



# THE BEAUTY OF THE CONTAINER REVOLUTION


Or “How I learned to stop worrying and love the Container”

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OpenShift Evangelist



# A QUICK BILL AND TED STYLE HISTORY LESSON

\* Caveat - may be opinionated

A decorative graphic in the bottom right corner of the slide. It features a large white circle at the bottom right, with several smaller white circles of varying sizes arranged in a pattern that suggests a spiral or a series of orbits. These circles are connected by thin white lines, creating a sense of movement and depth against the dark red background.

# DEVELOPERS/OPS CIRCA 2000

# US!

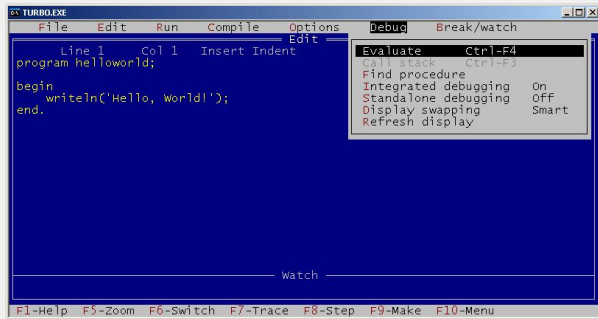
(The Devs)

# THEM!

(Ops)

# THE GOOD OLD DAYS

- ★ Long release cycles
- ★ Proprietary Software
- ★ Verticalised Applications
- ★ 'Stronghold' Software
- ★ 'Throwing over the wall'



- ★ BAU roles
- ★ Minimal software skills
- ★ First to see bugs
- ★ Hardware Custodians

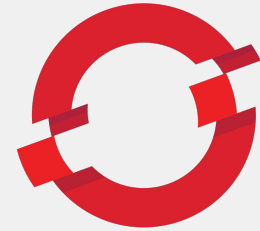
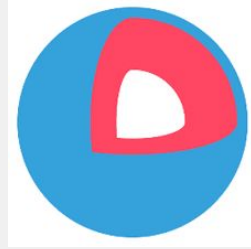


# THE RISE OF THE CLOUD



**“Someone else’s Server”**

# AND THEN..... CONTAINERS



**OPENSIFT**

**“File Systems/Processes with delusions of grandeur”**

DEVELOPMENT IS ALL ABOUT PASSION



# WHY DEVELOPERS DEVELOP

- ~~The Money~~
- ~~The Glory~~
- ~~The Respect~~

- To create
- For the tech
- Because we can

Development is an artform

... but before Containers it could be a chore



# SO WHAT DOES 'CLOUD NATIVE' ACTUALLY MEAN?



# THE PROBLEMS 'CLOUD NATIVE' SOLVES

1. The 'Stronghold' problem
2. Waterfall style slow release cycles
3. Application Taint

# WHAT MAKES SOFTWARE 'CLOUD NATIVE'?

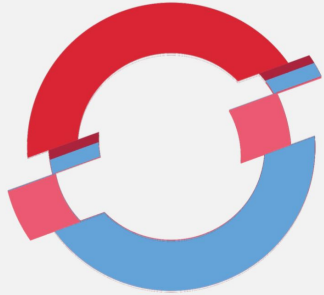
1. Portable (all its baggage with it)
2. Fire, Forget, Fail, Fire, Forget, Fail
3. The Ultimate Sausage Machine

# THE CONTAINER REVOLUTION?



# WHY YOU SHOULD BE VERY EXCITED

“Combining Cloud Native approaches with Containers makes developing software easy, fast and immensely powerful in terms of deployment, maintenance and realisation”



Add OpenShift and the range of new technologies emerging and developers/ops have an Enterprise strength toolset for actually realising this.

# LET'S TALK TECH - TOOLS FOR CLOUD NATIVE DEV





**OPENSIFT ≠ KUBERNETES**

**OPENSIFT = KUBERNETES++**

# EASING DEVELOPERS INTO CLOUD NATIVE



“Missions”

i.e.

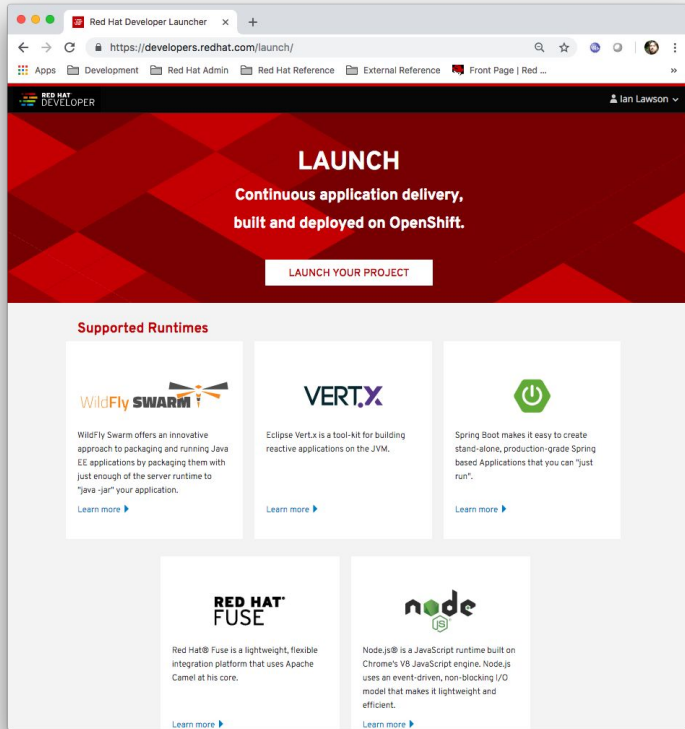
REST API Level 0  
Istio Circuit Breaker

“Runtimes”





# DEVELOPER LAUNCHPAD FOR RHOAR



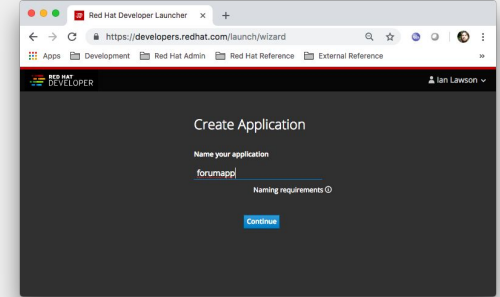
The screenshot shows the landing page of the Red Hat Developer Launcher. The header features the Red Hat logo and the user name 'lan Lawson'. The main content area has a red background with the text 'LAUNCH Continuous application delivery, built and deployed on OpenShift.' and a 'LAUNCH YOUR PROJECT' button. Below this, there is a 'Supported Runtimes' section with five cards: WildFly Swarm, Vert.x, Spring Boot, Red Hat Fuse, and Node.js. Each card includes a brief description and a 'Learn more' link.

**LAUNCH**  
Continuous application delivery,  
built and deployed on OpenShift.

[LAUNCH YOUR PROJECT](#)

### Supported Runtimes

- WildFly SWARM**  
WildFly Swarm offers an innovative approach to packaging and running Java EE applications by packaging them with just enough of the server runtime to "java -jar" your application.  
[Learn more](#)
- VERT.X**  
Eclipse Vert.x is a tool-kit for building reactive applications on the JVM.  
[Learn more](#)
- Spring Boot**  
Spring Boot makes it easy to create stand-alone, production-grade Spring based Applications that you can "just run".  
[Learn more](#)
- RED HAT FUSE**  
Red Hat® Fuse is a lightweight, flexible integration platform that uses Apache Camel at its core.  
[Learn more](#)
- node**  
Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient.  
[Learn more](#)



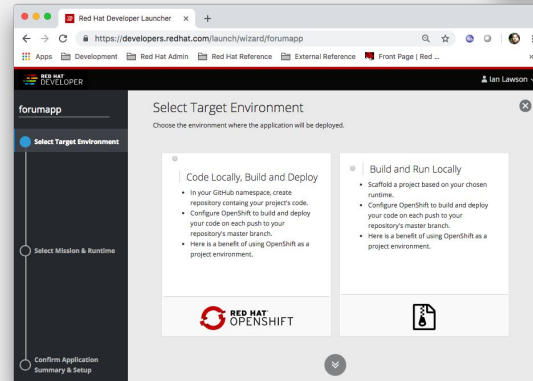
The screenshot shows the 'Create Application' wizard in the Red Hat Developer Launcher. The user has named the application 'forumapp'. There is a 'Naming requirements' section and a 'Continue' button.

Create Application

Name your application  
forumapp

Naming requirements

[Continue](#)



The screenshot shows the 'Select Target Environment' wizard in the Red Hat Developer Launcher. The user has selected 'forumapp' and is choosing the environment where the application will be deployed. There are two main options: 'Code Locally, Build and Deploy' and 'Build and Run Locally'. The 'Build and Run Locally' option is selected.

forumapp

### Select Target Environment

Choose the environment where the application will be deployed.

- Code Locally, Build and Deploy**
  - In your OpenShift namespace, create repository containing your projects code.
  - Configure OpenShift to build and deploy your code on each push to your repository's master branch.
  - Here is a benefits of using OpenShift as a project environment.
- Build and Run Locally**
  - Scaffold a project based on your chosen runtime.
  - Configure OpenShift to build and deploy your code on each push to your repository's master branch.
  - Here is a benefits of using OpenShift as a project environment.

[RED HAT OPENSIFT](#)



# SIMPLIFYING THE CLI EXPERIENCE

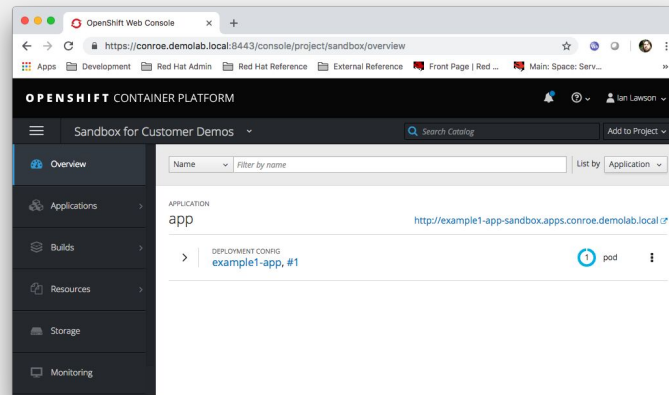
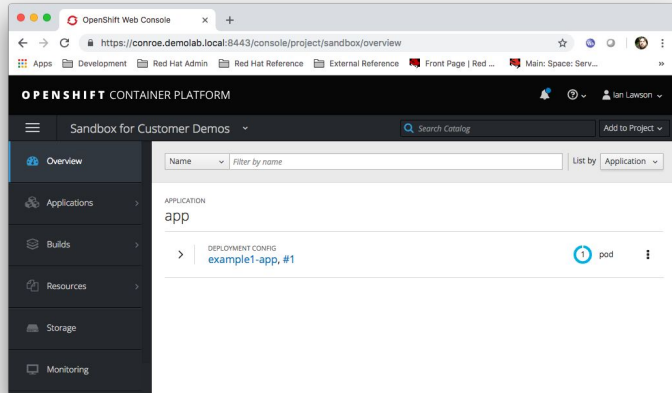
## OPENSIFT-DO “odo”

```
Ians-MacBook-Pro-2:nodejs-ex uthers$ odo project
The current project is: sandbox
Ians-MacBook-Pro-2:nodejs-ex uthers$ odo create nodejs example1
Please wait, creating example1 component ...
Component 'example1' was created and port 8080/TCP was opened
To push source code to the component run 'odo push'

Component 'example1' is now set as active component.
```

```
Ians-MacBook-Pro-2:nodejs-ex uthers$ odo url create
Adding URL to component: example1
URL created for component: example1

example1 -- http://example1-app-sandbox.apps.conroe.demolab.local
Ians-MacBook-Pro-2:nodejs-ex uthers$ █
```



# SIMPLIFYING THE CLI EXPERIENCE

## OPENSIFT-DO “odo”

- A new CLI plugin for OCP 3.9+
- Tailored for dev syntax and workflows
- Simple to create an app, add components, expose it
- No need for an understanding of Kubernetes or OCP

```
> odo create wildfly backend
Component 'backend' was created.
To push source code to the component run 'odo push'

> odo push
Pushing changes to component: backend

> odo storage create backend-store --path /data --size 100M
Added storage backend-store to backend

> odo create php frontend
Component 'frontend' was created.
To push source code to the component run 'odo push'

> odo push
Pushing changes to component: frontend

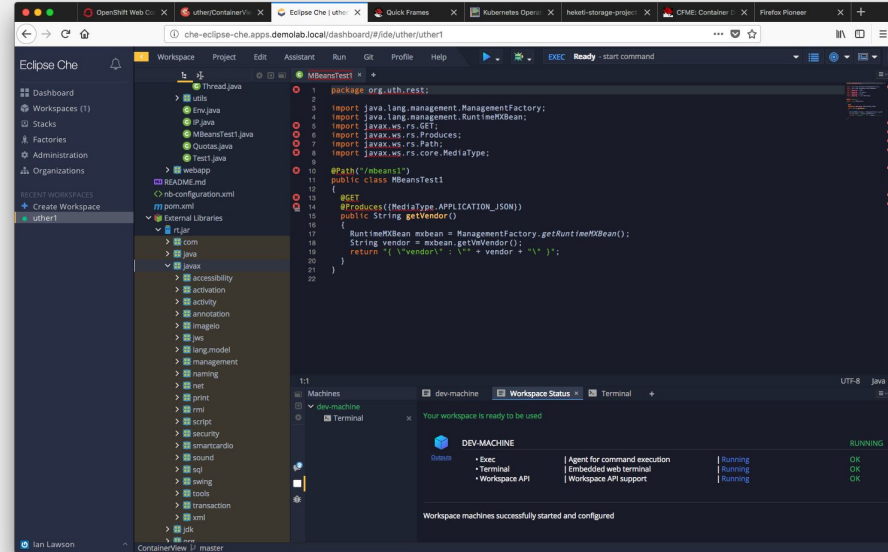
> odo url create
frontend - http://frontend-myproject.192.168.99.100.nip.io

> odo watch
Waiting for something to change in /Users/tomas/odo/frontend
```

```
Ians-MacBook-Pro-2:~ uthers$ odo catalog list
NAME TAGS
dotnet 1.0,1.1,2.0,2.1,latest
fis-java-openshift 1.0,2.0
fis-karaf-openshift 1.0,2.0
httpd 2.4,latest
java 8,latest
jboss-decisionserver62-openshift 1.2
jboss-decisionserver63-openshift 1.3,1.4
jboss-decisionserver64-openshift 1.0,1.1,1.2,1.3
jboss-eap64-openshift 1.1,1.2,1.3,1.4,1.5,1.6,1.7,1.8,latest
jboss-eap70-openshift 1.3,1.4,1.5,1.6,1.7
jboss-eap71-openshift 1.1,1.2,1.3,latest
jboss-fuse70-eap-openshift 1.0
jboss-fuse70-java-openshift 1.0
jboss-fuse70-karaf-openshift 1.0
jboss-processserver63-openshift 1.3,1.4
jboss-processserver64-openshift 1.0,1.1,1.2,1.3
jboss-webserver30-tomcat7-openshift 1.1,1.2,1.3
jboss-webserver30-tomcat8-openshift 1.1,1.2,1.3
jboss-webserver31-tomcat7-openshift 1.0,1.1,1.2
jboss-webserver31-tomcat8-openshift 1.0,1.1,1.2
nginx 1.10,1.12,1.8,latest
nodejs 0.10,4,6,8,8-RHOAR,latest
perl 5.16,5.20,5.24,latest
php 5.5,5.6,7.0,7.1,latest
python 2.7,3.3,3.4,3.5,3.6,latest
redhat-openshift 1.0,1.1,1.2,1.3,1.4
ruby 2.0,2.2,2.3,2.4,2.5,latest
```

# BE THE CODENVY OF YOUR FELLOW DEVS

- Beta of Red Hat supported Che on OpenShift by end of CY2018
- Red Hat supported SKU bundled with OpenShift



# ONE MESH TO FIND THEM, AND IN THE DARKNESS BIND THEM

Istio, Maistra and Red Hat OpenShift Service Mesh



BUT WHY RED HAT?



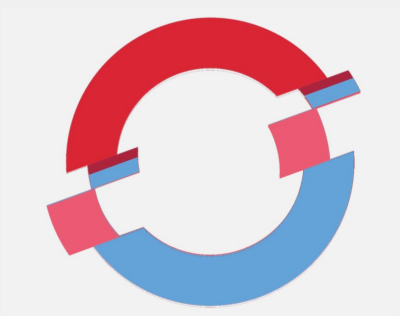
# THE 4:00AM STACK TRACE

OPEN SOURCE IS STUPIDLY COMPLEX.

COMMUNITY IS FREE. FOR A REASON.

RED HAT 'ENTERPRISE STRENGTHEN'

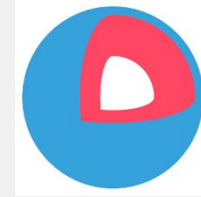
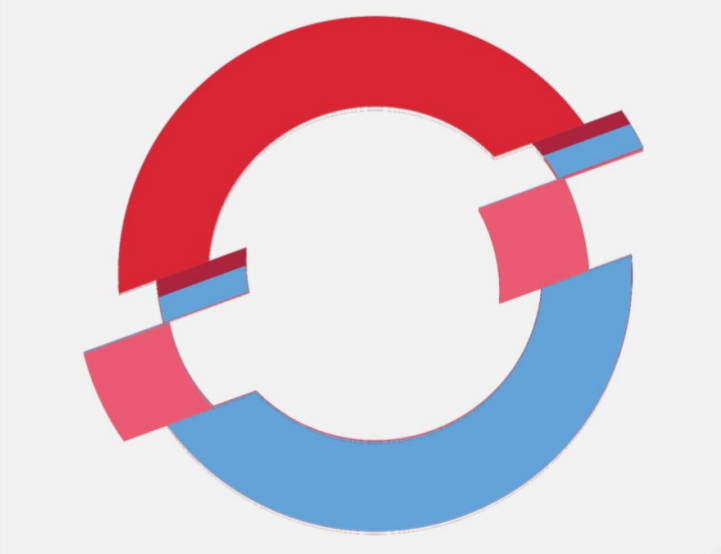
BUT THAT'S NOT THE WHOLE STORY



**RED HAT \*IS\* COMMUNITY**

ESPECIALLY WHEN IT COMES TO THE  
CONTAINER REVOLUTION

# OCP4



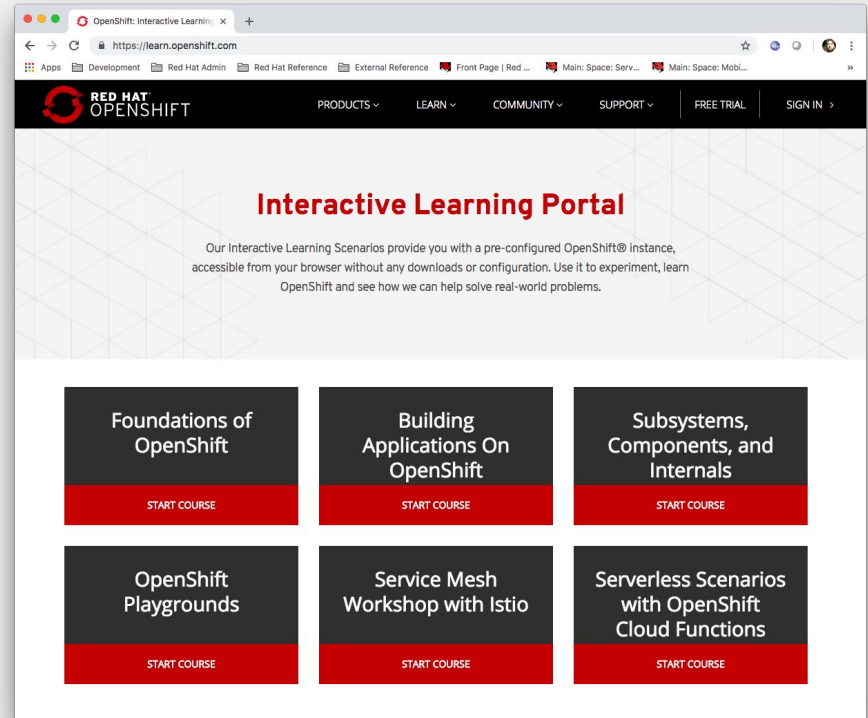


FANCY A TINKER? FOR FREE?



# LOTS OF FREE RESOURCES TO PLAY WITH

- [learn.openshift.com](https://learn.openshift.com)
- CDK/Minishift
- oc cluster up
- [docs.openshift.com](https://docs.openshift.com)
- [blogs.openshift.com](https://blogs.openshift.com)
- [developers.redhat.com/launch](https://developers.redhat.com/launch)





OpenShift Web Console

https://console.engint.openshift.com/console/project/forumtest/overview

OPENS SHIFT DEDICATED

Forum Test

Overview

APPLICATION

booster <http://booster-forumtest.e8ca.engint.openshiftapps.com>

DEPLOYMENT CONFIG

booster, #29

360 Mib Memory

0 Cores CPU

0.8 Kib/s Network

Average Usage Last: 15 Minutes

CONTAINERS

wildfly-swarm

- Image: forumtest/booster 16aecf5 266.6 MIB
- Build: booster-s2l, #29
- Source: Binary

MEOWWORLD2 - RED HAT UKI

Not ...cure | booster-foru...

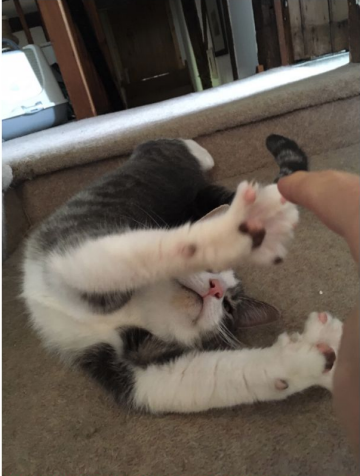
Apps | Development | Red Hat Admin

RED HAT OPENS SHIFT Application Runtimes

# MEOW WORLD 2

Cats: winnie, molly, dexter, murphy, jessie, kali

Invoke



*Murphy (aka Budders), brother of Jessie, has mastered the art of cute-fu*