



Openshift Trilogy Schedule

PHA: 10/10/2017 **Container Wars: A New Hope**

Openshift - DevOps - Automation Overview

BRNO: 1/11/2017 **Container Wars: API strikes back**

Agile integration & API Workshop

PHA?: 14/11/2017 **Container Wars: Return of the App**

Jedi's App development & DevOps Workshop

Container LAB @ Opensource Summit Prague !!!

23.10. - 27.10 2017

**Capacity limited
Register today !**

Reoccurring hands-on Workshops :

Every day, 10:00 , 12:00, 14:00

- Spin-up your first container in seconds
- Develop simple Multi-language apps in Openshift
- Build your first fully automated CI/CD flow in Openshift
- Integrate services in Openshift
- Attach persistent storage to your containerized apps





@ OCP Trilogy
10/10/2017

Openshift Trilogy: A New Hope

Jiří Kolář
Solution Architect CZ/SK/CEE
jkolar@redhat.com

Modern App Dev?



Modern App Dev?

Digital Transformation?
It requires an evolution in....



Process



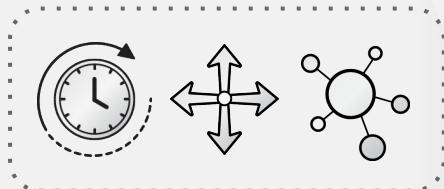
Infrastructure



Architecture

PROCESS ?

PROBLEM:

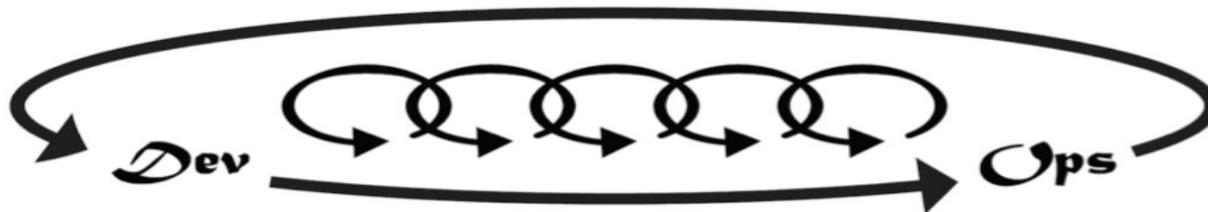


DEVELOPERS



I.T. OPERATIONS

SOLUTION:



Key concepts:

- Small changes -> Less Risk
- Delivery pipeline = **Automation!**
- Fail fast and recover vs. Never fail
- Culture change: Acceptance of failure

WHAT IS INFRASTRUCTURE?

PROBLEM:

Craftwork

Physical

How to Build an App:

1. Have Idea
2. Get Budget
3. Submit hardware acquisition request
4. Wait
5. Get Hardware
6. Rack and Stack Hardware
7. Install Operating System
8. Install Operating System Patches
9. Create user Accounts
10. Deploy framework/appserver
11. Deploy testing tools
- Code**
13. Test
14. Buy and configure Prod servers
15. Push to Prod
16. Launch
17. Order more servers to meet demand
18. Wait...
19. Deploy new servers
20. Etc.

Virtualized

How to Build an App:

1. Have Idea
2. Get Budget
3. Submit VM Request request
4. Wait
5. Deploy framework/appserver
6. Deploy testing tools
- Code**
8. Test
9. Configure Prod VMs
10. Push to Prod
11. Launch
12. Request VMs to meet demand
13. Wait
14. Deploy app to new VMs
15. Etc.

Assembly Line

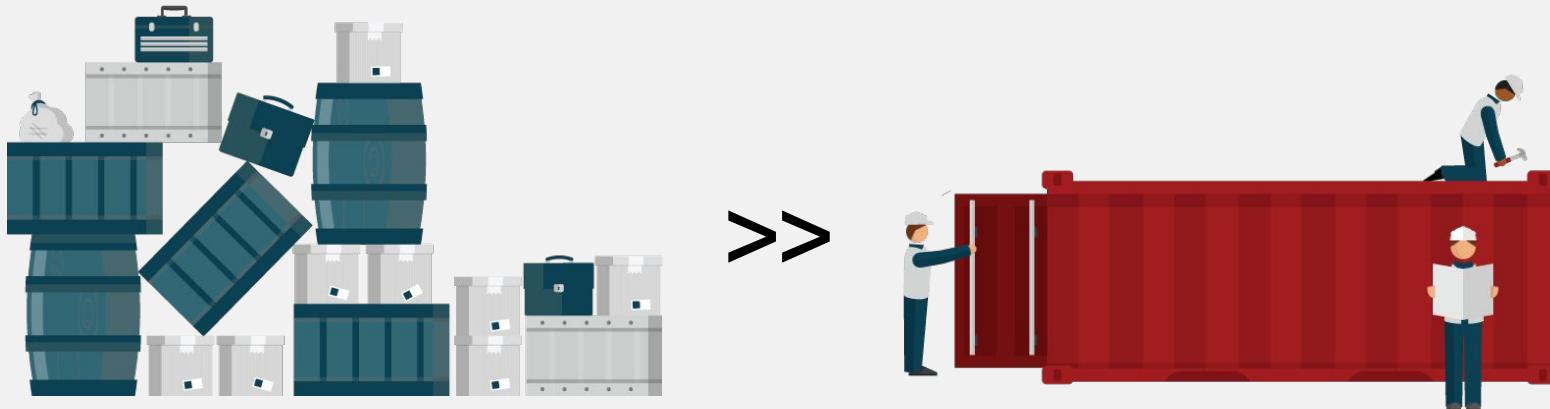
Container PaaS

How to Build an App:

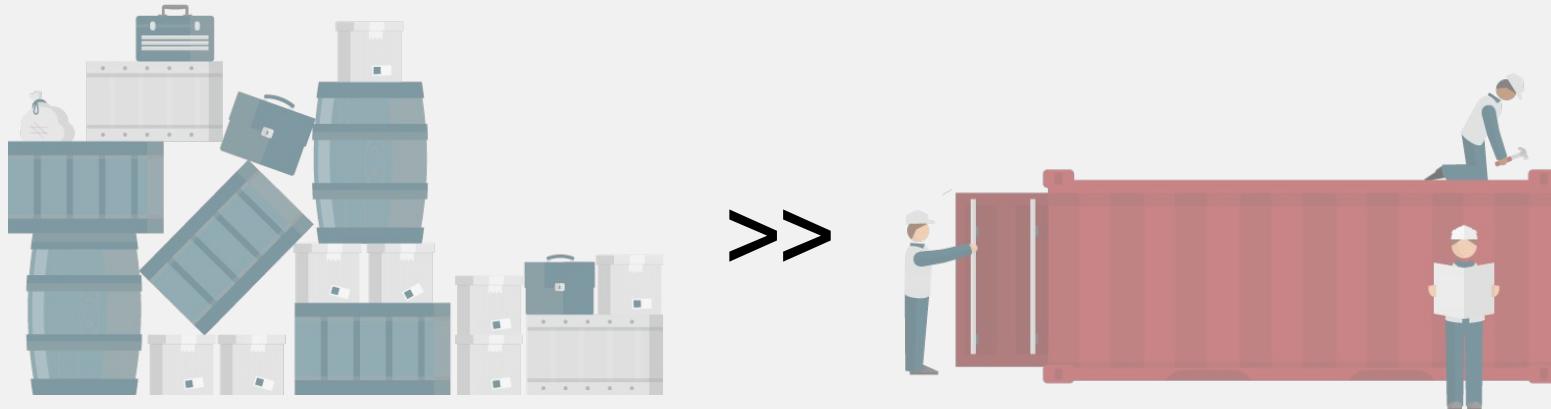
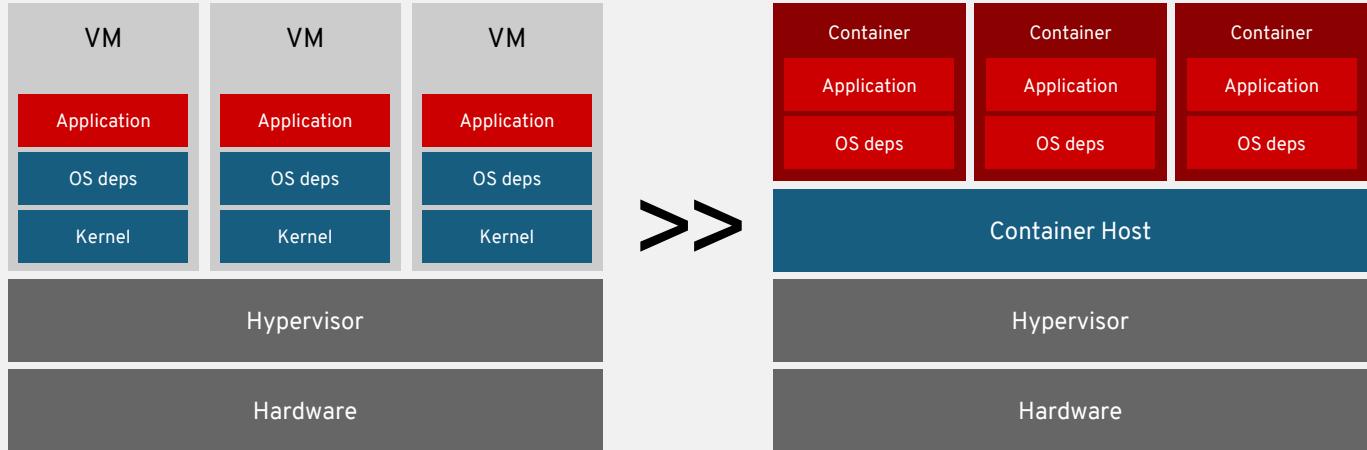
- Have Idea**
- Get Budget**
- Code**
- Test**
- Launch**
- Automatically Scale**



SOLUTION:

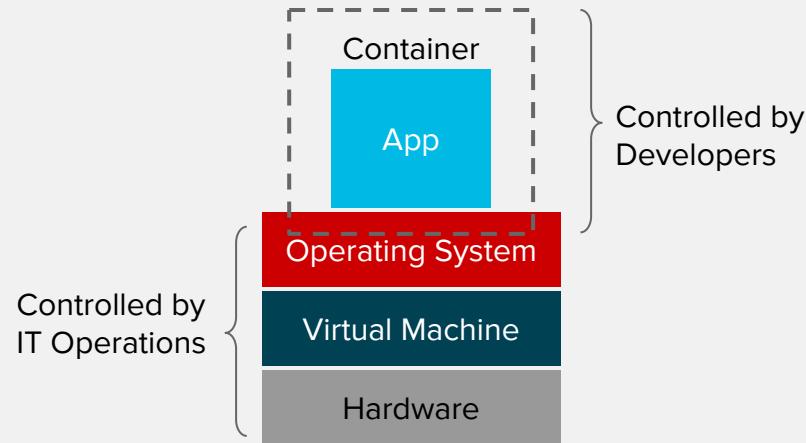


Containers!



WHAT ARE CONTAINERS?

It Depends Who You Ask



DEVS

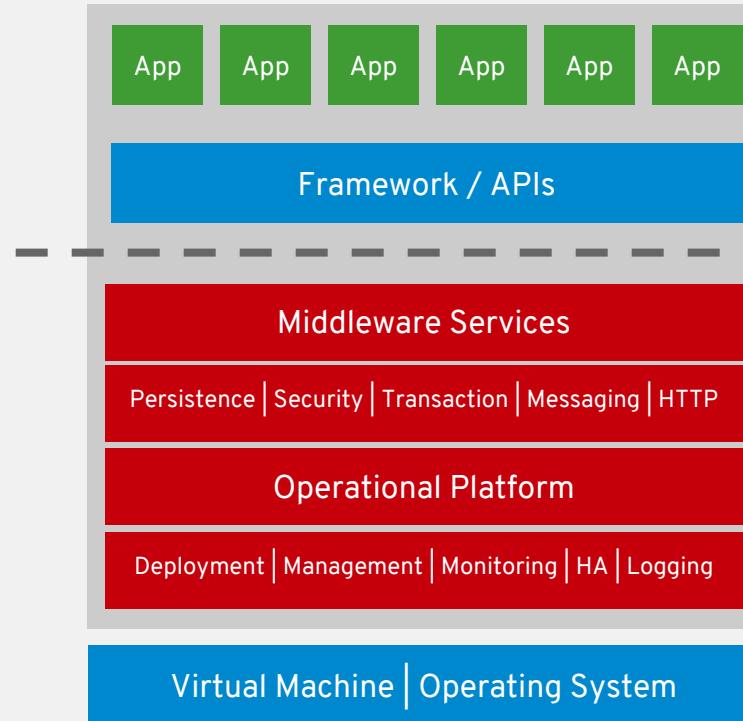
- Package apps with all dependencies
- Deploy to any environment in seconds
- Easily accessed and shared

OPS

- Application processes on a shared kernel
- Simpler, lighter, and denser than VMs
- Portable across different environments

ARCHITECTURE?

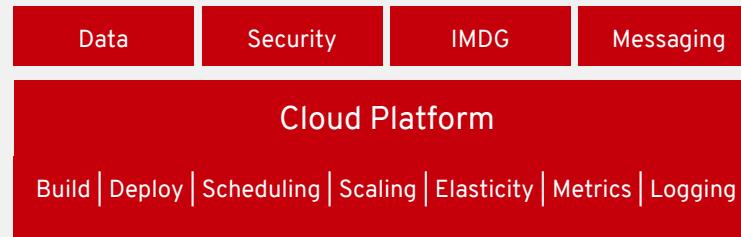
THE APPSERVER 2000-2014



ORACLE®

WebSphere® software

THE APPSERVER 2014 - ...





OpenShift

Container Platform



Self-Service



Multi-language



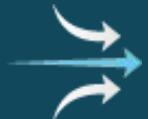
Automation



Collaboration



Seamless



RED HAT[®]
OPENSHIFT



Standards-based



Web-scale



Open Source



Enterprise Grade



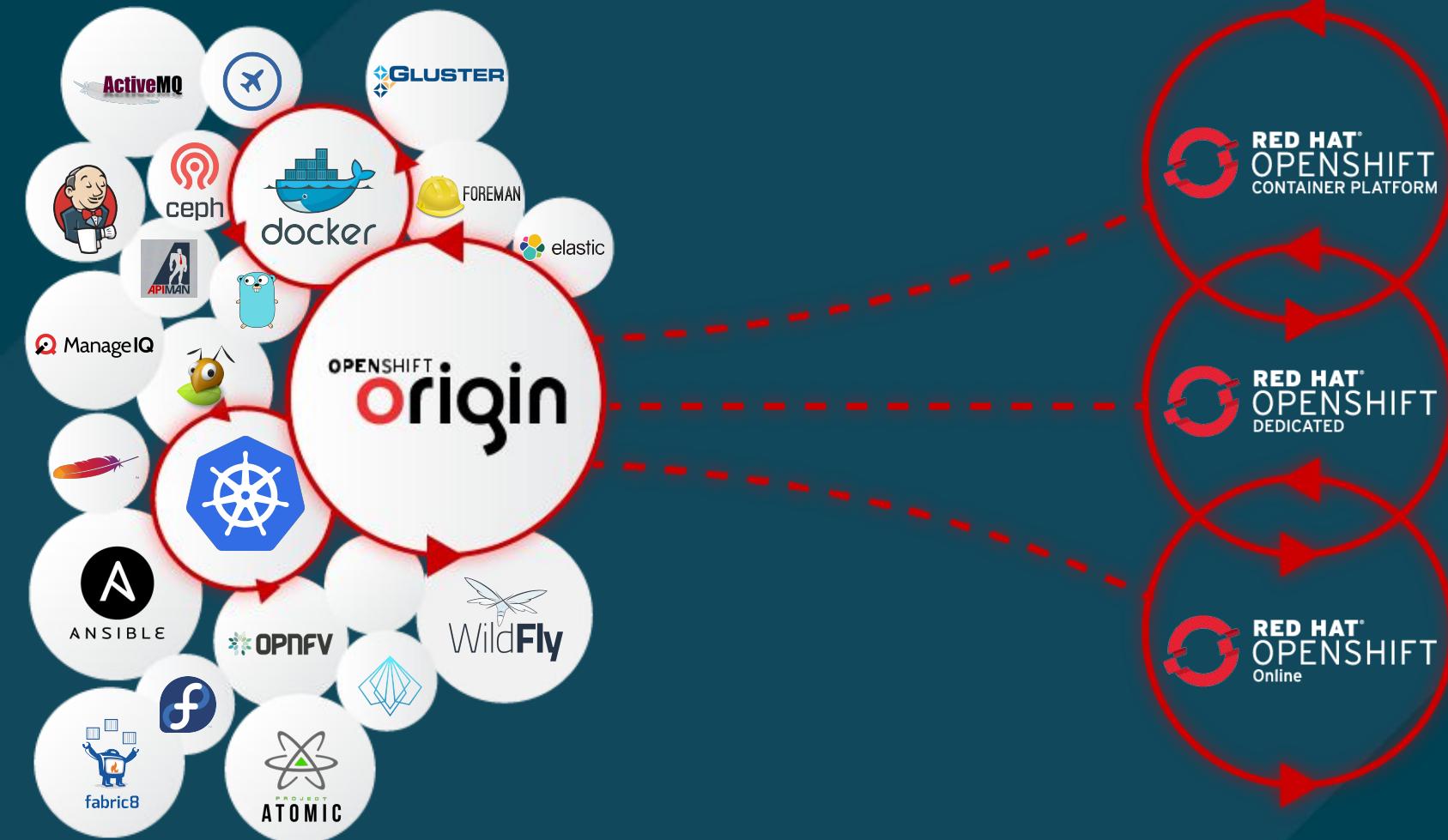
Secure



TRUE POLYGLOT PLATFORM

LANGUAGES	Java	NodeJS	Python	PHP	Perl	Ruby	.NET Core	Third-party Language Runtimes	
DATABASES	MySQL	PostgreSQL	MongoDB	Redis	<p>...and virtually any docker image out there!</p>				CrunchyData GitLab Iron.io Couchbase Sonatype EnterpriseDB NuoDB Fujitsu and many more
WEB SERVERS	Apache HTTP Server	nginx	Varnish	Phusion Passenger	Tomcat	Third-party App Runtimes			
MIDDLEWARE	Spring Boot	Wildfly Swarm	Vert.x	JBoss Web Server	JBoss EAP	JBoss A-MQ	JBoss Fuse	Third-party Middleware	
	3SCALE API mgmt	JBoss BRMS	JBoss BPMS	JBoss Data Virt	JBoss Data Grid	RH Mobile	RH SSO	Third-party Middleware	

Community Powered Innovation





OpenShift

What is inside?



Trusted Container OS



Enterprise Container Host

Container Runtime & Packaging
(Docker)

Atomic Host

Red Hat Enterprise Linux

Trusted by Fortune Global
500 companies



Enterprise Kubernetes



Container Orchestration & Cluster Management
(kubernetes)

Networking Storage Registry Logs & Metrics Security

Infrastructure Automation & Mg



Enterprise Container Host

Container Runtime & Packaging
(Docker)

Atomic Host

Red Hat Enterprise Linux



kubernetes
Cloudforms
Red Hat Storage



Enterprise Container Platform



Self-Service

Service Catalog
(Language Runtimes, Middleware, Databases)

Build Automation Deployment Automation

OpenShift Application Lifecycle Management
(CI/CD)



Container Orchestration & Cluster Management
(kubernetes)

Networking Storage Registry Logs & Metrics Security

Infrastructure Automation & Cockpit



Enterprise Container Host

Container Runtime & Packaging
(Docker)

Atomic Host Red Hat Enterprise Linux

**Source-2-Image
Application Pipelines
Dev Tools**

Traditional, Stateful, and Microservices-based Apps

Business Automation

Integration

Data & Storage

Web & Mobile

Container

Container

Container

Container



Self-Service

Service Catalog
(Language Runtimes, Middleware, Databases)

Build Automation Deployment Automation

OpenShift Application Lifecycle Management
(CI/CD)



Container Orchestration & Cluster Management
(kubernetes)

Networking Storage Registry Logs & Metrics Security

Infrastructure Automation & Cockpit



Enterprise Container Host

Container Runtime & Packaging
(Docker)

Atomic Host

Red Hat Enterprise Linux

JBOSS EAP
JBOSS DATA GRID
JBOSS DATA VIRTUALIZATION
JBOSS AM-Q
JBOSS BRMS
JBOSS BPM
JBOSS FUSE
RED HAT MOBILE
3 Scale

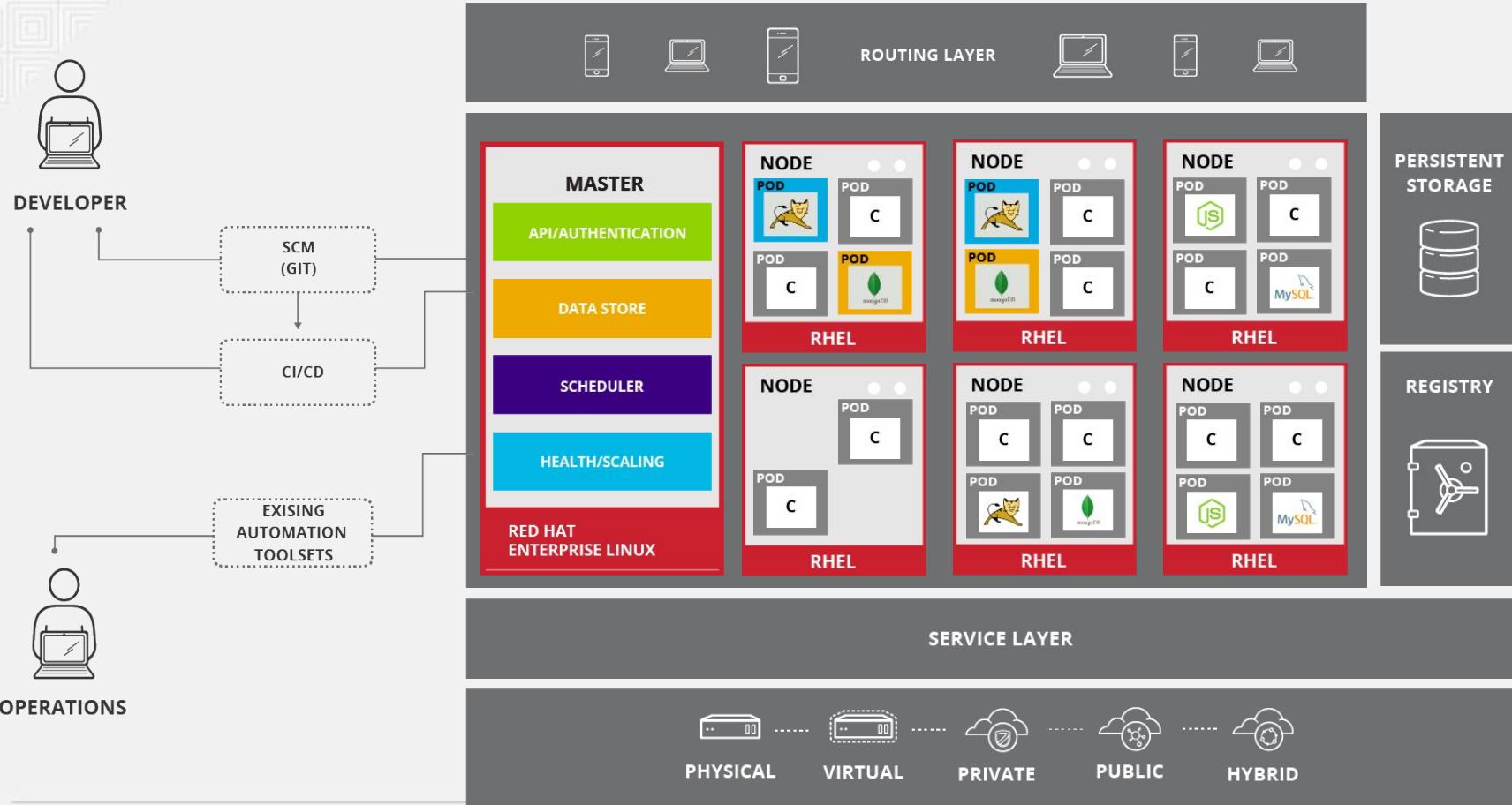
The background of the slide features a large stack of shipping containers in a port terminal. The containers are stacked high, creating a repetitive pattern of rectangular shapes. The lighting suggests a bright day with shadows cast by the containers.

OpenShift

How it works



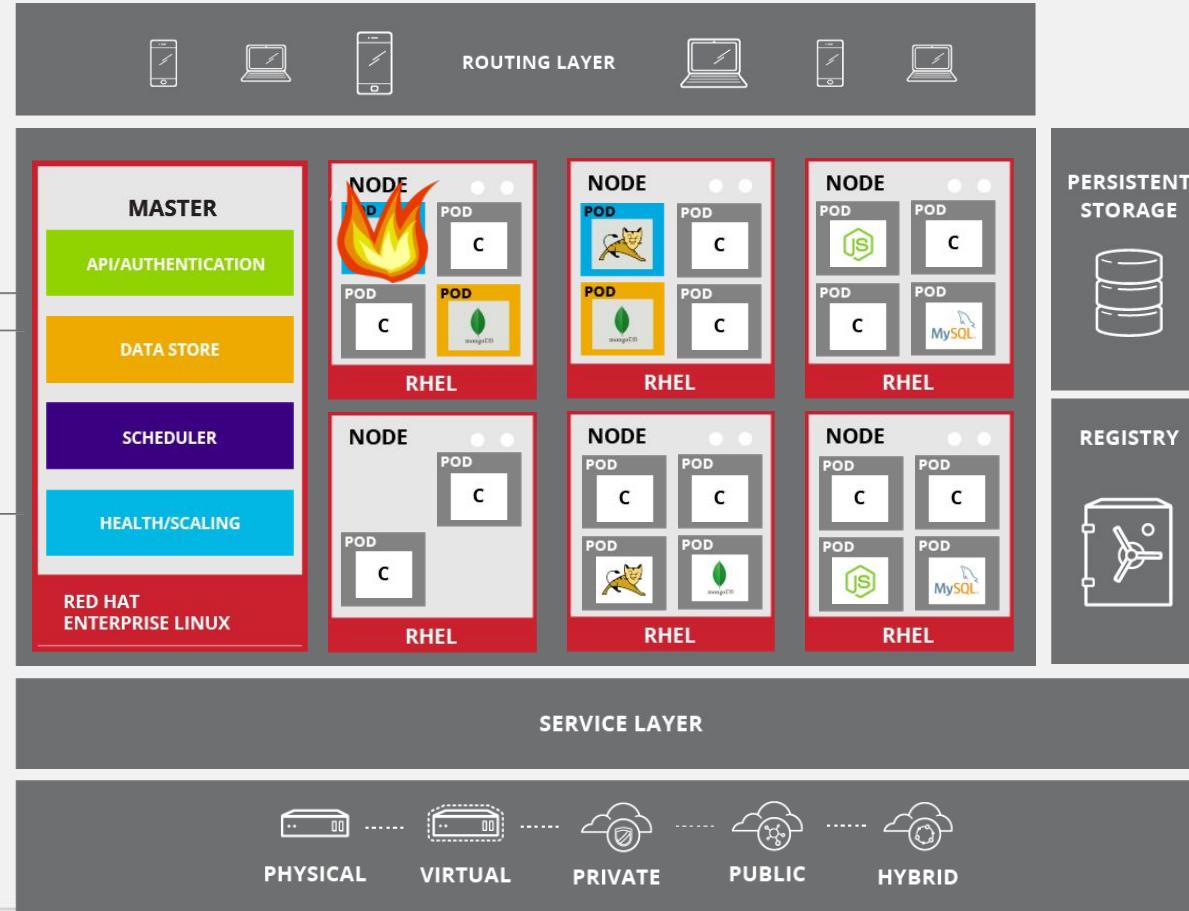
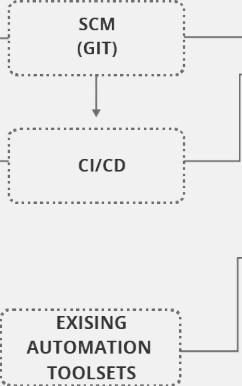
Openshift architecture



What if ..



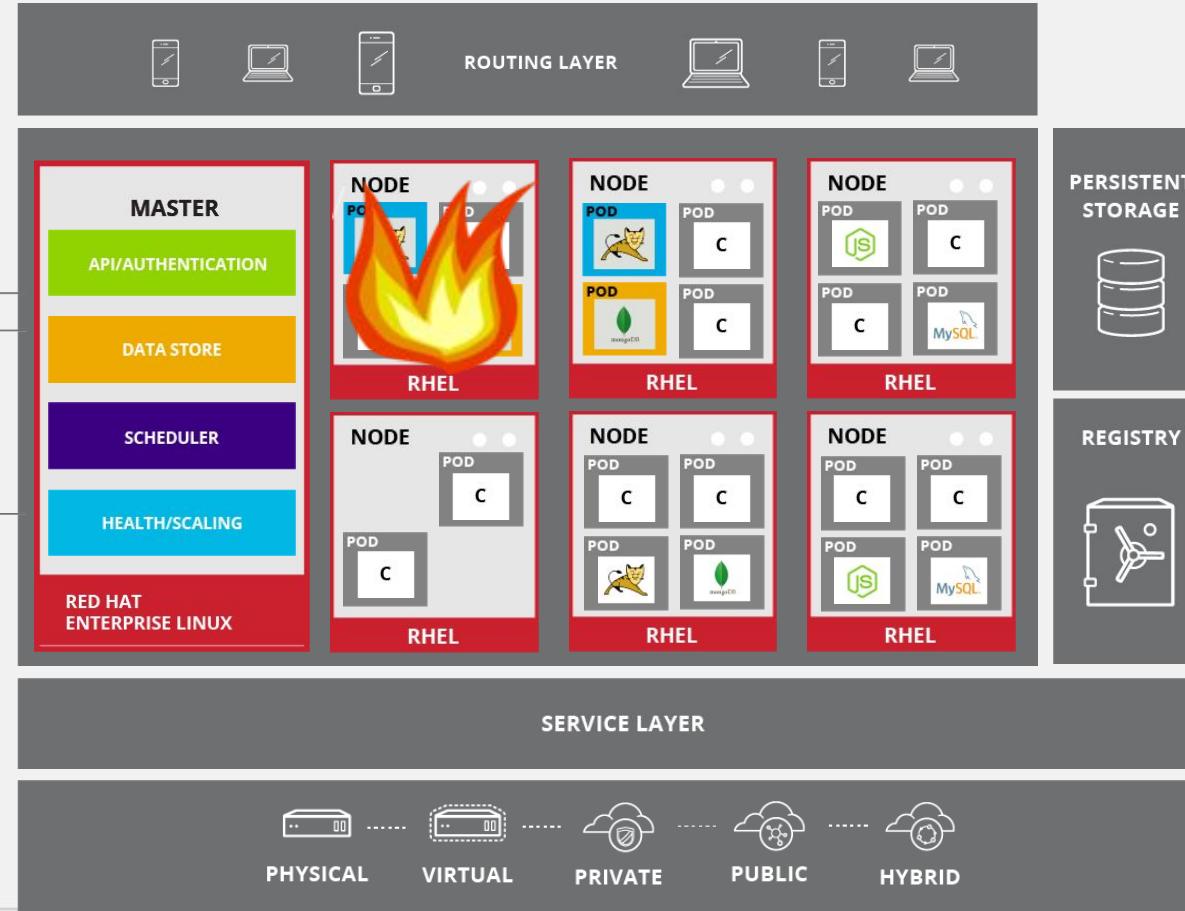
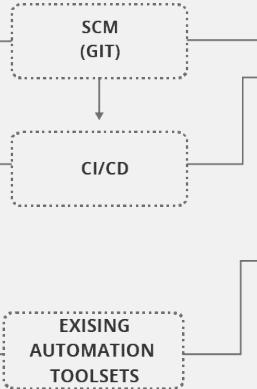
DEVELOPER



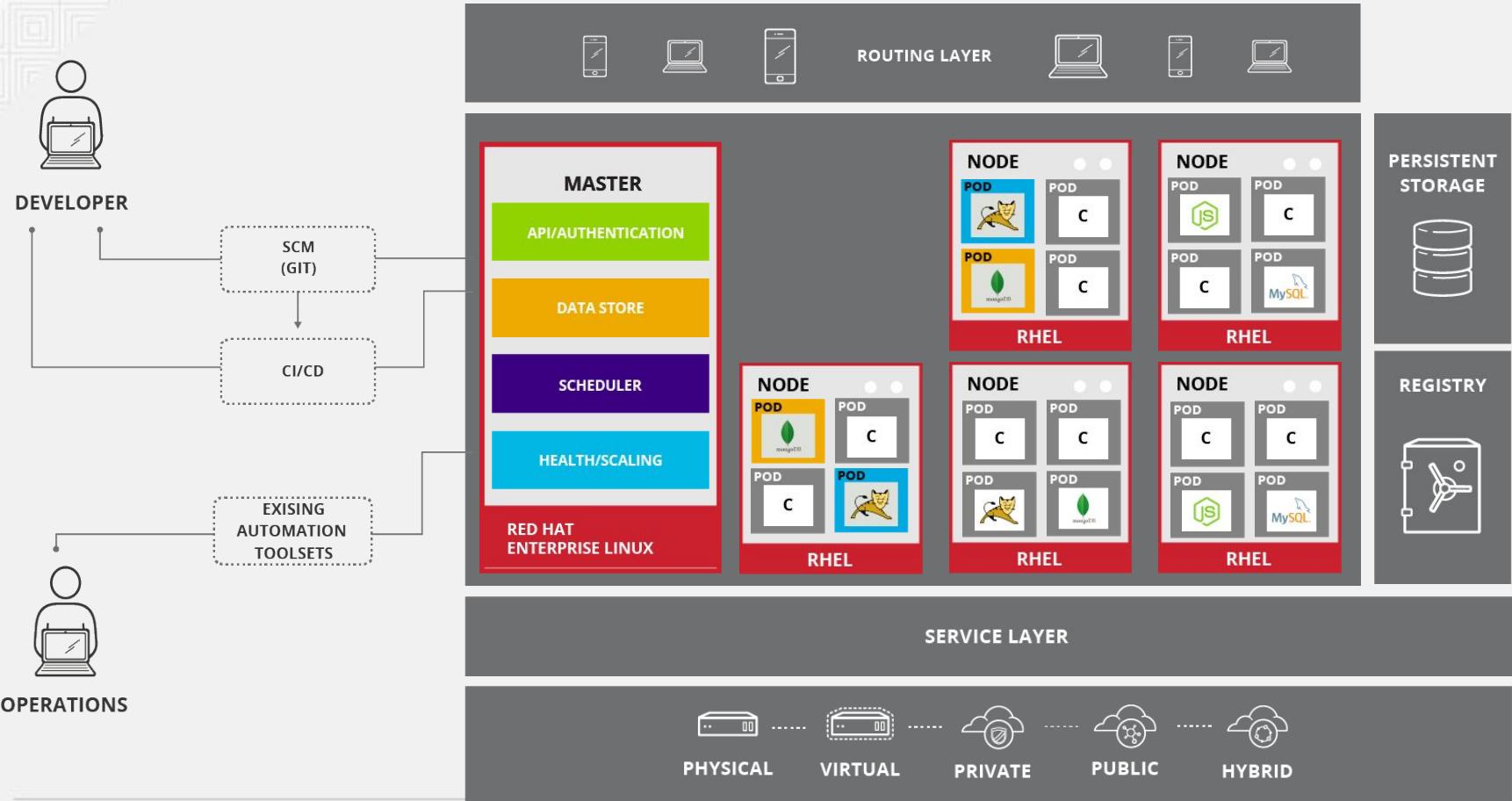
What if ...



DEVELOPER



Self-healing AKA. Contant HA



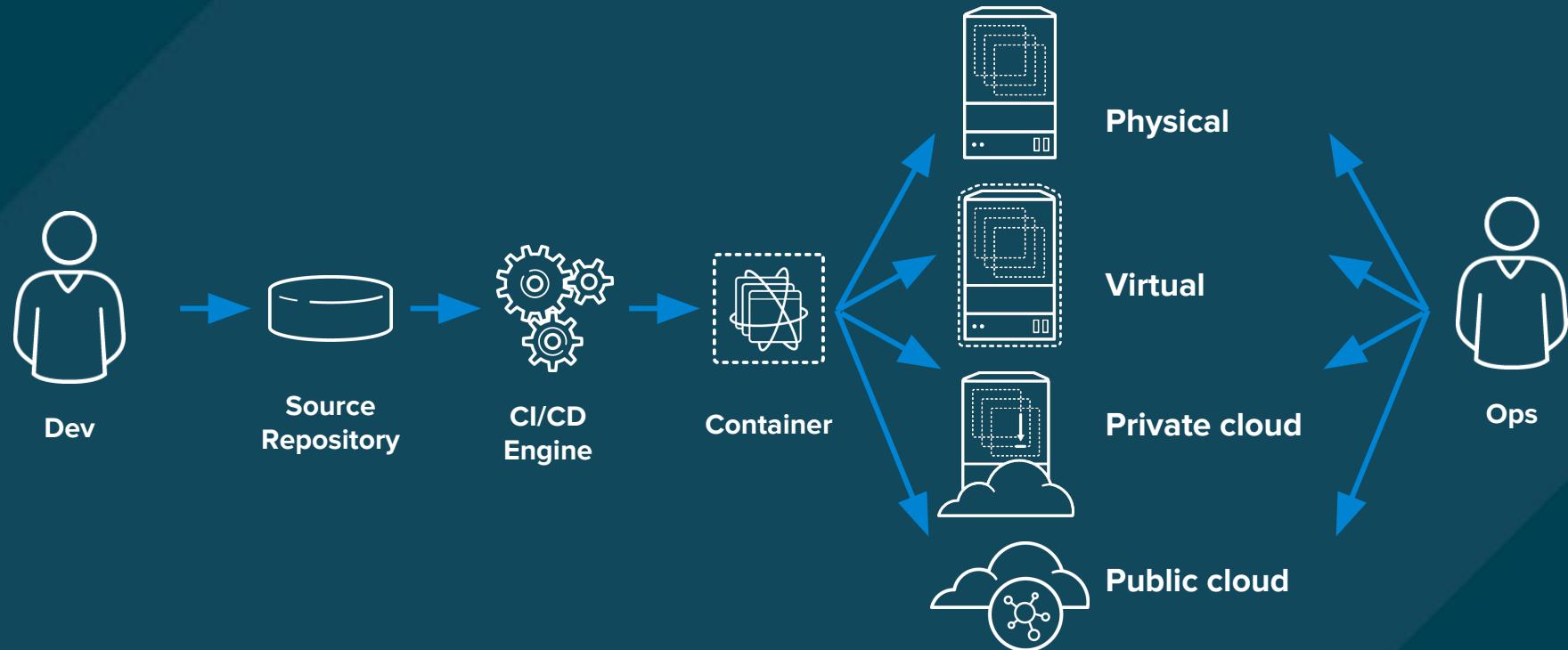


OpenShift

Build automation



DevOps need automation !



Source 2 Image Walk Through

Code



git



DEV

Build

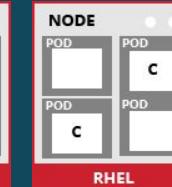
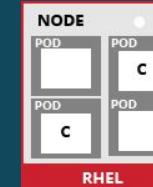
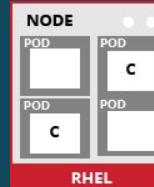


Container
Image



Registry

Deploy



OPS

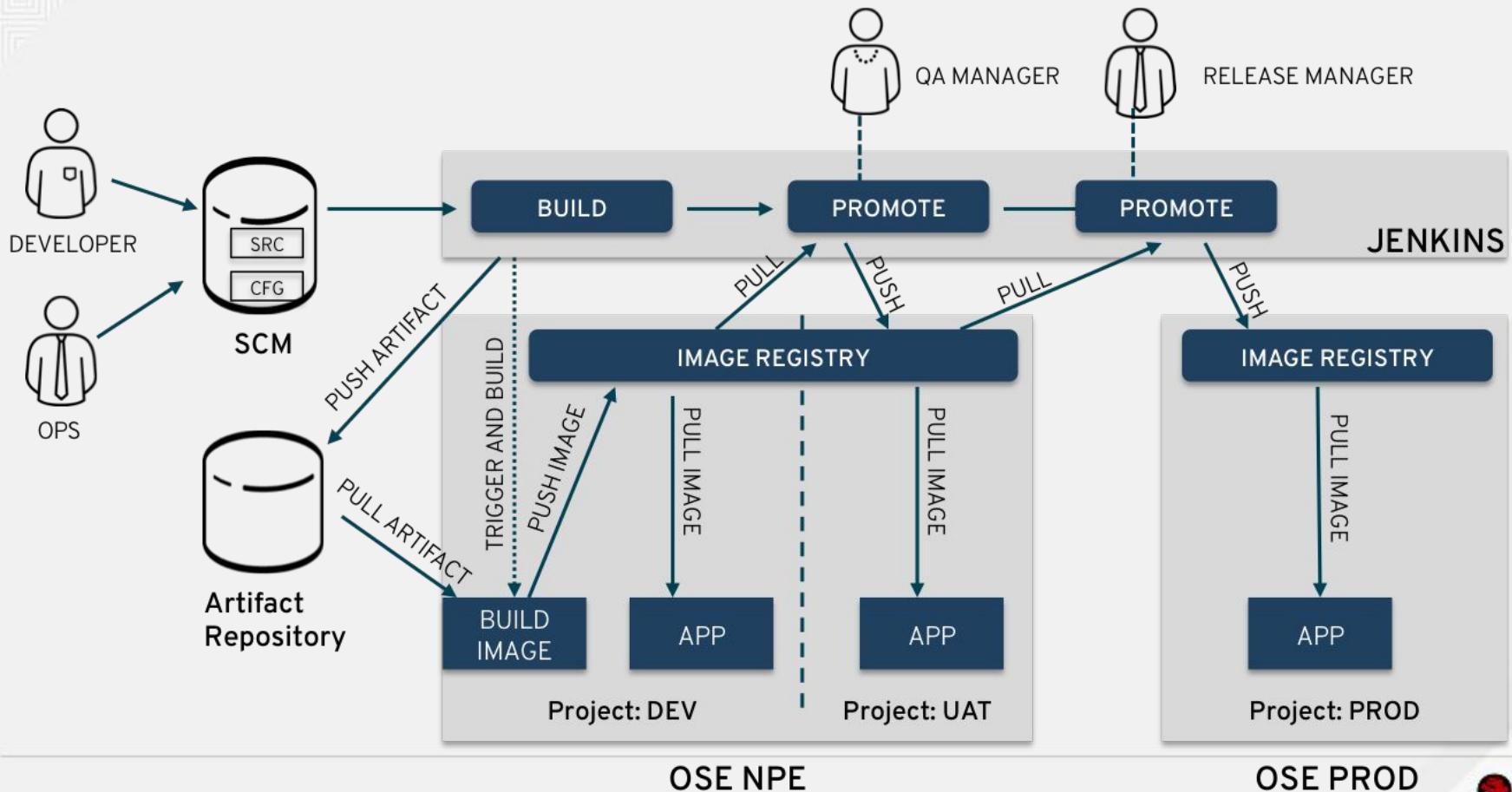
A photograph of a large stack of shipping containers in a port terminal. The containers are stacked high, filling the frame. The colors are somewhat muted, with a yellowish tint. In the center, there is a white overlay containing text.

OpenShift

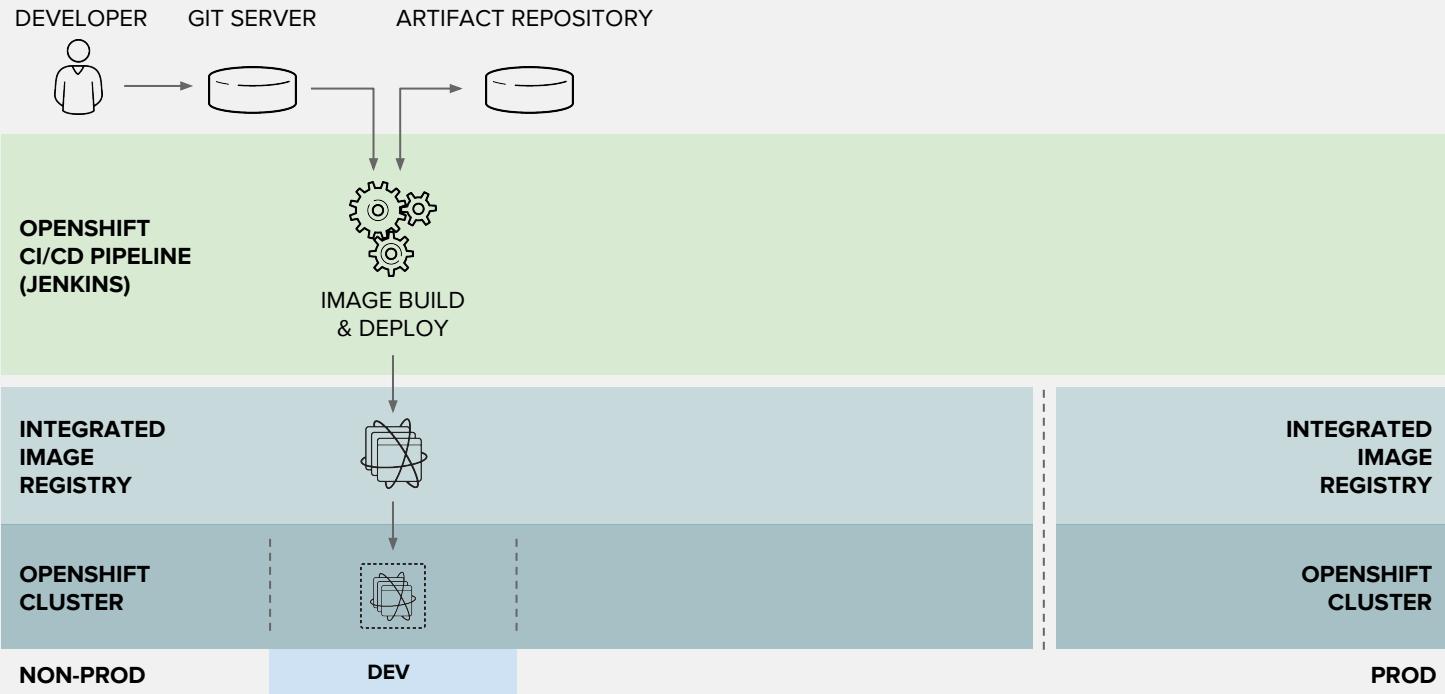
Full CI/CD platform



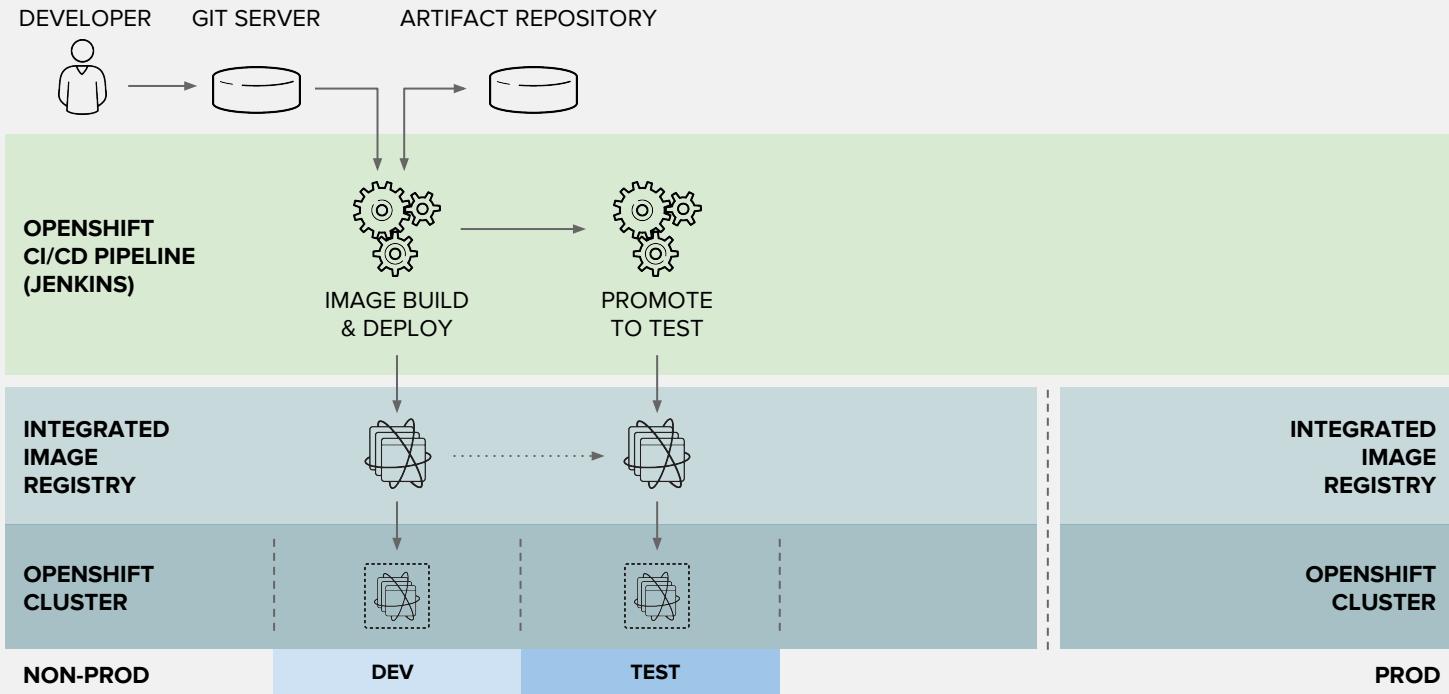
OpenShift CI/CD flow



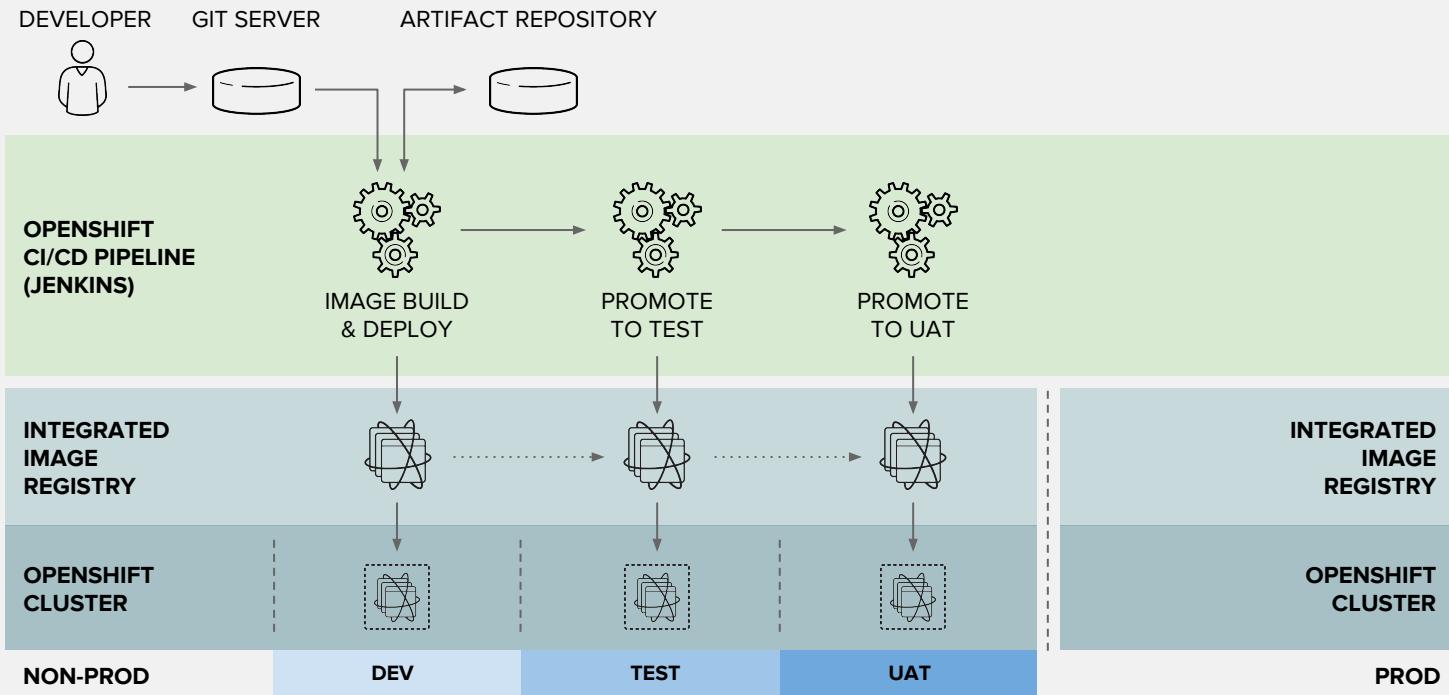
CONTINUOUS DELIVERY PIPELINE



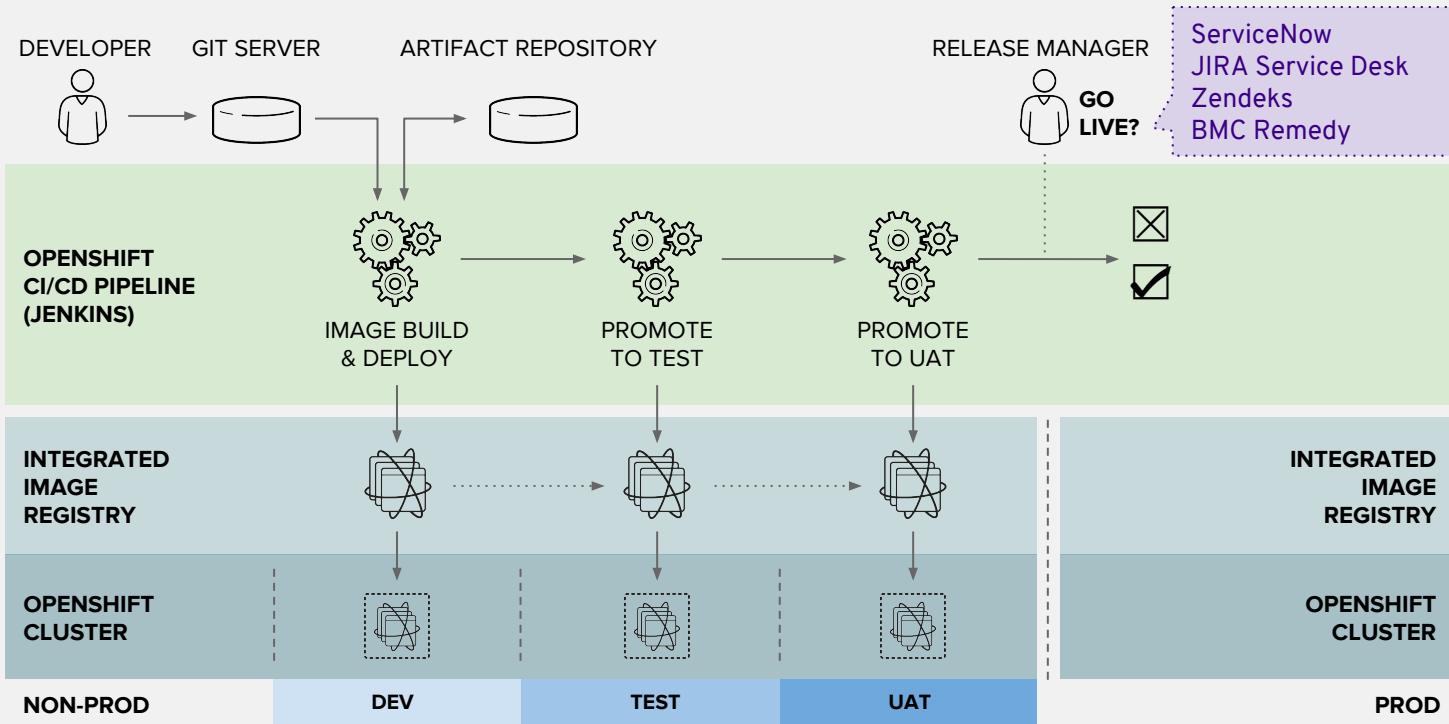
CONTINUOUS DELIVERY PIPELINE



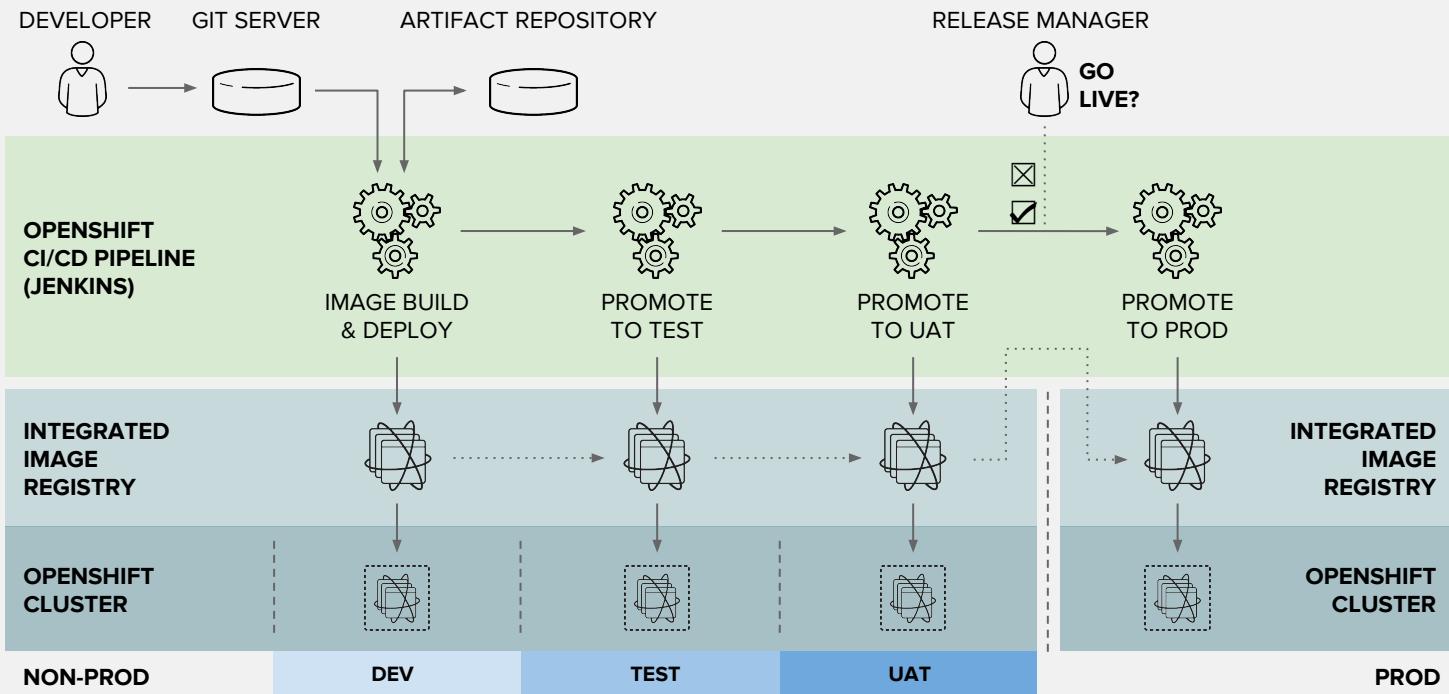
CONTINUOUS DELIVERY PIPELINE



CONTINUOUS DELIVERY PIPELINE



CONTINUOUS DELIVERY PIPELINE



The background image shows the interior of a large industrial ship's cargo hold. Numerous shipping containers are stacked in several layers. The containers are primarily white and green. The ship's metal structure, including beams, ladders, and walkways, is visible throughout the frame.

OpenShift

Customer References



DEUTSCHE BANK - Technology Transformation



"Delivering Everything as a Service. From 20% adoption to 40% in 1yr; planning to move 85% of all applications to OpenShift platform. We won the hearts and minds of developers." -- Pat Healy, CTO, Deutsche Bank

- Macro trends are radically reshaping the banking industry
- Need to regain software expertise that was previously outsourced
- OpenShift replaced an internal, homegrown PaaS platform
- Over 300 internal projects moved to OpenShift
- 6x better efficiency of computing resources using containers and OpenShift. Driving overall utilization up via multi-tenancy.
- Leverage OpenShift across multiple public clouds.

Ideas to Production, safely in a day.

View the [Deutsche Bank keynote](#)

DEUTSCHE BANK - Technology Transformation

“Delivering Everything as a Service. From 20% adoption to 40% in 1yr; planning to move 85% of all applications to OpenShift platform. We won the hearts and minds of developers.”

EVERYTHING AS A SERVICE

Provider abstraction, best execution venue

Drive utilisation up through multi-tenancy – we have history

Standardised application building blocks, API focus

Frictionless, safe & rapid path to production

The “AO” – ‘Ideas to production, safely in a day’





Reduce complexity of our IT Infrastructure

Key performance indicators	2015	2020 Plan	Change
Operating systems	45	4	~90%
End-of-life hardware / software	166	0	100%
% virtualisation	46%	95%	49ppts
Private cloud adoption	20%	80%	60ppts
Intersystem reconciliations	~1,000	~300	70%

“Run the bank” costs targeted to decline by EUR ~800 m

BARCLAYS BANK - Digital Transformation



"OpenShift is the primary platform to deploy Barclays apps across any clouds. We couldn't be happier with our OpenShift progress to date."
-- Kieran Broadfoot, CTO of Hosting, Barclays

- 300 year old bank
- Focused on delivering new services to banking customers
- Moving from proprietary middleware to open source
- Moved 3000 applications to their cloud in last 2yrs; 500 in production.
- Implemented CI/CD and Infrastructure-as-Code pipelines to allow Devs and Ops to work better together.

View the [Barclays keynote](#).

BARCLAYS BANK - Digital Transformation

“OpenShift is the primary platform to deploy Barclays apps across any clouds. We couldn’t be happier with our OpenShift progress to date.”



Enable DevOps at scale
and deliver on our agile agenda

BMW GROUP - Evolving the Connected Car



Digital customer experience, connected and automated driving and digitalized business processes lead to a transformation of the BMW Group towards software and services (Tech).



- Global manufacturer of luxury automobiles, motorcycles and engines. “The Ultimate Driving Machine”.
- Evolving in-vehicle communications and telematics for 15yrs.
- OpenShift platform enables BMW ConnectedDrive service.
- Enables Electric Cars, Service Calls, Real-Time Traffic, Driving Assistance, Anonymous Cars.
- Moving from Monolithic applications to Microservices, Containers and Kubernetes



Read the [press release](#) and view Red Hat Summit [presentation](#).

SCHIPHOL AIRPORT - Rethinking Traveler Experience



Red Hat OpenShift Container Platform, truly, has stolen my heart, because the platform is innovative, I can deploy quickly, and I am in control of the containers. - Michael Aalbers, Amsterdam Airport Schiphol

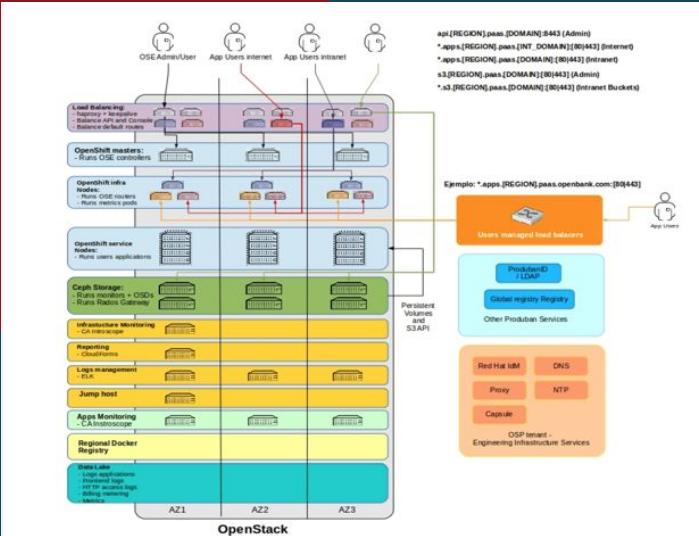
- International Airport, 3rd busiest in Europe, 64M passengers per year.
- Goal to become the world's best digital airport by 2018.
- Needed to accelerate application development time through cloud-agnostic platform.
- Deployed OpenShift across Private Cloud, AWS and Azure.
- Leverage JBoss FUSE and 3Scale for API Management, delivering API-based services to passengers and partners.

Read the [press release](#)



redhat.[®]

Evolving Development Process at Produban (Santander Bank)



Increased collaboration between Dev and Ops

Reduced deployment time & improved time to market

Automated deployment tasks, reduce failures

Provide a global service to reduce infrastructure and operation costs.

Enabled continuous software delivery & reduced resolution time of problems

Evolving Application Architecture at Volvo

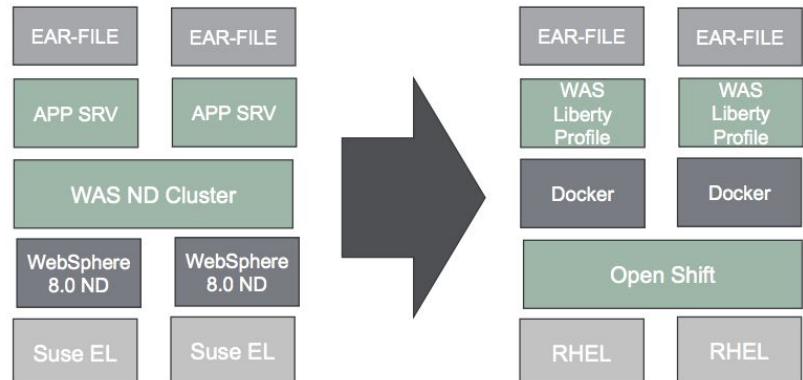
785 apps across 560 app servers

OpenShift provides build, distribution & runtime environment

Platform for DevOps and Microservices

Running OpenShift on Azure,
automatically provisioned with
Ansible

OUR NEW ENVIRONMENT

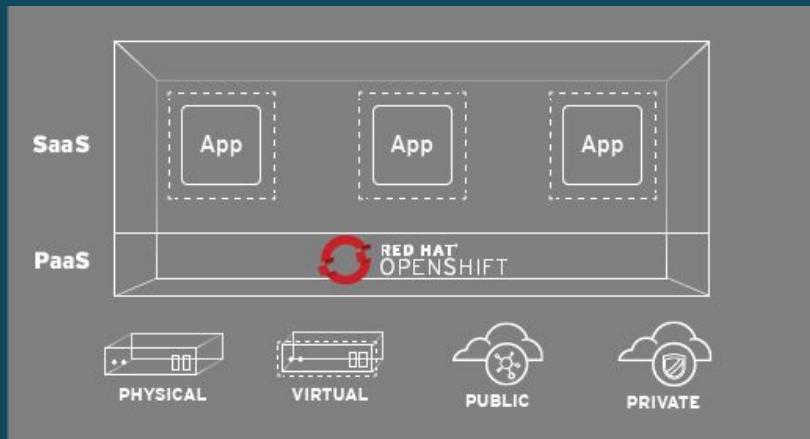


AMADEUS



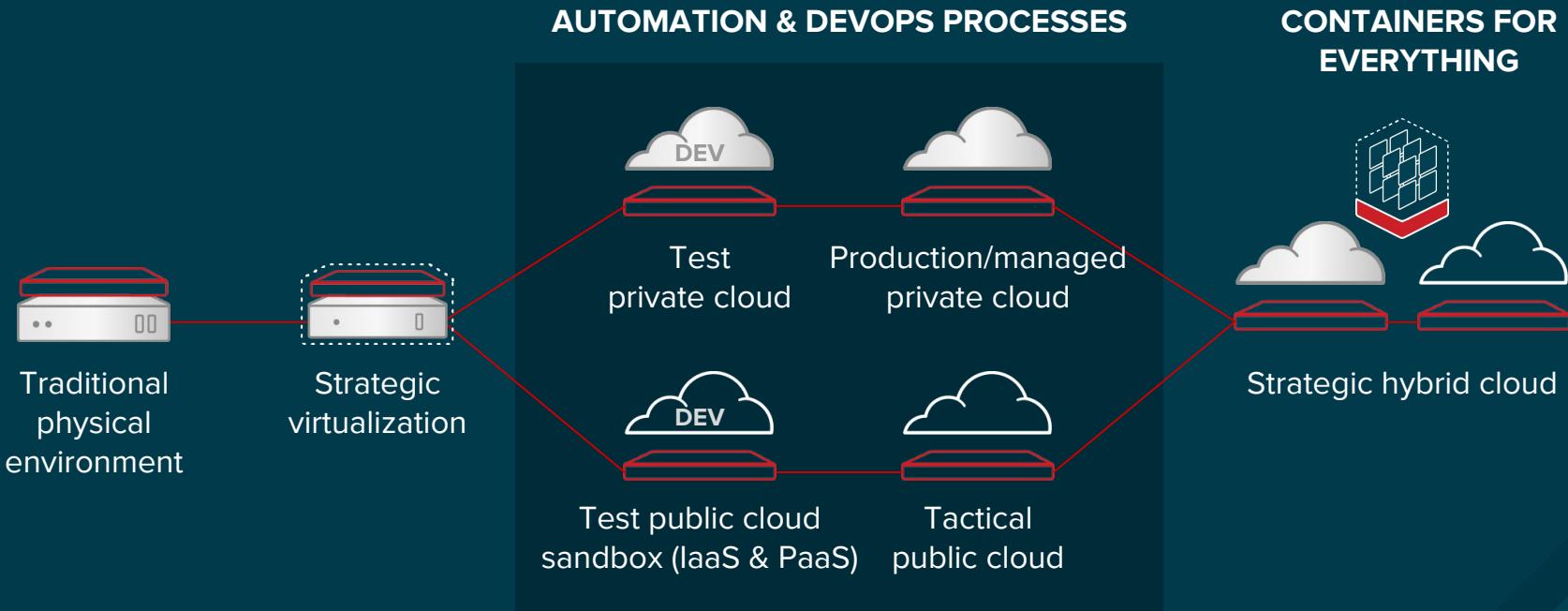
Platform Infrastructure

- Shift from virtualization to scale-out cloud infrastructure
- Rapid growth in public cloud usage for enterprises
- Hybrid cloud deployments span private & multiple public clouds



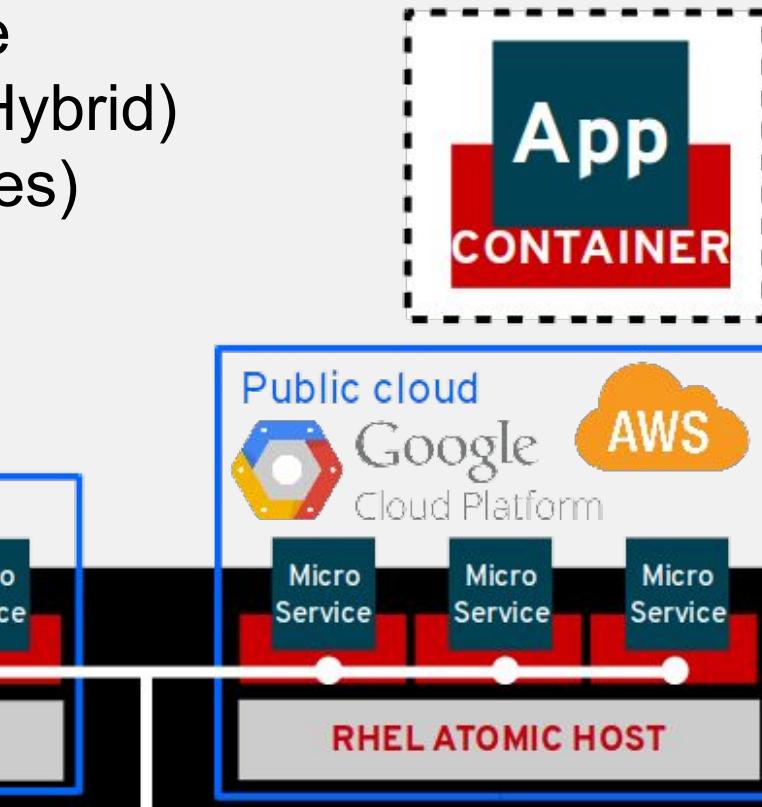
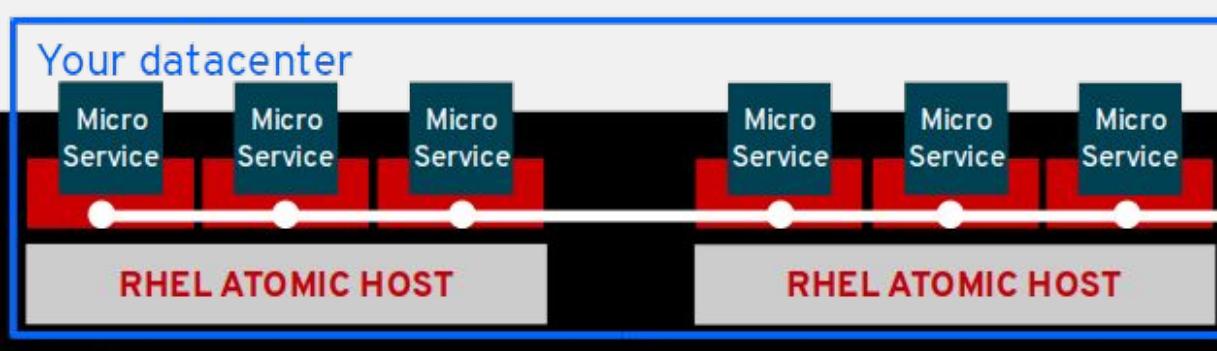
IT'S A DIFFERENT JOURNEY FOR EVERYONE

BUT HERE'S WHAT IT LOOKS LIKE FOR ONE FINANCIAL SERVICES CUSTOMER



Openshift summary

- Automates whole container lifecycle
- On Premise / In cloud / Both (aka. Hybrid)
- Containers orchestration (Kubernetes)
- Microservices O-o-the-box
- CI/CD automation, Dev Ops
- Scalability & HA O-o-the-box



KUBERNETES
Container Orchestration



redhat.[®]