



VAGRANT

Thomas Krille



↳ tarent

“Vagrant is a tool for building complete development environments. [...] Vagrant lowers development environment setup time [...] and makes the "works on my machine" excuse a relic of the past.”

Orchestrations-Tool für VMs

Provider: VirtualBox, VMware, AWS, libvirt, Docker ...

Provisioner: Shell Scripts, Puppet, Ansible, Docker ...

Ruby

Plugins

2010 von Mitchell Hashimoto
Gründung von HashiCorp 2012
Open Source, MIT License
Linux, Mac OS X, Windows

“development environments”

isoliert

reproduzierbar

konsistent

Einweg-VMs

Einheitlicher Workflow

Einfache Installation

Devs
Ops
Designer
QS
...

Vagrantfile: "Saat" für VMs
Ruby-DSL
data-as-code
ähnlich Dockerfile

Demo

```
$ vagrant init ubuntu/trusty64  
$ vagrant up  
$ vagrant ssh  
$ vagrant destroy
```

```
Vagrant.configure(2) do |config|  
  config.vm.box = 'ubuntu/trusty64'  
end
```

fertige Templates für VMs

Versioniert, Gebunden an Provider

Standard-Quelle: [HashiCorps Atlas box catalog](#)

Selber machen: [Packer](#)

Beliebige weitere Quellen (Lokal, Web, ...)

Technische Einstellungen der VM Speicher, CPUs, ... Provider spezifische Einstellungen

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.provider :virtualbox do |vb|  
    vb.memory = 1024  
    vb.cpus = 2  
    vb.gui = true  
  end  
  ...  
end
```

Dateien mit Host teilen

Standard: Projektverzeichnis unter `/vagrant`

verschiedene Typen: VirtualBox, NFS, RSync, SMB

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.synced_folder 'target/', '/media/wars'  
  config.vm.synced_folder '.', '/vagrant', :disabled => true  
  ...  
end
```

reproduzierbares Aufsetzen

Mit dabei: Datei kopieren, Shell-Skript, Puppet,
Ansible, Docker, Chef, Salt, CFEngine

Weitere über Plugins

Datei kopieren

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.provision :file, :source => 'my_file',  
                        :destination => '/tmp/my_file'  
  ...  
end
```

Shell-Skript ausführen

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.provision :shell,  
                      :path => 'bootstrap.sh'  
  config.vm.provision :shell,  
                      :inline => 'apt-get install tomcat7'  
  ...  
end
```


Puppet-Run starten ohne Master

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.provision :puppet do |puppet|  
    puppet.manifests_path = 'puppet/manifests'  
    puppet.module_path = 'puppet/modules'  
    puppet.options = '--test'  
  end  
  ...  
end
```

Management Interface + NAT

Port Forwarding, Private Network, Bridge

DHCP oder Static IP

MAC-Adressen

Mehrere Netzwerke möglich

Port Forwarding

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.network :forwarded_port,  
                    :guest => 5432, :host => 5432  
  config.vm.network :forwarded_port,  
                    :guest => 8080, :host => 8080  
  ...  
end
```

Private Network

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.network :private_network, :type => 'dhcp'  
  config.vm.network :private_network, :ip => '192.168.20.2'  
  ...  
end
```

Bridge

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.network :public_network, :bridge => 'eth0',  
    :ip => '192.168.1.2'  
  ...  
end
```

Demo

Installation von Docker

`docker run`

`docker pull`

`docker build`

docker run

```
Vagrant.configure(2) do |config|  
  ...  
  config.vm.provision :docker do |docker|  
    docker.run 'osiam',  
      :image => 'osiamorg/osiam:1.3.2',  
      :args => '-v /vagrant:/media/vagrant \  
               -p 8080:8080 \  
               -p 5432:5432'  
  end  
  ...  
end
```


Demo

Standby: `vagrant suspend`

Poweroff: `vagrant halt`

Zerstören: `vagrant destroy`

Sicherheit von Vagrant

==

Sicherheit von Provider

aber ...

Vertrauen in Box

Selber machen: Packer

Wie bei Docker Hub, Maven Central, ...

`vagrant user == root`

Passwortloses `sudo`

Passwort: `vagrant`

`root-Passwort:` `vagrant`

Aber: frische, einzigartige SSH-Keys

Das ist gewollt!

Externe Konfiguration
Multi VM Environments
Ausnutzen von Ruby
Zusätzlicher Storage

-> Lightning Talk am 4. Mai 2015

- <https://www.vagrantup.com/>
- <https://docs.vagrantup.com/>
- Vagrant: Up and Running (O'Reilly Media)
<http://shop.oreilly.com/product/0636920026358.do>
- Beispiele zum Talk
<https://github.com/tkrille/tech-talk-vagrant>