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# CI/CD with OpenShift and Jenkins

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# Agenda

- Intro to containers and CI/CD
- Deploying Jenkins in OpenShift
- Kubernetes plugin
- Defining CI/CD workflow
- Demo!

# Containers

- Build, Ship and Run any application, anywhere
- Faster deployments
- Enforce persistent data storage
- Pets vs. cattle
- Microservices / SOA is a real thing



# What is a "simple" application?

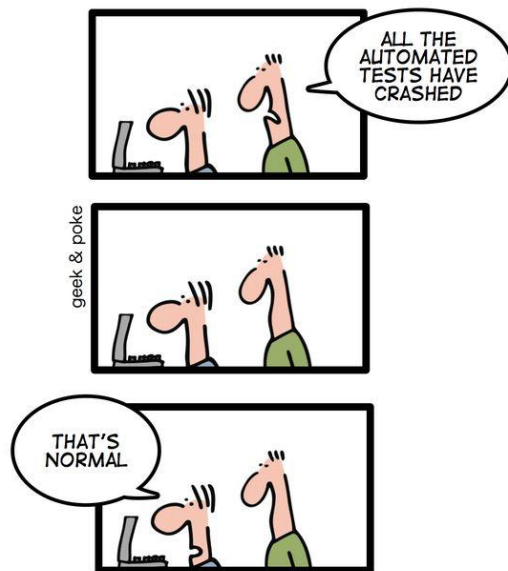
- Containers running in **Pods**
- Pods exposed as a **Service**
- Edge router `http://myapp.com`
  - *frontend* (PHP pods)
  - *backend* (JBoss pods)
  - *database* (MySQL pods with persistent storage)

# Cont. Integration

- Enable developers to develop and test apps rapidly and in environments they prefer
  - Submit code to **GitHub**
  - Test it in **Jenkins**
  - Build images in **OpenShift**
  - Push them to **Docker registry**

## *GEEK & POKE'S LIST OF BEST PRACTICES*

*TODAY: CONTINUOUS INTEGRATION GIVES YOU THE COMFORTING FEELING TO KNOW THAT EVERYTHING IS NORMAL*



# Why Jenkins?



- Because everyone else already uses it
- Huge user base, large numbers of plugins
- Easy to deploy and maintain
- From simple to complex configuration

# Jenkins in the cloud



- Jenkins in Docker image
- OpenShift can run any Docker image
- Jenkins in the cloud!

# OpenShift Jenkins Image

- <https://github.com/openshift/jenkins>
  - RHEL7 and CentOS7 variants
- **Features:**
  - Easy to run (just set admin password and you're ready to go)
  - Persistent configuration support
  - Easy-to-install custom plugins by layering
  - Total customization using Source-To-Image
  - Prepackaged OpenShift and Kubernetes plugin



# Deploying Jenkins in OpenShift

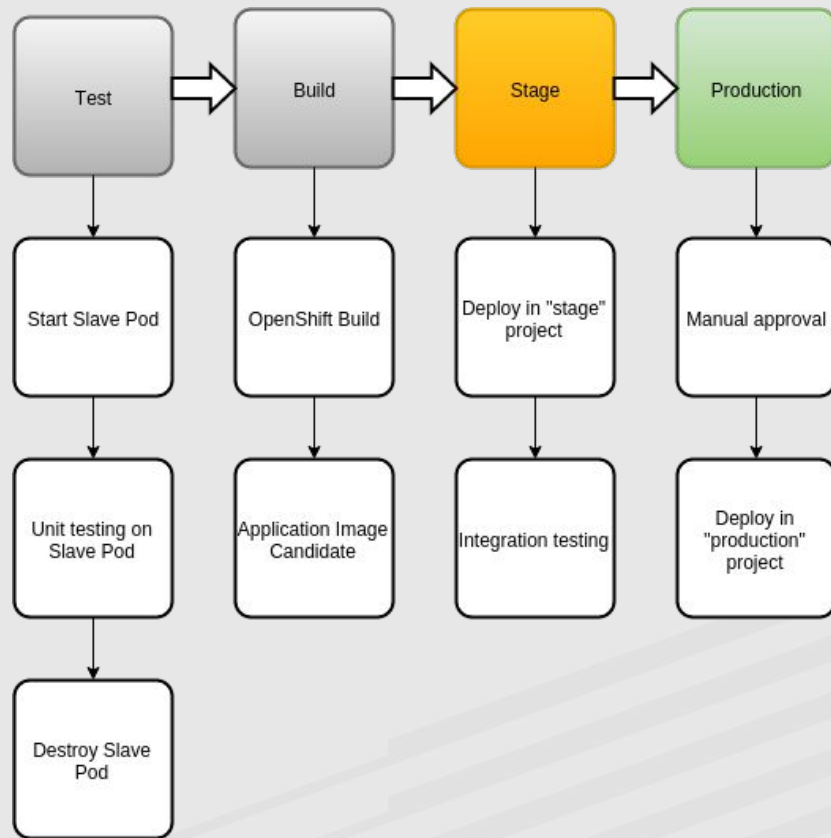
```
$ oc new-app jenkins-ephemeral
```

# Jenkins Kubernetes plugin

- [wiki.jenkins-ci.org/display/JENKINS/Kubernetes+Plugin](https://wiki.jenkins-ci.org/display/JENKINS/Kubernetes+Plugin)
  - **Distributed builds** with master-slave architecture
  - Run Jenkins jobs in OpenShift as pods
- Slave Docker image requirements:
  - Run Jenkins JNLP agent as CMD/ENTRYPOINT
  - (or) run Swarm plugin agent
  - Easy-to-use OpenShift template to help converting image to slave

# Continuous delivery

- Produce apps in short cycles
- Ensure software can be reliably released at any time
- From development, testing, stage to production
- Manage promotion process of Docker images
- Give tools to devops



Enough talk!



# Coming soon...

- OpenShift integration with Jenkins
  - Jenkins build configurations
  - Building pipelines
- Closer integration with Jenkins Pipeline
  - <https://github.com/jenkinsci/workflow-plugin>
- OpenShift Roadmap
  - [https://ci.openshift.redhat.com/roadmap\\_overview.html#ci-cd-workflows](https://ci.openshift.redhat.com/roadmap_overview.html#ci-cd-workflows)

# Where to look next

- OpenShift Jenkins Image
  - [github.com/openshift/jenkins](https://github.com/openshift/jenkins)
- OpenShift Jenkins examples
  - [github.com/openshift/origin/tree/master/examples/jenkins](https://github.com/openshift/origin/tree/master/examples/jenkins)
  - [github.com/openshift/origin/tree/master/examples/jenkins-master](https://github.com/openshift/origin/tree/master/examples/jenkins-master)
- **Questions?**

Thank you!