

Installing OpenShift Enterprise multi-nodes config using VirtualBox for extended demos

Gabriel Bechara

Principal Solution Architect @ Red Hat

<https://github.com/gbechara/osedevops>

Prerequisites

- Virtual Box (tested on Version 5.0.20 r106931)
- Vagrant (tested on 1.8.1)
- Valid RHEL7 & OpenShift Container Platform Subscription
 - Trials are available on <https://www.openshift.com/container-platform/trial.html>
- Create your own Vagrant Box
 - Create a VirtualBox with RHEL7 “Server”
 - Add to this VirtualBox your valid Subs OR use vagrant-registration plugin
 - Convert this Box into a Vagrant Base Box located on your local disk
 - Instruction are here <https://www.vagrantup.com/docs/boxes/base.html>
 - name this base box rhel72-server-base.box (or change the name in the Vagrantfile)
 - do not share this box : it may contain your subscriptions
 - you may need to load update your box (to update the cache in ~/.vagrant.d/boxes)
 - # vagrant box remove rhel72-server-base.box
 - # vagrant box add rhel72-server-base.box --force --name rhel72-server-base.box

Architecture

DNS entry for each VM

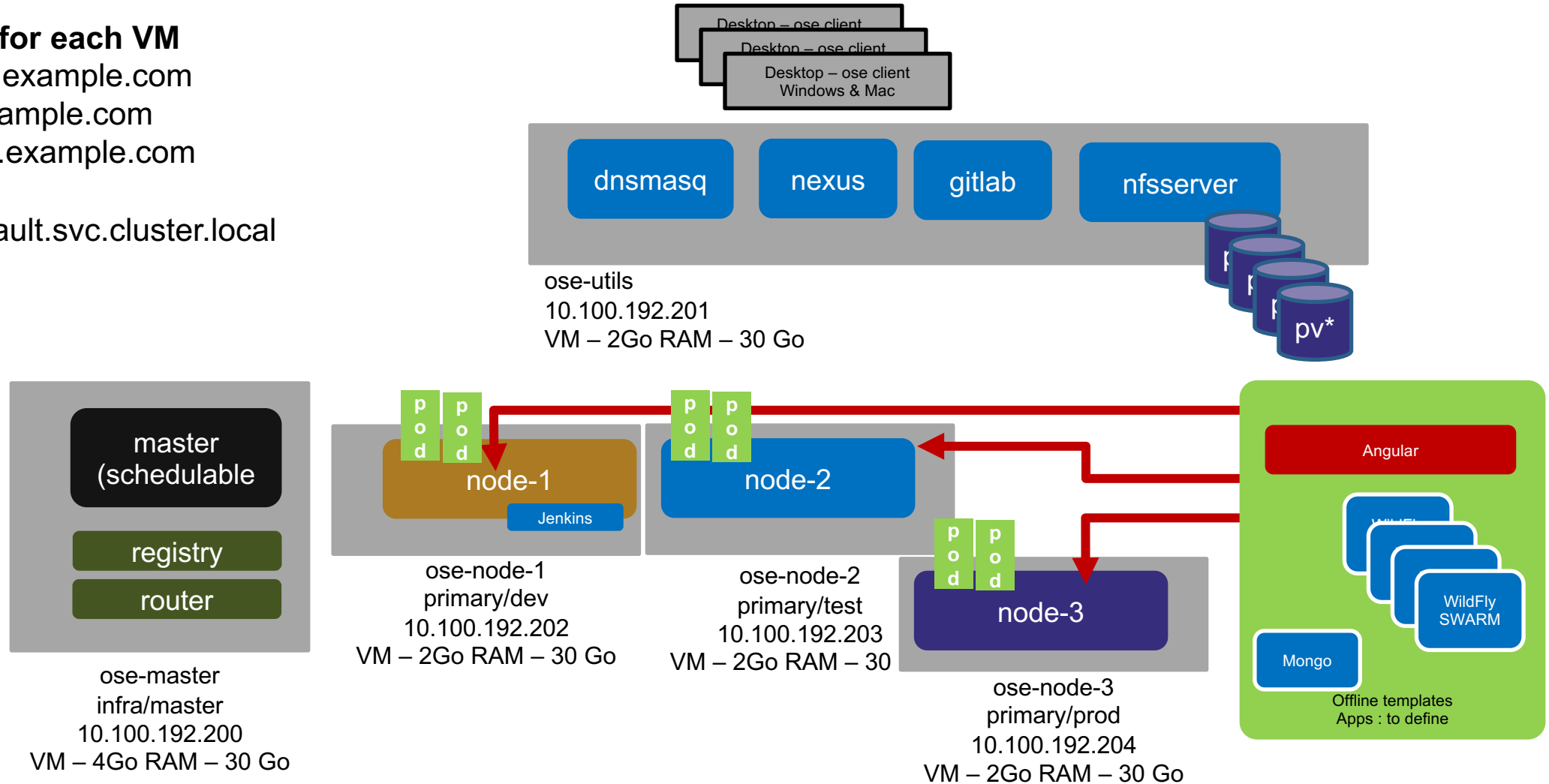
ose-master.example.com

ose-utils.example.com

ose-node-1.example.com

Wildcards

*.router.default.svc.cluster.local



Usage (1/2)

- Get the source code
 - > git clone <https://github.com/gbechara/osdevops.git>
 - If your Sub is not in the Vagrant box you can use the vagrant-registration plugin
 - add in ~/.vagrant.d/Vagrantfile or in the Vagrantfile you got from github the following






```
Vagrant.configure('2') do |config|  
  config.registration.username = '<your Red Hat username>  
  config.registration.password = '<your Red Hat password>  
  config.registration.pools = [ 'thepoolthatcontainstheadequatesubs' ]  
End
```
- Launch
 - > Change the passwords in the file Vagrantfile to match the root password of your box
 - This password is needed to copy the generated ssh key to all OpenShift nodes
 - > cd osdevops
 - > vagrant plugin install vagrant-cachier # some error related to yum update may occur using vagrant-cachier you may want not install this plug-in
 - > vagrant plugin install vagrant-registration # (if your sub is not in the vbox)
 - > vagrant up
- configure your host to add a dnsserver
 - on linux add in /etc/resolv.conf

```
search example.com  
10.100.192.201
```
- on osx create 2 files named 'example.com' and 'router.default.svc.cluster.local' in /etc/resolver add to those files
- ```
nameserver 10.100.192.201
```






# Usage (2/2)

- Openshift Web Console
  - <https://ose-master.example.com:8443/console/>
  - User dev1/dev1 have access to the development project
  - User test1/test1 have access to development, testing, ci and production (when created) project
- Jenkins
  - <https://jenkins-ci.router.default.svc.cluster.local/>
  - Jenkins user is admin/password
  - Use **pipeline-development-ticket-monster/**
- GitLab
  - <http://gitlab.example.com/>
  - User gabriel/weareawesome
  - 2 projects used by offline templates and one for jenkins

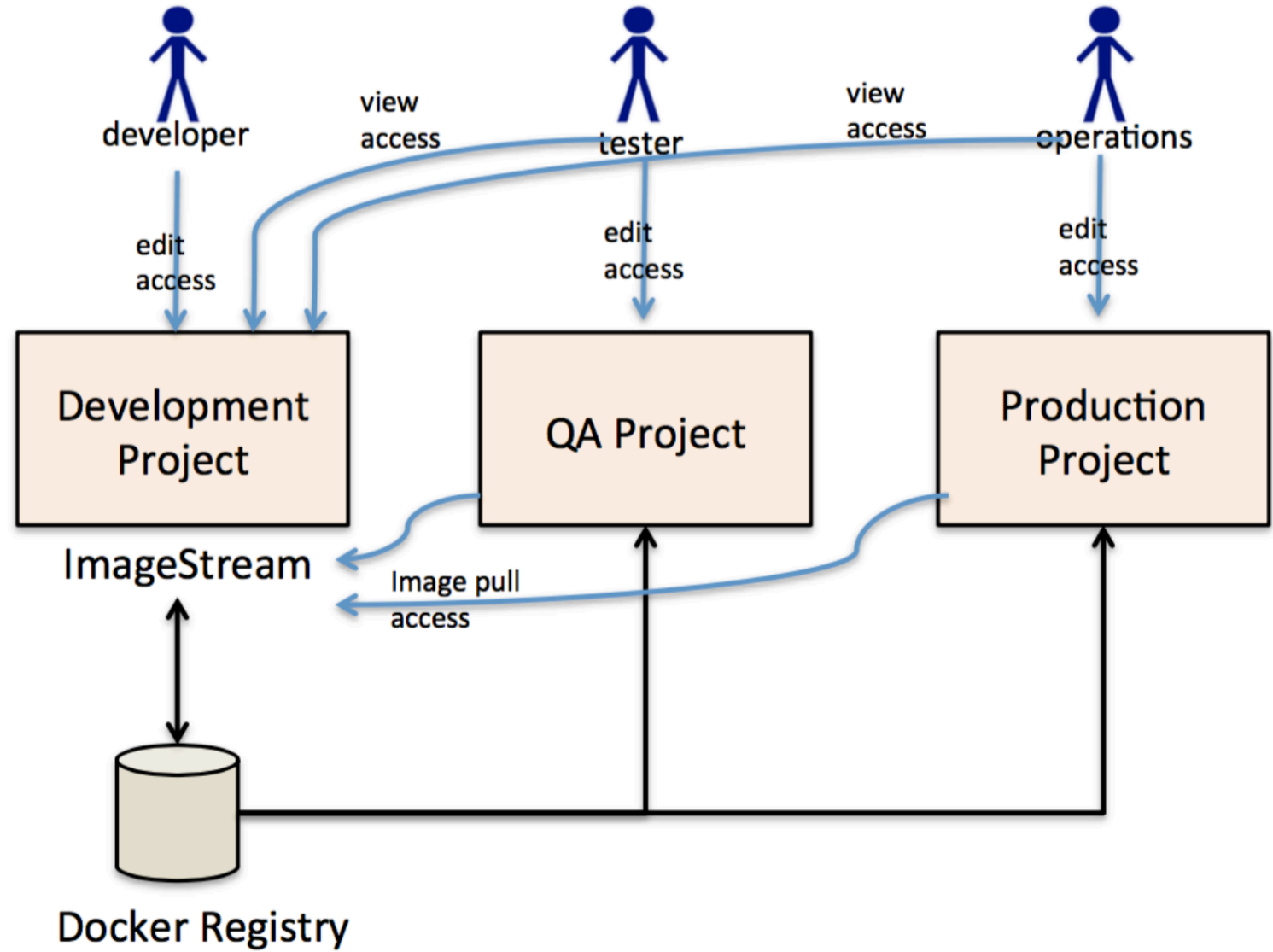
|   |                                     |
|---|-------------------------------------|
| T | Gabriel Bechara / ticket-monster    |
| O | Gabriel Bechara / osedevops-jenkins |
| C | Gabriel Bechara / cake-php          |

| All                                                                                 | pipeline                                                                            | +                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------|
| S                                                                                   | M                                                                                   | Nom du projet ↓                                     |
|  |  | <a href="#">build-development-ticket-monster</a>    |
|  |  | <a href="#">deploy-testing-ticket-monster</a>       |
|  |  | <a href="#">pipeline-development-ticket-monster</a> |

Icône: [S](#) [M](#) [L](#)

| Instant Apps                                                                          |                                                                                                    | See all                                                                                                                                                                     |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>1-cakephp-offline</b><br>INSTANT-APP QUICKSTART PHP CAKEPHP                                     |   |
|  | <b>1-eap64-ticket-monster-offline</b><br>Version: 1.2.0<br>INSTANT-APP EAP JAVAEE JAVA JBOSS XPAAS |                                                                                        |


# Example



Based on <https://blog.openshift.com/promoting-applications-across-environments/>

# Jenkins Pipeline : from dev to production


→ Approvals between environments and creation of the next env if it does not exist


**Jenkins**


rechercher


Jenkins Admin | se déconnecter


Jenkins » pipeline-development-ticket-monster » Rafraîchissement automatique


 Back to Dashboard


 Status


 Changes

 Lancer un build

 Supprimer Pipeline

 Configurer

 Move

 Full Stage View

Historique des builds

tendance

find

#4

3 juin 2016 23:04

#3

3 juin 2016 23:02

#2

3 juin 2016 22:42

#1


3 juin 2016 22:36

RSS des builds

RSS des échecs

## Pipeline pipeline-development-ticket-monster

Ajouter une description

 Recent Changes

### Stage View

Average stage times:  
(Average full run time: ~25s)

|    | Build image and deploy in Dev | Wait for approval         | Deploy to testing | Wait for approval        | Deploy to production |
|----|-------------------------------|---------------------------|-------------------|--------------------------|----------------------|
| #4 | 8s                            | 714ms                     | 5s                | NaNy NaNd                | 8s                   |
| #3 | 8s                            | 471ms<br>(paused for 46s) | 7s                | 263ms<br>(paused for 8s) | 8s                   |
| #2 | 7s                            | 418ms<br>(paused for 7s)  | 6s<br>failed      |                          |                      |

# Notes

- Installation works only when connected to internet
  - OOTB Templates use github and maven repos
  - It may take time, around 40 minutes, depending on the roles you add
- 2 templates can then be used to do offline demos
  - 1-eap64-ticket-monster-offline
  - 1-cakephp-offline
- During the install the sample gitlab, nexus, the docker images, the jenkins plugins are all populated to work offline for the 2 templates
- 3 users (gabriel, dev1, test1), 2 projects (development, testing) are created to deploy the sample, the jenkins job “pipeline-development-ticket-monster” will create a third project



# Roadmap

- ✓ Add NFS for persistent Volumes
- ✓ Add a git server
- ✓ Add a nexus
- ✓ Add templates for offline demos using the git server and the nexus
- ✓ Deploy and example to populate the docker registry, gitlab and nexus
- ✓ Showcase an application promotion across environments
- ✓ Showcase Jenkins with approval steps
- Add other samples
  - Deploying WildFly SWARM microservices on OpenShift
  - Covering the entire DevOps lifecycle
  - Other ideas ?
  - ....