RED HAT CONTAINERS ROADMAP
Portfolio Perspective

Ron Pacheco
Director, Product Management

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RED HAT'S VISION: OPEN HYBRID CLOUD

CONTAINERS

PHYSICAL VIRTUAL PRIVATE CLOUD PUBLIC CLOUD

RED HAT® SATELLITE
RED HAT® CLOUDFORMS
RED HAT® JBOSS® MIDDLEWARE

RED HAT® STORAGE
PANEL OF EXPERTS

- Subhendu Ghosh, Product Technologist, Red Hat Enterprise Linux
- Mike McGrath, Principal Architect, Containers Engineering
- Ken Johnson, Product Management, JBoss Middleware
- Nick Barcet, Product Management, OpenStack
- Xavier Lecauchois, Product Management, Management Software
- Ron Pacheco, Product & Technology Strategy, Platforms Business
CREATING DEFACTO STANDARDS

Red Hat works with the open source community to drive standards for containerization.

- **Isolation with Linux Containers**
- **Container format with Docker**
- **Orchestration with Kubernetes**
- **Container discovery via registry**
ECOSYSTEM ENABLEMENT

Simplifying Container Adoption

RED HAT CONNECT for technology partners

RED HAT CONTAINER DEVELOPMENT KIT (CDK)

RED HAT CONTAINER CERTIFICATION

CONTAINER REGISTRY

LEARN

BUILD

CERTIFY

DISTRIBUTE

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CREATING THE RUNTIME

- Isolation with Linux Containers
- Container format with Docker
- Orchestration with Kubernetes
- Container discovery via registry

RED HAT® ENTERPRISE LINUX®
DRIVING OPERATIONAL EFFICIENCY

ROLLBACK  ⟷  UPDATE

RED HAT®
ENTERPRISE LINUX®
ATOMIC HOST

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ENABLING OPERATIONS
Run and Orchestrate multi-container based applications at scale
ENABLING OPERATIONS

Run and Orchestrate multi-container based applications at scale
ENABLING DEVELOPMENT AND OPERATIONS

Develop and Run and Orchestrate multi-container based applications at scale

DEVOPS TOOL AND EXPERIENCE

LANGUAGE RUNTIMES, MIDDLEWARE, DATABASES, AND OTHER SERVICES

CONTAINER ORCHESTRATION AND MANAGEMENT

CONTAINER API

RHEL RHEL ATOMIC HOST

INFRASTRUCTURE
ENABLING DEVELOPMENT AND OPERATIONS

Self-Service → Standards Based
Multi-Language → Web Scale
Auto-Scaling → Enterprise Grade
Collaborative → Open Source

OPENSHIFT®
by Red Hat®
CONVERGENCE
Physical and Application Abstraction

Service
VM
KVM

Container
Container

Kubernetes

standard hardware
CONVERGENCE
Physical and Application Abstraction
CONVERGENCE
Physical and Application Abstraction

- Kubernetes
- Container
- Container
- Service
- VM
- VM
- KVM
- Ironic
- Compute
- Networking
- Storage
- Standard hardware
- Red Hat Enterprise Linux
- OpenStack Platform
- Red Hat ATOMIC Enterprise Platform
- Red Hat CEPH Storage

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CONVERGENCE
Physical and Application Abstraction

Service
VM
KVM
Ironic

compute networking storage

standard hardware

Kubernetes
Container
Container

Red Hat Enterprise Linux®
OpenStack® Platform

OpenShift® by Red Hat

Ironic

Container

Red Hat Atomic Enterprise Platform

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CONVERGENCE
Physical and Application Abstraction
CONVERGENCE
Physical and Application Abstraction
JBoss xPaaS SERVICES FOR OPENSSHIFT

Where Middleware meets cloud...

RED HAT® JBOSS®
MIDDLEWARE

AUTOMATE
Business rules & processes
- Red Hat JBoss BPM Suite
- Red Hat JBoss BRMS

INTEGRATE
Applications, Data & Devices
- Red Hat JBoss Fuse
- Red Hat JBoss A-MQ
- Red Hat JBoss Data Virtualization

ACCELERATE
Application development & performance
- Red Hat JBoss Enterprise Application Platform
- Red Hat JBoss Data Grid
- Red Hat Mobile Application Platform

MANAGEMENT TOOLS
Red Hat JBoss Operations Network

OPENSHIFT ENTERPRISE
by Red Hat®

- Business Process Services
- Decision Services
- Integration, Messaging, Data Services
- Mobile Services
- Application Services
- Caching Services

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MICROSERVICES + CONTAINERS

CONTAINER

µSVC

CONTAINER

xPaaS
SVC

CONTAINER

xPaaS
µSVC

RED HAT®
ENTERPRISE LINUX®
ATOMIC HOST

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xPaaS
Modular microservices architecture based on JBoss Middleware and OpenShift
RED HAT SATELLITE

Container Registries

Satellite 6 serves as an on-premise registry for Linux Containers

Containers managed through lifecycle environments versioned with Content Views

Environments are mirrored to Capsules

Docker Pull to host

Red Hat Registry

Docker Hub Registry

Private On-Prem Registry

On-Premise Registry

Library

Dev

QE

Production

CCV-a

Version 10

CV-a

Version 4

CV-b

Version 2

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## Container Management

### Cloud Forms Management Engine

<table>
<thead>
<tr>
<th>Component</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers</td>
<td>3</td>
</tr>
<tr>
<td>Nodes</td>
<td>52</td>
</tr>
<tr>
<td>Containers</td>
<td>300</td>
</tr>
<tr>
<td>Registries</td>
<td>4</td>
</tr>
<tr>
<td>Projects</td>
<td>510</td>
</tr>
<tr>
<td>Pods</td>
<td>1200</td>
</tr>
<tr>
<td>Services</td>
<td>2500</td>
</tr>
<tr>
<td>Images</td>
<td>2500</td>
</tr>
<tr>
<td>Routes</td>
<td>300</td>
</tr>
</tbody>
</table>

### Utilization

<table>
<thead>
<tr>
<th>Resource</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Available of 1000 MHz</td>
</tr>
<tr>
<td>Memory</td>
<td>Available of 256 GB</td>
</tr>
<tr>
<td>Storage</td>
<td>Available of 0.5 TB</td>
</tr>
<tr>
<td>Network</td>
<td>Available of 200 Gbps</td>
</tr>
</tbody>
</table>

### Pods Creation vs. Deletion Trends

Last 30 Days

![Pods Creation vs. Deletion Trends Graph]
CONTAINER-BASED APPLICATION DELIVERY SOLUTIONS

A continuum of solutions to develop, run, and manage container-based applications

RED HAT® ATOMIC ENTERPRISE PLATFORM

OPENShift ENTERPRISE
by Red Hat®

RED HAT® CLOUD SUITE
for Applications

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CONTAINER-BASED APPLICATION DELIVERY SOLUTIONS
A continuum of solutions to develop, run, and manage container-based applications

MIDDLEWARE AND MOBILITY SERVICES

RED HAT CLOUD SUITE for Applications
- Unified management from bare metal to containers
- Scalable infrastructure
- Hybrid deployment management

Seamlessly manage from infrastructure to applications
Build scalable infrastructure based on OpenStack
Develop, build, and manage container-based applications
Run and orchestrate multi-container based applications at scale

OPENSHIFT
by Red Hat
- Application lifecycle management
- Continuous integration
- Developer experience
- Source-to-image

Develop, build, and manage container-based applications
Run and orchestrate multi-container based applications at scale

RED HAT ATOMIC ENTERPRISE PLATFORM
- Managed cluster of container-optimized hosts
- Orchestration and service aggregation

Run and orchestrate multi-container based applications at scale

RED HAT ENTERPRISE LINUX, INCLUDING ATOMIC HOST

CERTIFIED HARDWARE ECOSYSTEM
LEARN. NETWORK.
EXPERIENCE OPEN SOURCE.