Build your own OpenShift

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I’m Jorge Morales

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I work at

as a Developer Advocate for

I do:

- demos
- workshops
- talks
- conferences
- blogs
- travel
- drink beer
- ...

And I wanted OpenShift in a VM

What did I already have access to?

A whole lot of options

- OpenShift Origin Vagrant
- CDKv2 (Container Development Kit)
- adb (Atomic Development Bundle)
- OpenShift 3 demo Vagrant environment
- Multi-Host OpenShift Enterprise via Vagrant
- OpenShift Enterprise v3 Automated Installation
- OpenShift Enterprise 3 nodes setup with Vagrant and quick installer
- oinc - OpenShift in Container
- Fabric8
- And many more...

OpenShift Origin Vagrant

- Official Image by OpenShift community for developing in Origin
- https://github.com/openshift/origin/blob/master/CONTRIBUTING.adoc#develop-on-virtual-machine-using-vagrant

PRO:

- Community version
- Continuously maintained

CON:

- Only set up the VM and git cloning. A lot of manual steps (Registry, Router, Monitoring, Logging,...)
- No easy update
- Port redirection to the applications required
- Not too much documentation

Container Development Kit v2 CDKv2

- Red Hat’s official Image for OpenShift Enterprise developers
- https://access.redhat.com/downloads/content/293/ver=2/rhel---7/2.0.0/x86_64/product-software

PRO:

- Full image. Ready to work
- Continuously maintained

CON:

- Enterprise version
- Installation process still incomplete (Beta4 at the moment)
- Vagrant plugins required to set up
- Multipurpose project, not OpenShift specific. Lot of manual steps required to set up an OpenShift VM.

Atomic Developer Bundle

- Upstream version of CDK.
- https://github.com/projectatomic/adb-atomic-developer-bundle

PRO:

- Community version
- Full image. Ready to work
- Continuously maintained
- Documented

CON:

- Vagrant plugins required to set up.
- Multipurpose project, not OpenShift specific. Lot of manual steps required to set up an OpenShift VM.

OpenShift 3 demo Vagrant environment

- Automated installation of an environment for using with openshift/training material
- https://github.com/jorgemoralespou/jboss-virtual-environments/tree/master/vagrant-vms/openshift3
- https://github.com/nekop/openshift-sandbox/tree/master/vagrant/openshift-enterprise
- https://github.com/jcordes73/ose-installation-automation
- https://github.com/thoraxe/vagrant-openshift-multihost

PRO:

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CON:

- Enterprise version
- Not maintained. Working with 3.0
- Not an all-in-one VM
- Plugins required
- Not documented
- Not actively developed

OpenShift In Container (oinc)

- Installing OpenShift in a container
- https://github.com/mfojtik/oinc/

PRO:

- Community version
- Single command to run

CON:

- Not using Virtualization
- Not maintained
- Written in GO, no easy to understand, modify,

Fabric8 Vagrant Image

- Fabric8 VM
- http://fabric8.io/guide/getStartedVagrant.html

PRO:

- Community version
- Documentation available

CON:

- Vagrant plugins required to set up.
- Fabric8 running on top of OpenShift
- Plugins required
- Not easy to understand

None of these worked for me!

When I say me, I mean my team.

To be more precise, I mean @TheSteve0

What we wanted:

- Community based
- Open source
- Maintained up-to-date
- Easy to understand
- Flexible in options
  - VM provisioning configuration tunable
  - VM runtime configuration tunable
- Packageable. Can make a base-box for redistribution out of it.
- Ability to peek into features in progress
- Being able to build whenever we want
- Usable on different hosts

So here, I’m presenting….

OpenShift Origin’s Vagrant EVG Version

As easy as:

vagrant up

No additional plugins required!

No fancy port redirection!

Fully configured!

Fully maintained and supported!

By me :-D

Provisioning options:

Origin repo and branch to use

VM ip

OpenShift domain

Additional capabilities in the image

Runtime options:

memory

cpu

It works with:

Libvirt and **VirtualBox**

Scripted in:

bash

4 simple scripts:

os

docker

origin

addons

os:

- install docker git go
- limit journal size (configurable)

docker:

- configure and start docker
  - container filesystem size

origin:

- checkout or update origin source code
- build origin
- configure origin
- start origin
- add services (registry, router, templates)

addons:

- metrics
- logging (WIP)
- ose templates
- additional users (WIP)
- pull down images (origin, centos builders, rhel builders, xpaas)

Creating the VM from scratch:

https://www.youtube.com/watch?v=k5rPDkHGgZk

Updating the VM with a contributor’s branch:

https://www.youtube.com/watch?v=npJi55ZvuW4

What we built:

- Open source (GitHub hosted)
- Based on Community OpenShift (Origin)
- Maintained up-to-date (Used to create openshift.org VM)
- Easy to understand (Written in bash)
- Flexible in options
  - VM provisioning configuration tunable
  - VM runtime configuration tunable
- Packageable. Can make a base-box for redistribution out of it.
- Ability to peek into features in progress (any contributor’s branch)
- Being able to build whenever we want (and you can too!)
- Usable on different hosts (Libvirt and VirtualBox)

Check it out and use it:

http://bit.ly/osvmgh

Or use the packaged version
https://www.openshift.org/vm
and read the docs
http://bit.ly/oslab4devs

But don’t kill me if you don’t like it

Submit issues, PR, ...

Thank you for listening to me

or not

And,

if you liked this presentation, it’s online:

http://bit.ly/osvm-slides