



**HoGent**

Faculteit Bedrijf en Organisatie

NoSQL: Cassandra

Bijlagen

Lorenz Verschingel

Scriptie voorgedragen tot het bekomen van de graad van  
Bachelor in de toegepaste informatica

Promotor:  
Sabine De Vreese  
Co-promotor:  
Jean-Jacques De Clercq

Instelling: HoGent

Academiejaar: 2015-2016

Tweede examenperiode



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# Bijlage A

## Opzetten vagrant Cassandra single node

### A.1 Vagrantfile

```
# -*- mode: ruby -*-
# vi: set ft=ruby :

# All Vagrant configuration is done below. The "2" in Vagrant.configure
# configures the configuration version (we support older styles for
# backwards compatibility). Please don't change it unless you know what
# you're doing.
Vagrant.configure(2) do |config|

  # Specify box
  config.vm.box = "ubuntu/trusty64"

  # forward ssh port
  config.vm.network :forwarded_port, guest: 22, host: 2250, id: "ssh"

  # Provider-specific configuration so you can fine-tune various
  # backing providers for Vagrant. These expose provider-specific options
  # Example for VirtualBox:
  #
  config.vm.provider "virtualbox" do |vb|

    # Customize the amount of memory on the VM:
    vb.memory = "1024"
```

```
#Set Name of vm
vb.name = "Cassandra-Single-Node"
end

# Enable provisioning with a shell script. Additional provisioners such
# Puppet, Chef, Ansible, Salt, and Docker are also available. Please see
# documentation for more information about their specific syntax and usage
config.vm.provision "shell", path: "provision/setup.sh"
end
```

## A.2 Setup

```
#!/bin/bash
```

```
echo "Provisioning virtual machine..."
echo "Adding needed repositories"
# add repository for java 8
sudo add-apt-repository ppa:webupd8team/java -y
# add the repo's source
echo "deb http://www.apache.org/dist/cassandra/debian_33x_
main" | sudo tee -a /etc/apt/sources.list.d/cassandra.
sources.list
# add three public keys from the Apache Software Foundation
associated with the package repositories
gpg --keyserver pgp.mit.edu --recv-keys F758CE318D77295D
sudo gpg --export --armor F758CE318D77295D | sudo apt-key
add -
gpg --keyserver pgp.mit.edu --recv-keys 2B5C1B00
sudo gpg --export --armor 2B5C1B00 | sudo apt-key add -
gpg --keyserver pgp.mit.edu --recv-keys 0353B12C
sudo gpg --export --armor 0353B12C | sudo apt-key add -

sudo apt-get update

echo "Installing Java"
# Automated installation (auto accept license)
echo oracle-java8-installer shared/accepted-oracle-license-
v1-1 select true | sudo /usr/bin/debconf-set-selections
sudo apt-get install -y oracle-java8-installer

echo "Installing Cassandra"
sudo apt-get install cassandra -y

echo "Hello I'm up and running"
echo "To check if cassandra is running execute the
following:"
echo "sudo service cassandra status"
```

## Bijlage B

# Opzetten vagrant Cassandra cluster

### B.1 /etc/hosts

```
127.0.0.1          localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts

192.168.33.10      cassandra-node-0
192.168.33.11      cassandra-node-1
192.168.33.12      cassandra-node-2
192.168.33.13      cassandra-node-3
192.168.33.14      cassandra-node-4
```



## B.2 Vagrantfile

```
# -*- mode: ruby -*-
# vi: set ft=ruby :

boxes = [
  { :name => 'cassandra-master', :ip => '192.168.33.10',
    :cpus =>2, :memory => 2048 },
  { :name => 'cassandra-node-1', :ip => '192.168.33.11',
    :cpus =>2, :memory => 2048 },
  { :name => 'cassandra-node-2', :ip => '192.168.33.12',
    :cpus =>2, :memory => 2048 },
  { :name => 'cassandra-node-3', :ip => '192.168.33.13',
    :cpus =>2, :memory => 2048 },
  { :name => 'cassandra-node-4', :ip => '192.168.33.14',
    :cpus =>2, :memory => 2048 }
]

# All Vagrant configuration is done below.
# The "2" in Vagrant.configure
# configures the configuration version
# (we support older styles for
# backwards compatibility).
# Please don't change it unless you know what
# you're doing.
Vagrant.configure(2) do |config|
  boxes.each do |box|
    config.vm.define box[:name] do |config|

      # Specify the box
      config.vm.box = "ubuntu/trusty64"

      # Set ip
      config.vm.network :private_network, ip: box[:ip]

      # Manage /etc/hosts on host and VMs
      config.hostmanager.enabled = false
      config.hostmanager.manage_host = true
      config.hostmanager.include_offline = true
      config.hostmanager.ignore_private_ip = false
    end
  end
end
```

```
# Set host name
config.vm.hostname = box[:name]

# Vagrant up message
config.vm.post_up_message =
  box[:name] + " is alive and kicking"

# Virtualbox config
config.vm.provider "virtualbox" do |vb|
  # Customize the amount of memory on the VM:
  vb.memory = box[:memory]

  # Customize the amount of cpus on the VM:
  vb.cpus = box[:cpus]

  #Set Name of vm
  vb.name = box[:name]
end

#Copy hosts
config.vm.provision :shell, :inline
=> "cp -fv /vagrant/hosts /etc/hosts"

if (box[:name] == "cassandra-master")
  # Port forwarding
  config.vm.network "forwarded_port",
    guest: 8888, host: 8888

  #config.vm.provision :shell, :inline => $master_script
  config.vm.provision "shell",
    path: => "provision/setup_dse.sh"
else
  #config.vm.provision :shell, :inline => $slave_script
  config.vm.provision :shell,
    :path => "provision/setup_slave.sh"
end

#hostmanager config
config.vm.provision :hostmanager
```

```
    end
  end
end
```

## B.3 Setup cluster manager

```
#!/bin/bash
```

```
echo "Provisioning virtual machine..."
echo "Adding needed repositories"
# add repository for java 8
sudo add-apt-repository ppa:webupd8team/java -y

# add the repo's source
echo "deb http://debian.datastax.com/community stable main"
    | sudo tee -a /etc/apt/sources.list.d/datastax.
    community.list
wget -q -O - http://debian.datastax.com/debian/repo_key |
    sudo apt-key add -

echo "Updating repositories"
sudo apt-get update -qq

echo "Installing Java"
# Automated installation (auto accept license)
echo oracle-java8-installer shared/accepted-oracle-license-v1-1 select true | sudo /usr/bin/debconf-set-selections
>> /dev/null
sudo apt-get install -y oracle-java8-installer >> /dev/null

echo "Installing OpsCenter"
sudo apt-get install -y opscenter >> /dev/null

echo "Starting opscenter"
sudo service opscenterd start
```

## B.4 Setup slaves

```
#!/bin/bash
```

```
echo "Provisioning virtual machine ..."
```

```
echo "Adding needed repositories"
```

```
# add repository for java 8
```

```
sudo add-apt-repository ppa:webupd8team/java -y
```

```
echo "Updating repositories"
```

```
sudo apt-get update -qq
```

```
echo "Installing Java"
```

```
# Automated installation (auto accept license)
```

```
echo oracle-java8-installer shared/accepted-oracle-license-v1-1 select true | sudo /usr/bin/debconf-set-selections
```

```
sudo apt-get install -y oracle-java8-installer >> /dev/null
```