

Introduction to Vagrant

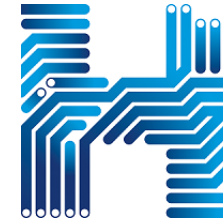
Agenda:

- **Part I: Introduction to Vagrant**
 - What is Vagrant?
 - Create an Ubuntu server in 3 easy steps
 - Interacting with Vagrant - the CLI
 - A look at the Vagrantfile
 - Vagrant provisioners
 - Vagrant providers
- **Part II: Installing Vagrant**
- **Part III: Creating a repeatable LAMP stack from scratch**



Who we are

- **Hays IT**
 - Lee Varga -
- **Automated IT Solutions**
 - Adam Cheney -
 - John Pikoulas -
 - Raju Uppalati -
 - Donald Simpson -



What is Vagrant?

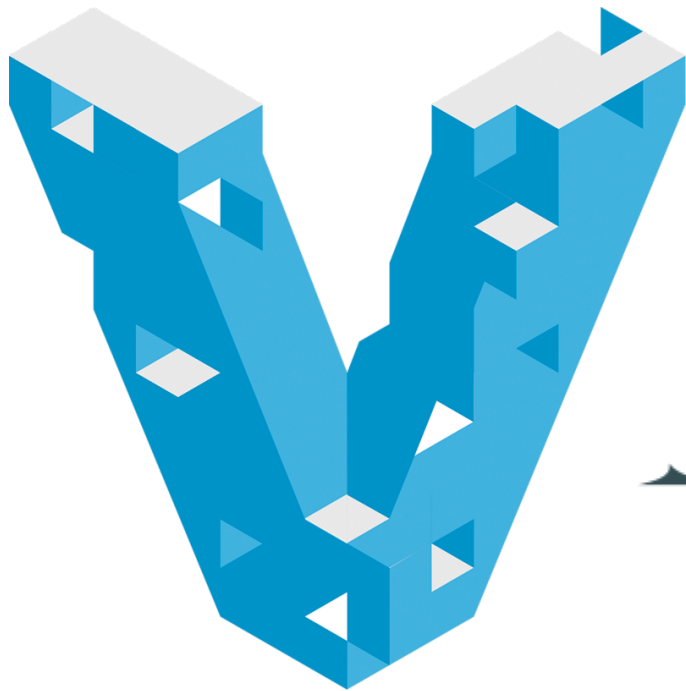


VAGRANT

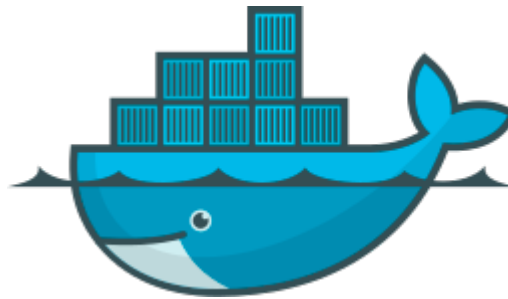
- **Build environments consistently**
- **Share environments easily**
- **Version-control environments**



Vagrant & Docker



VAGRANT



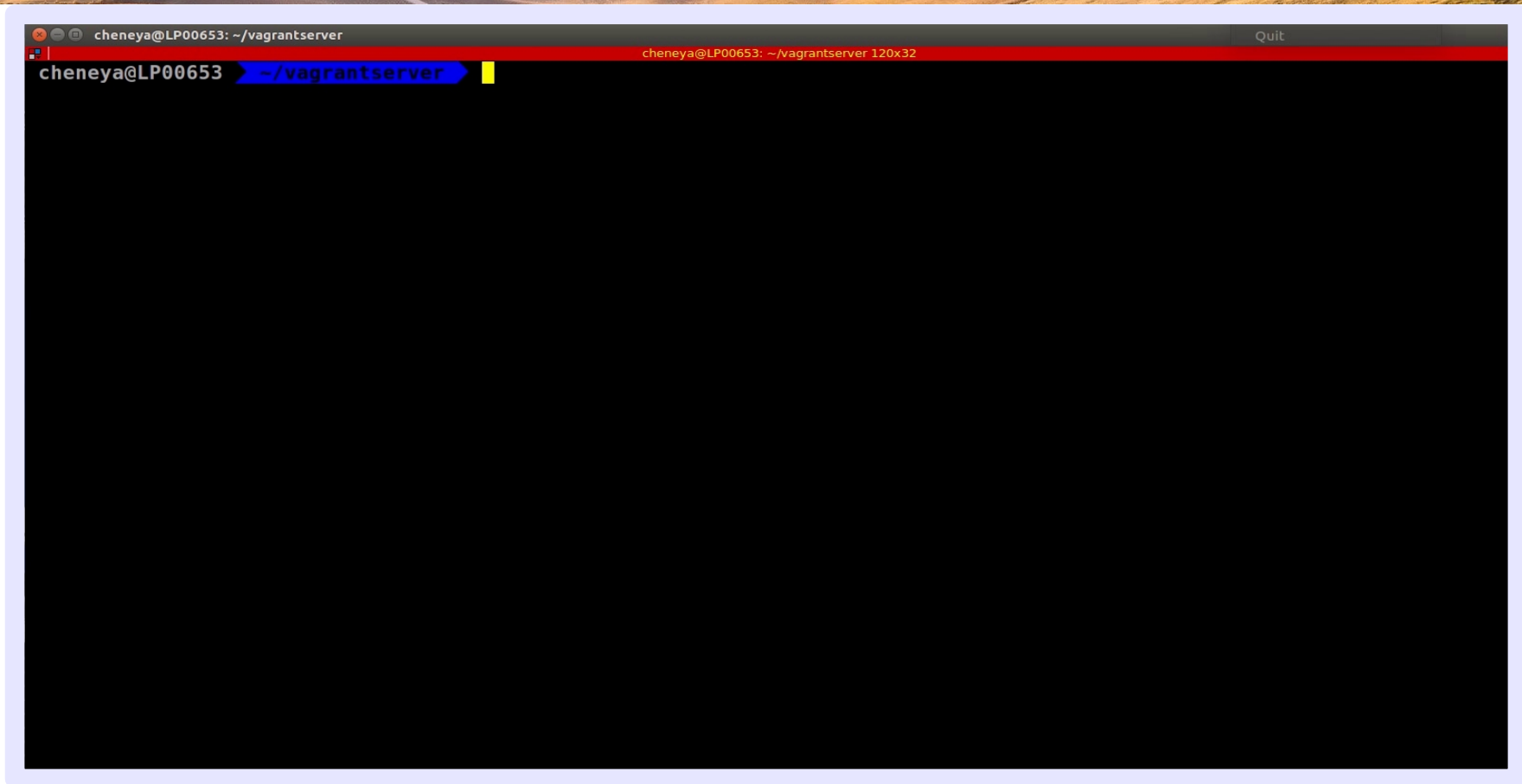
docker



Automated IT Solutions

DevOps and Cloud Consultancy Services

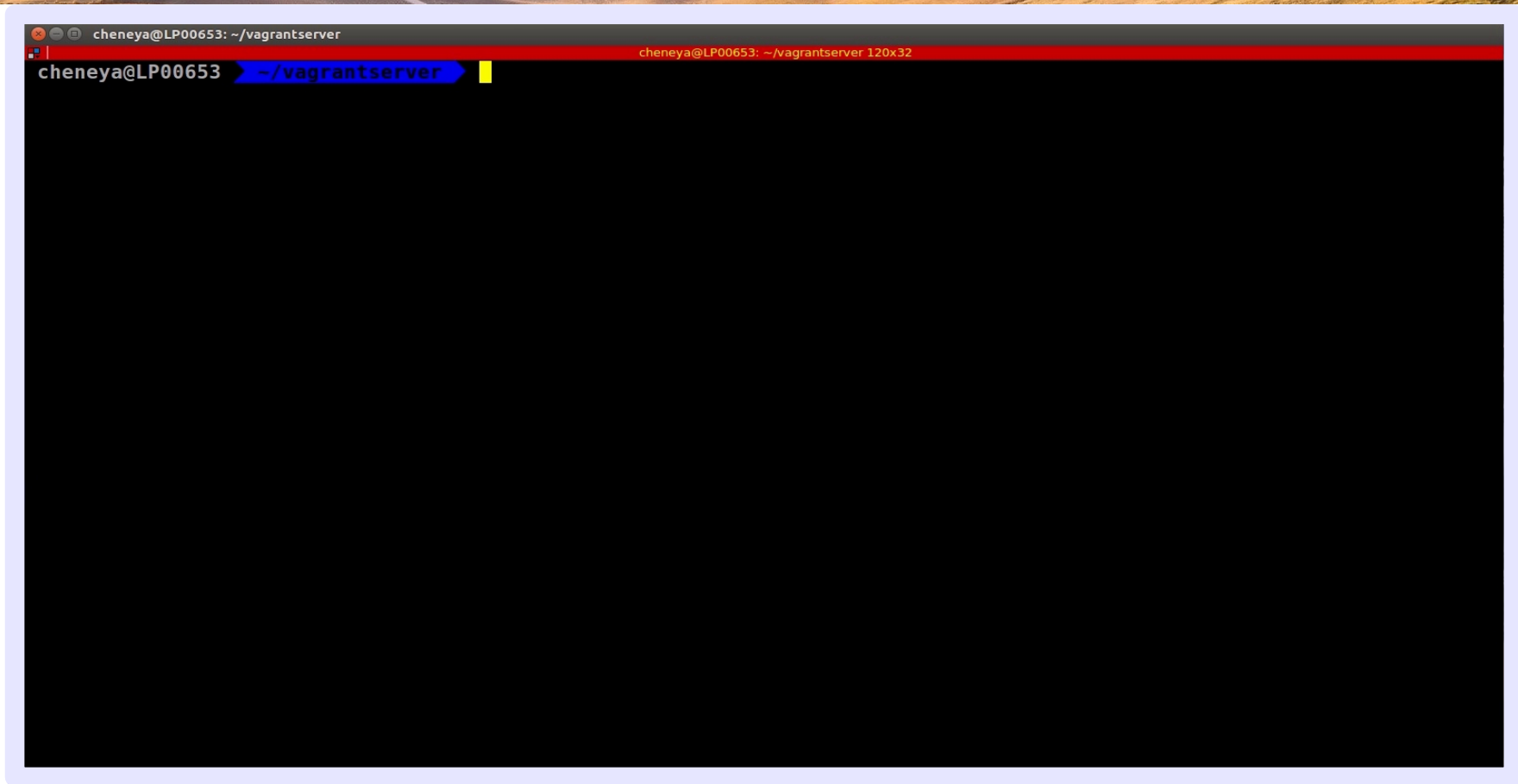
Create an Ubuntu server



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrant CLI



Vagrant commands

vagrant box

add

list

remove

repackage

update



Vagrant commands

vagrant up

vagrant halt

vagrant suspend

vagrant reload

vagrant destroy



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITvagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end
```

Main Vagrant
configuration
block



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end
```

Machine
settings



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end
```

Network
settings



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision :shell, inline: $provisionlamp
30   end
31 end

LAMP/Vagrantfile* 31:4  LF UTF-8 Ruby show-tell 8 files 1 update
```

Synchronized
folder



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end
```

Provider-specific settings



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end

LAMP/Vagrantfile* 31:4  LF UTF-8 Ruby show-tell 8 files 1 update
```

Host
provisioning



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrantfile

```
Vagrantfile — ~/github/AutomatedITVagrant — Atom

Vagrantfile

1 # -*- mode: ruby -*-
2 # vi: set ft=ruby :
3
4 # Inline provisioning script
5 $provisionlamp = <<-SCRIPT
6 apt-get update -y && apt-get upgrade -y
7 apt-get install -y apache2
8 debconf-set-selections <<< 'mysql-server mysql-server/root_password password password'
9 debconf-set-selections <<< 'mysql-server mysql-server/root_password_again password password'
10 apt-get -y install mysql-server
11 apt-get -y install php7.0-mysql
12 apt-get -y install php7.0 libapache2-mod-php7.0
13 SCRIPT
14
15 # Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
16 VAGRANTFILE_API_VERSION = '2'
17
18 Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
19   config.vm.define :lamp do |lamp|
20     lamp.vm.box = "ubuntu/xenial64"
21     # Set name
22     lamp.vm.hostname = 'lamp'
23     lamp.vm.provider :virtualbox do |vb|
24       vb.name = 'lamp'
25     end
26     lamp.vm.network :forwarded_port, guest: 80, host: 8080
27     lamp.vm.network :forwarded_port, guest: 3306, host: 3306
28     lamp.vm.synced_folder '.', '/var/www/vagrant', mount_options: ['dmode=0775', 'fmode=0664']
29     lamp.vm.provision "shell", inline: $provisionlamp
30   end
31 end
```

**Ruby variable
with inline shell
script**



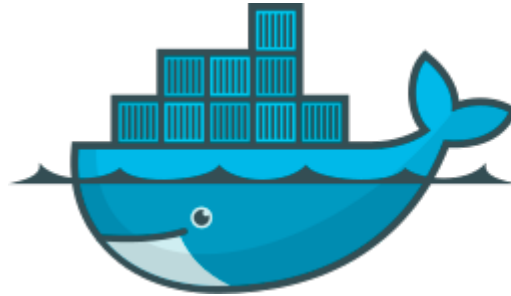
Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrant provisioners



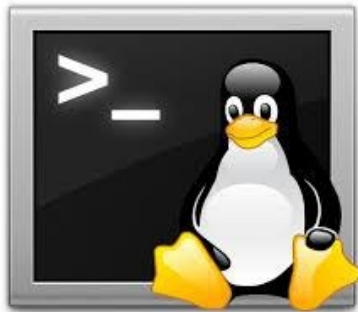
ANSIBLE



docker



CHEF



Automated IT Solutions

DevOps and Cloud Consultancy Services

Vagrant providers

