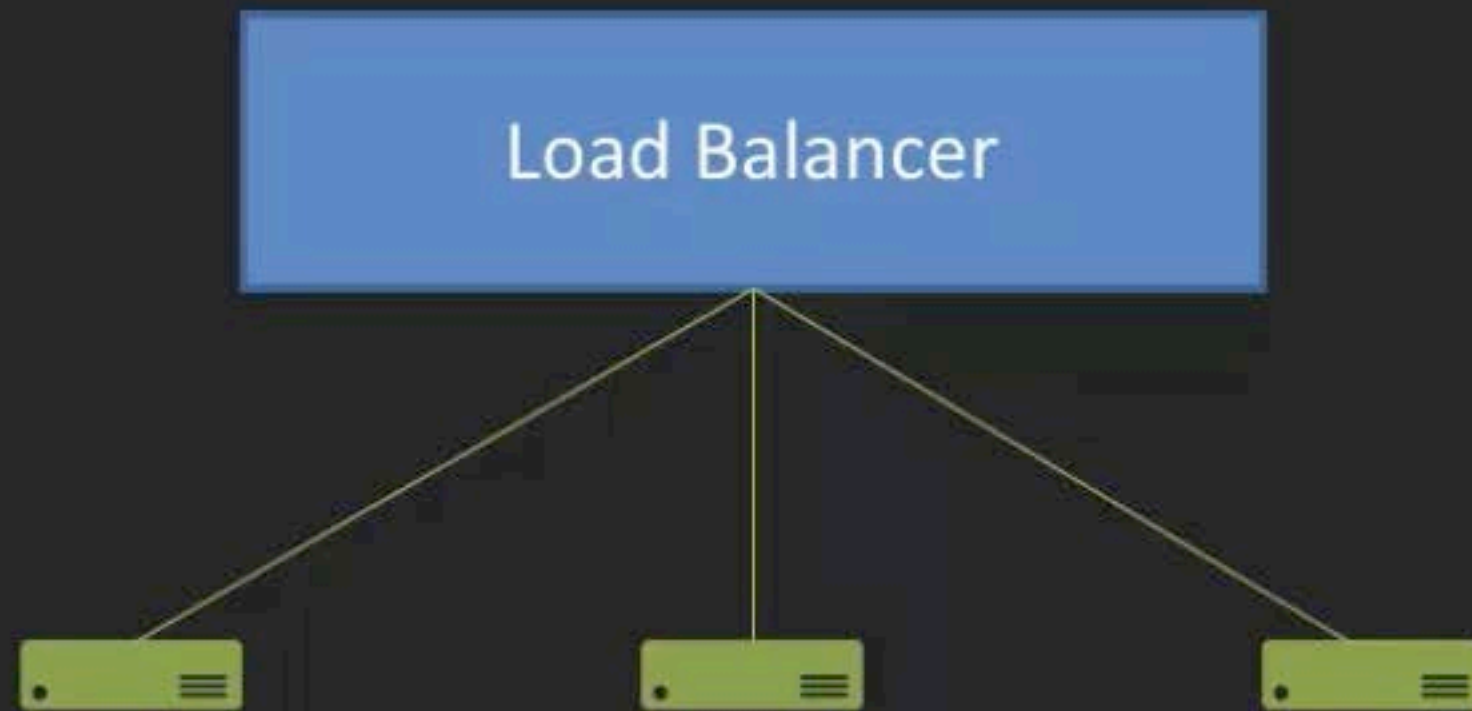
Deployment Concepts



Deployment Concepts

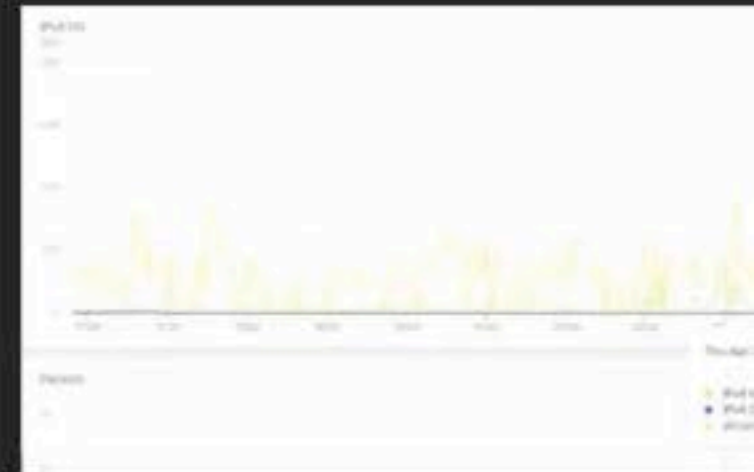


Deployment Concepts



Blue/Green Deployments

Elastic Load Balancer



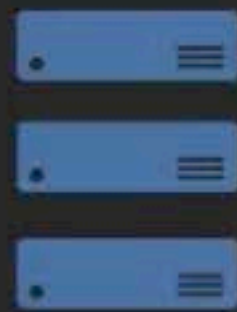
Blue/Green Deployments

Elastic Load Balancer



Blue/Green Deployments

Elastic Load Balancer



Next Section

Measurement