

A multi-nodes config using VirtualBox to showcase
end-to-end DevOps using
OpenShift Container Platform

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

About this showcase

- The installer will
 - create multiple vagrant machines : ose-master, ose-node-x, ose-infra
 - configure those machines to add the pre-requisites using a Ansible script
 - install OpenShift Container Platform 3.x calling the provided OpenShift Ansible installer
 - configure and install
 - registry
 - router
 - metrics
 - gitlab
 - Nexus (for java and nodejs offline build)
 - Examples : offline templates and pipelines

Architecture

DNS entry for each VM

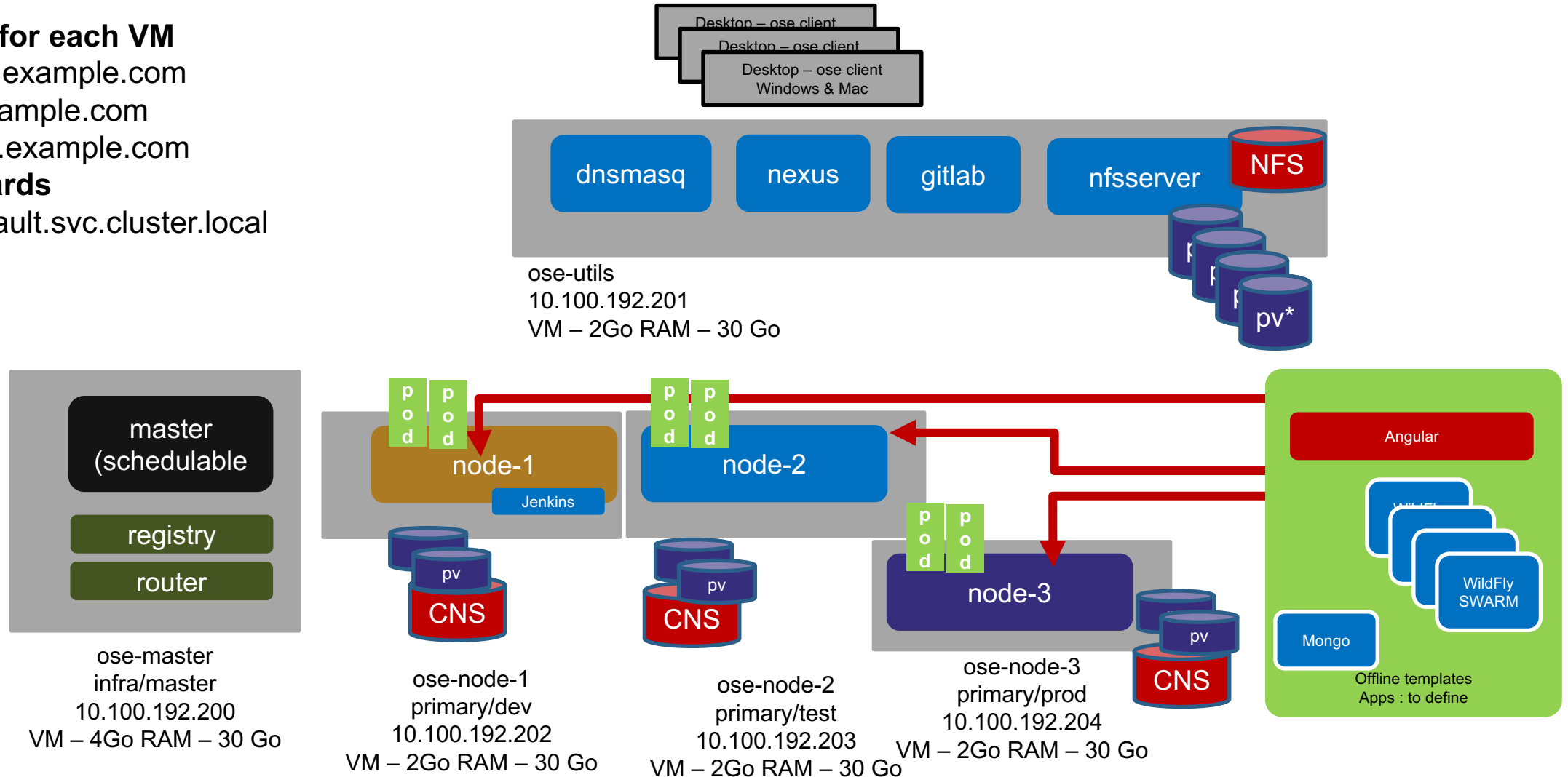
ose-master.example.com

ose-utils.example.com

ose-node-1.example.com

dns Wildcards

*.router.default.svc.cluster.local



Prerequisites

- Virtual Box (tested on Version 5.0.20 r106931)
- Vagrant 1.8.7
 - 1.8.7 correct a bogue related to auto_config of the private network and docker
 - <https://github.com/mitchellh/vagrant/issues/7876>
 - In previous versions the network might fail after a “vagrant reload” depending of the ordering of the network interfaces
- 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://github.com/gbechara/osdevops/blob/master/create-vagrant-base-box.md>
 - Notes :
 - 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

Usage (1/2)











- Get the source code
 - > git clone <https://github.com/gbechara/osedevops.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 current 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 osedevops
 - > # vagrant plugin install vagrant-cachier # not recommended 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-cicd.router.default.svc.cluster.local>
  - Jenkins user is admin/password
  - 3 preconfigured pipelines are provided
    - pipeline-development-nodejs
    - pipeline-development-ticket-monster
    - pipeline-development-ticket-cake-php
- GitLab
  - <http://gitlab.example.com/>
  - User gabriel/weareawesome
  - 3 projects used by offline templates and one for jenkins are pre-populated on the local gitlab

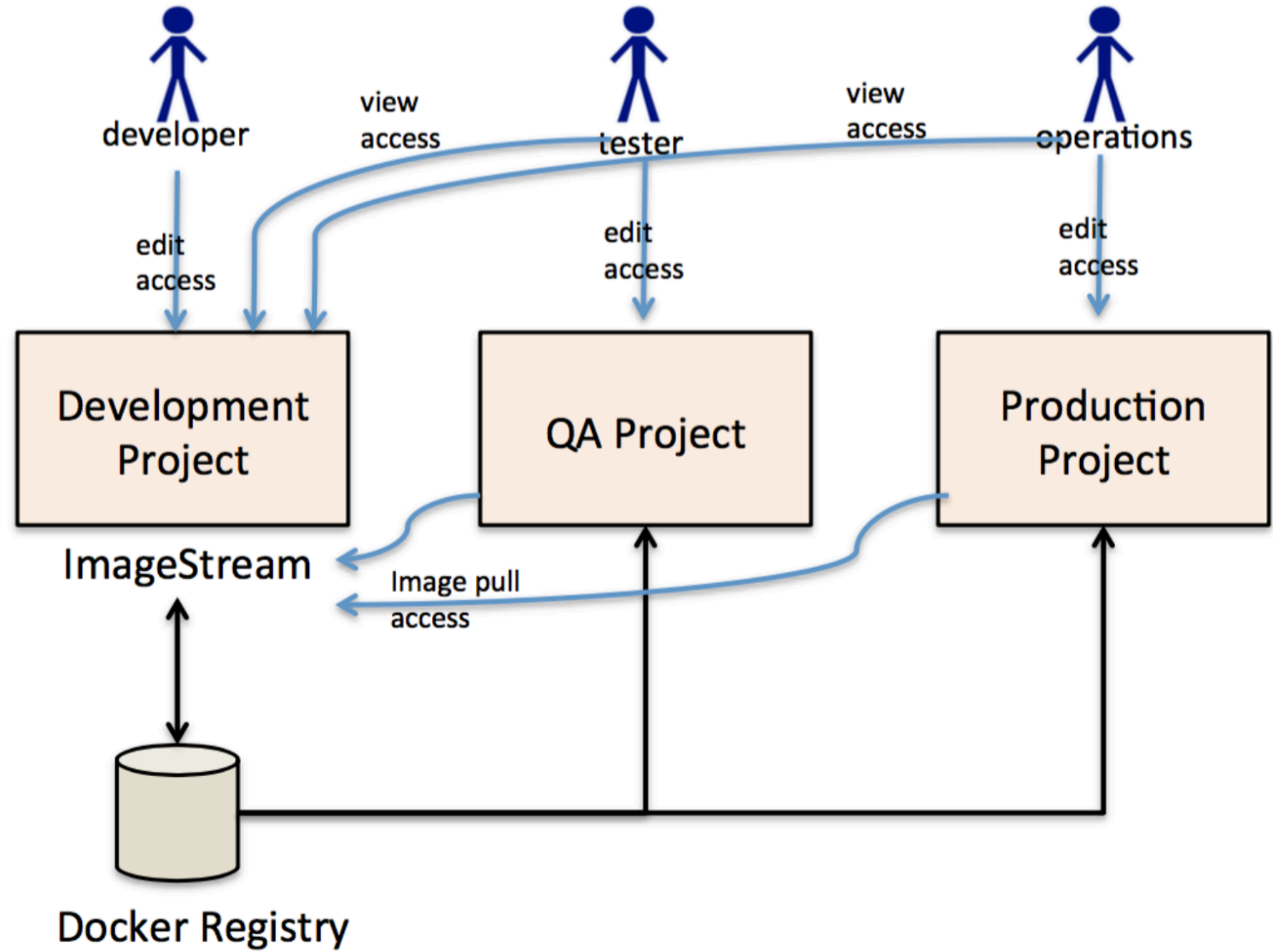
| All pipeline +                                                                      |                                                                                     |                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------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

Icône: [S](#) [M](#) [L](#) [Légende](#)

| Instant Apps                                                                         |                                                                                                             | <a href="#">See all</a>                                                                                                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <a href="#">1-cakephp-offline</a><br>INSTANT-APP QUICKSTART PHP CAKEPHP                                     |     |
|   | <a href="#">1-eap64-ticket-monster-offline</a><br>Version: 1.2.0<br>INSTANT-APP EAP JAVAEE JAVA JBOSS XPAAS |                                                                                        |
|  | <a href="#">1-nodejs-offline-example</a><br>INSTANT-APP QUICKSTART NODEJS                                   |   |

| Signed in successfully.                                                               |                                     |
|---------------------------------------------------------------------------------------|-------------------------------------|
| Your Projects Starred Projects Explore Projects                                       |                                     |
|  | Gabriel Bechara / nodejs-example    |
|  | Gabriel Bechara / osedevops-jenkins |
|  | Gabriel Bechara / cake-php          |


# 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](#)


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 [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

 [Recent Changes](#)

#4

Jun 04 01:04

No Changes

#3

Jun 04 01:02

No Changes

#2

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



# Notes

- Installation works only when connected to internet
  - It may take time, around 40 minutes, depending on the roles you add
  - The installation may not work when having network issue or if your laptop suspends during the install
- 3 templates can then be used to do offline demos
- During the install the sample gitlab, nexus, the docker images, the jenkins plugins are all populated to work offline for the all 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 with 3 pre-populated samples
- ✓ Add a nexus with proxies configured for Java and NodeJS samples
- ✓ Add templates for offline demos using the git server and the nexus
- ✓ Deploy and example to populate the docker registry, gitlab and nexus (for offline demos)
- ✓ Showcase an application promotion across environments :
  - ✓ preconfigured pipelines for the 3 samples offline JBoss, NodeJS and PHP Projects
- ✓ Add a integrated Dev Pipeline in the Dev project (OCP3.3)
- Add other samples
  - Deploying WildFly SWARM microservices on OpenShift
  - Covering the entire DevOps lifecycle (adding Jira ?)
  - Other ideas ?
  - ....

