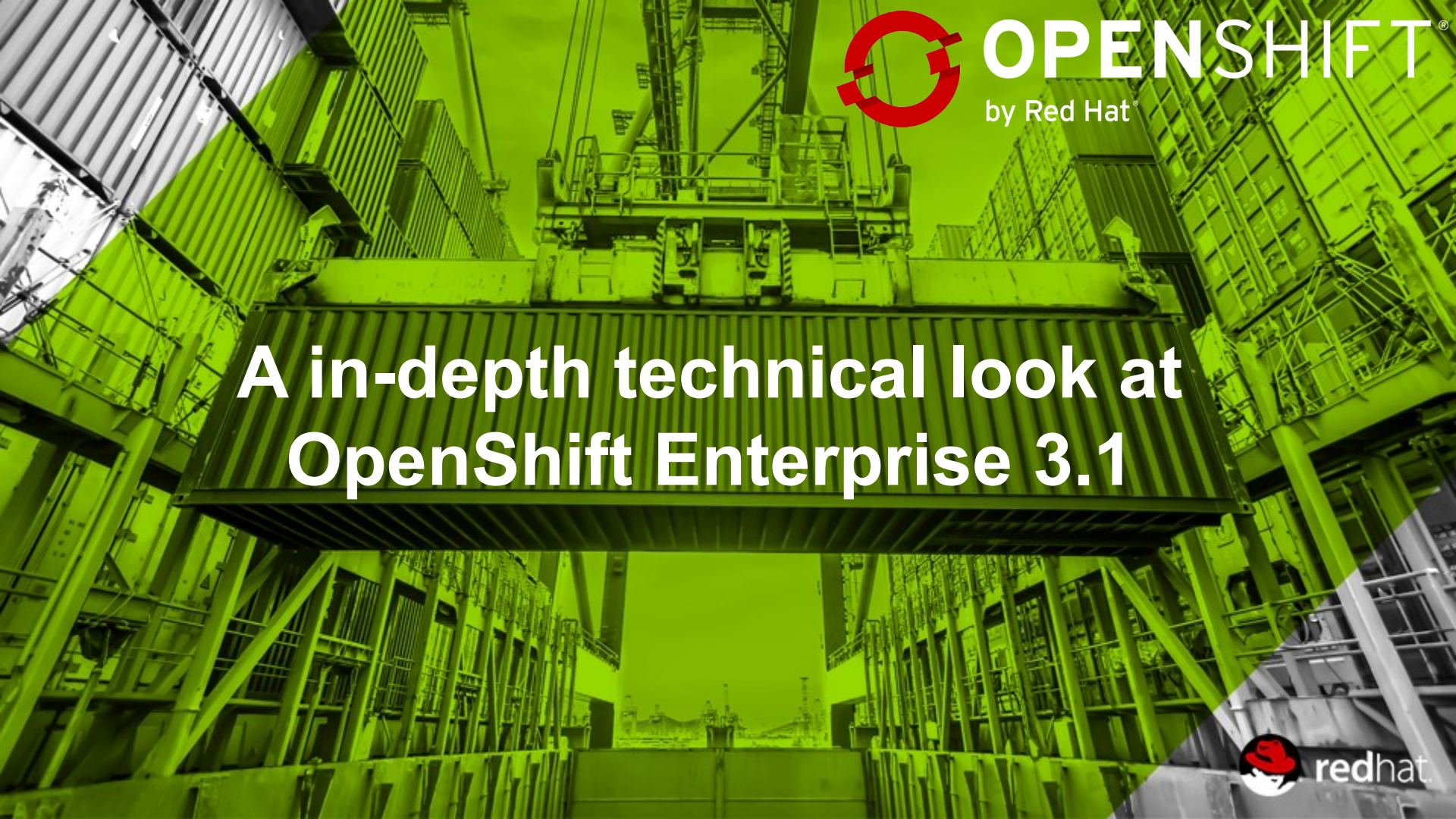
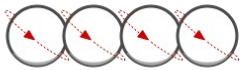

OPENSHIFT
by Red Hat
A in-depth technical look at
OpenShift Enterprise 3.1
redhat.

Key Technology Trends

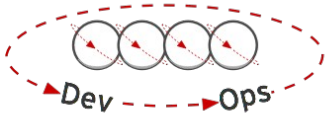
Development Process

Waterfall



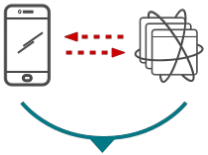
Agile

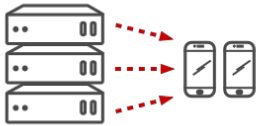
DevOps



Application Architecture

Monolithic



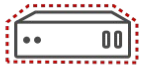


N-Tier

Microservices

Deployment & Packaging

Physical Servers

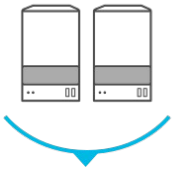


Virtual Servers

Containers

Application Infrastructure

Datacenter



Hosted

Cloud

Red Hat Container Solutions

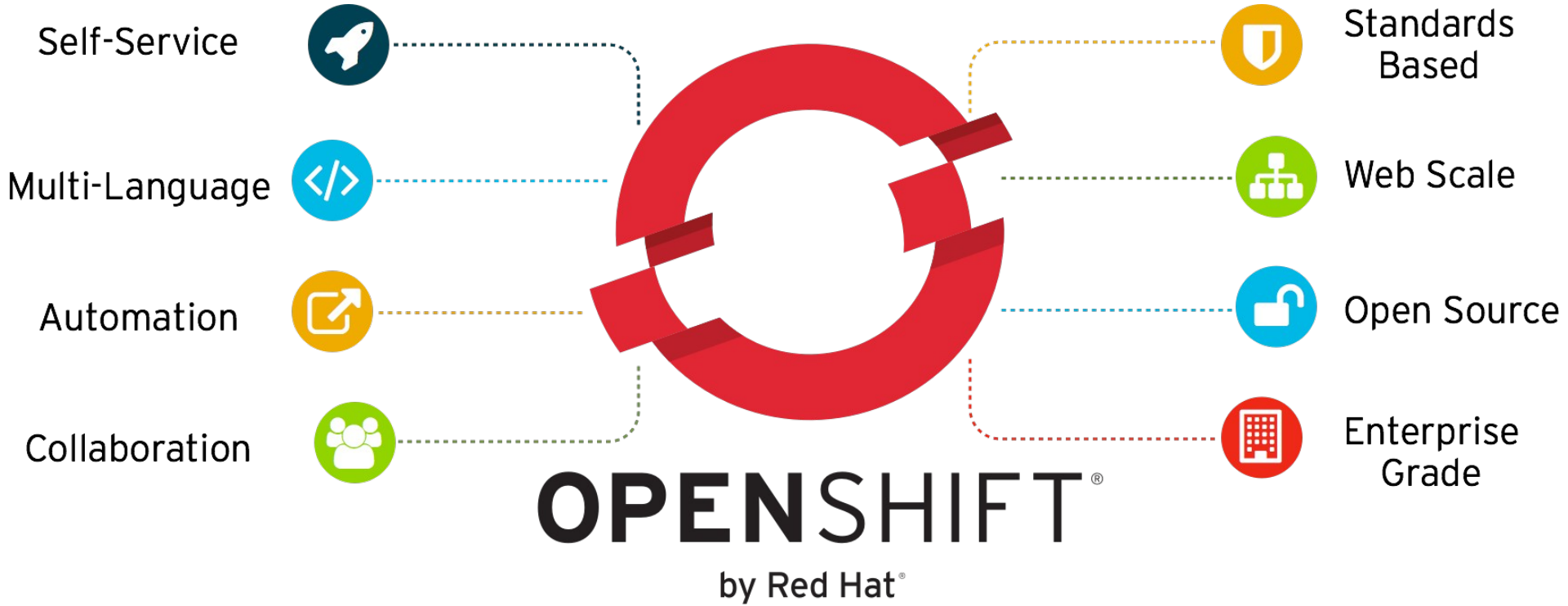
MODERNIZE APP DELIVERY
STANDARDS AND AUTOMATION

INCREASE AGILITY
TRADITIONAL & CLOUD-NATIVE APPS

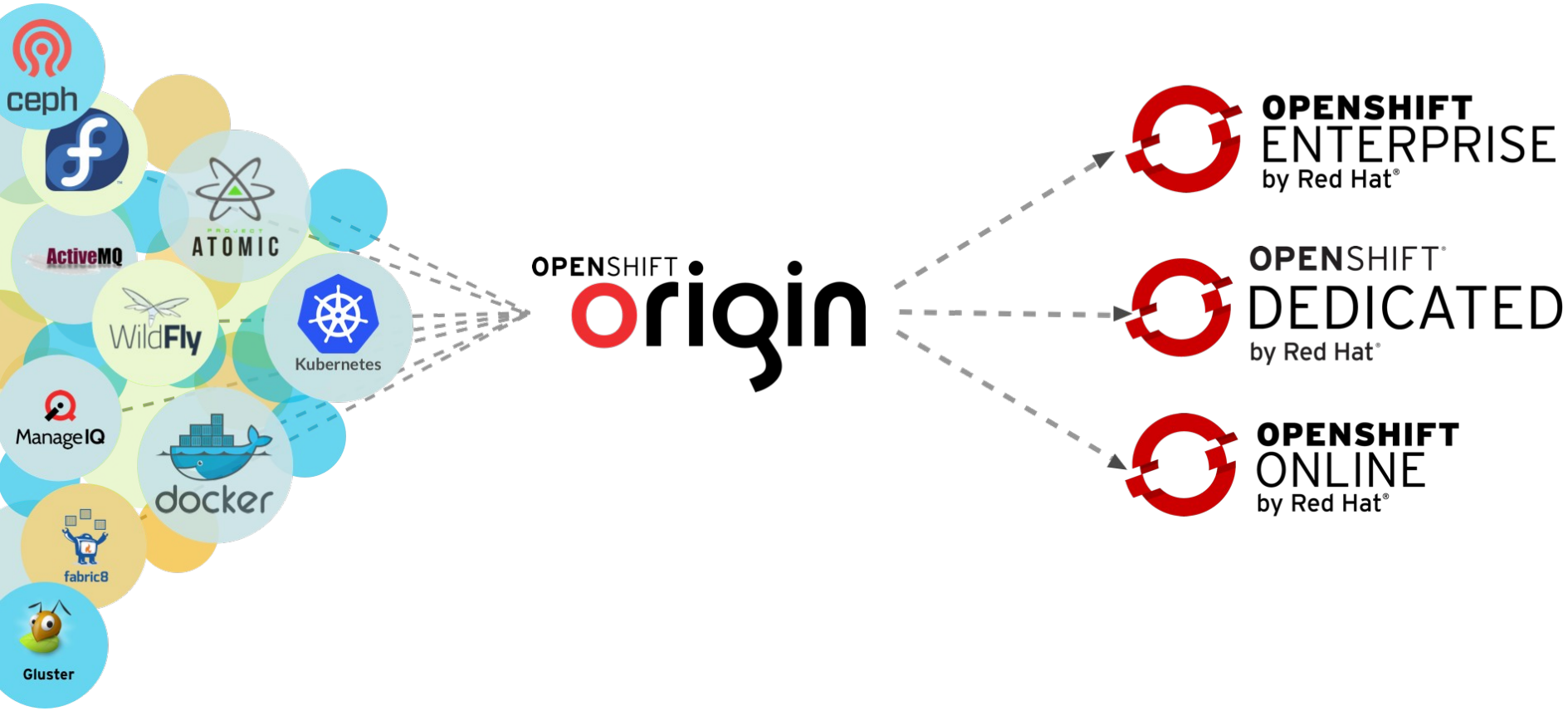
GAIN CONSISTENCY
DEV, TEST, AND PRODUCTION

DEPLOY ANYWHERE
ACROSS OPEN HYBRID CLOUD

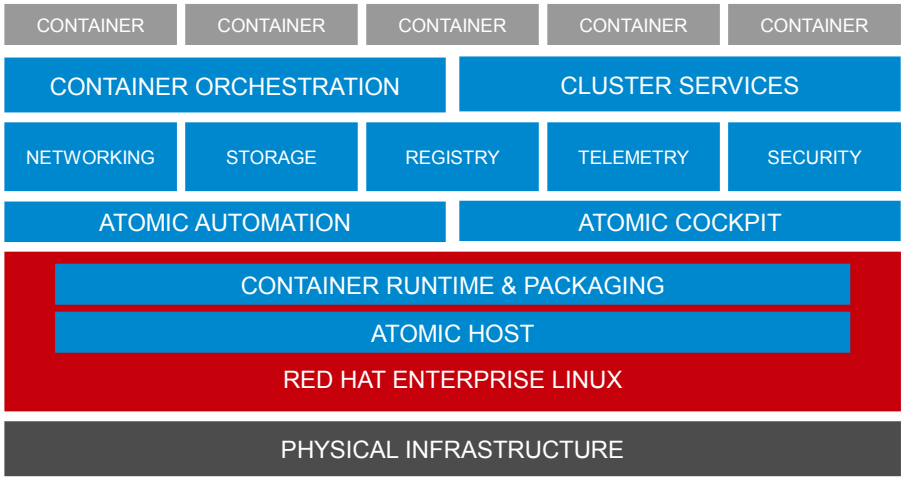
OpenShift Enables Both Dev and Ops



Community Powered Innovation

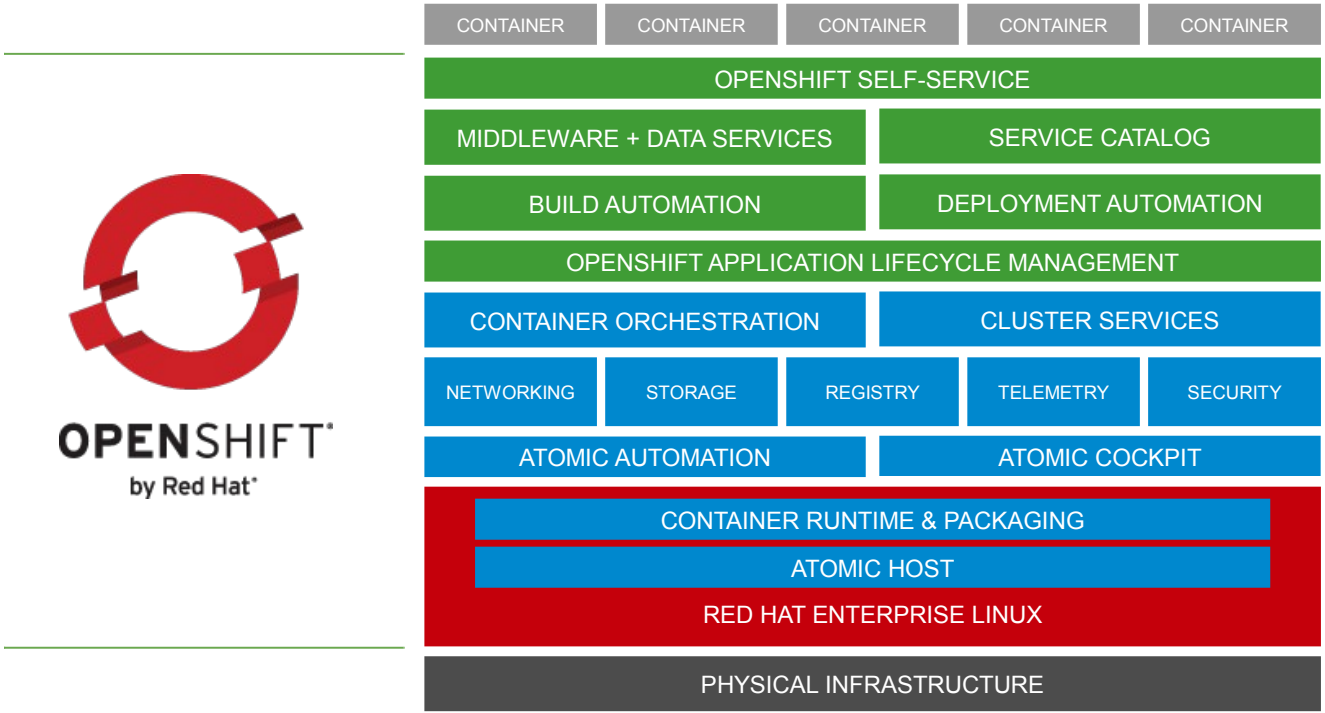


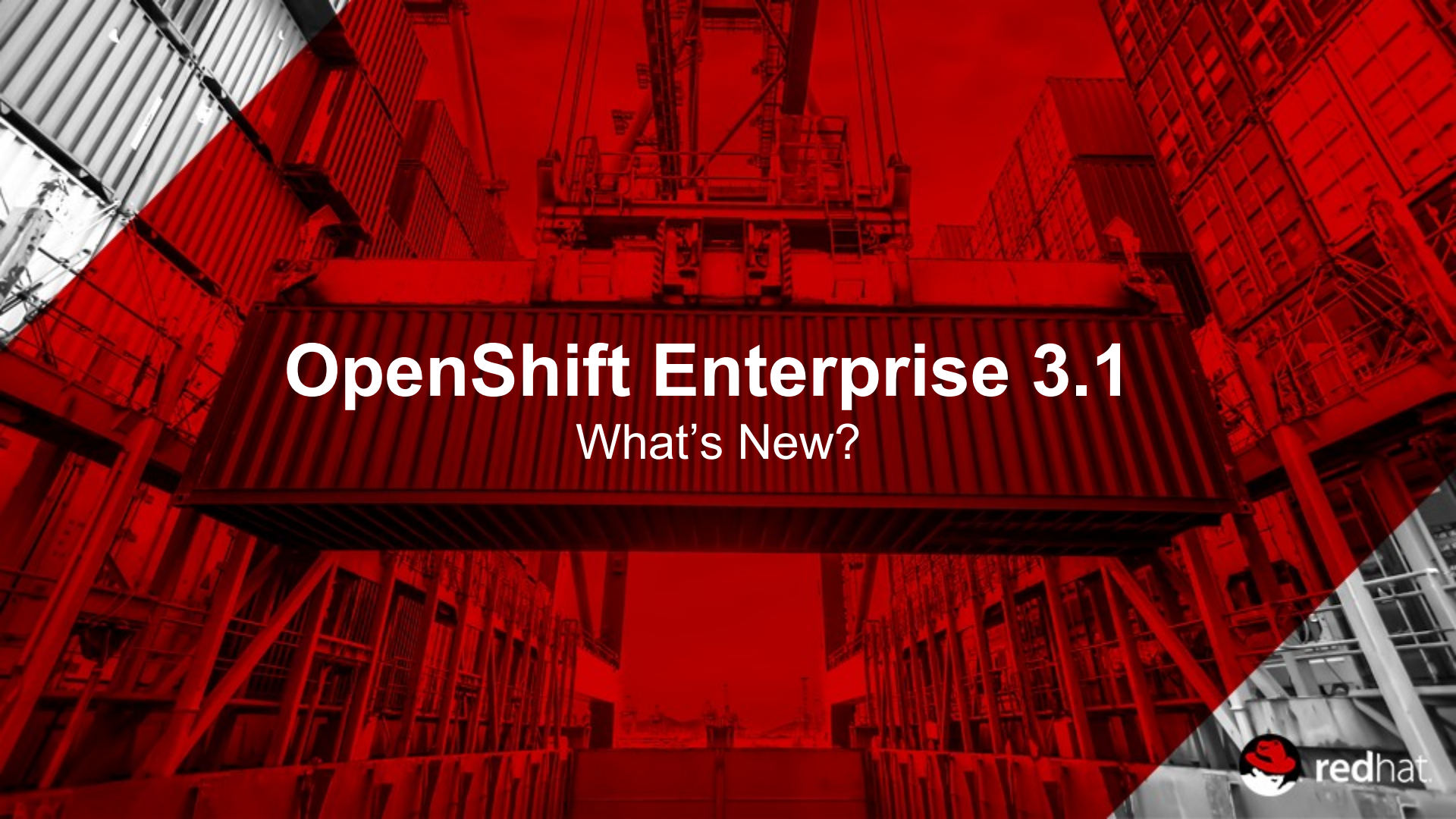
Built on an Enterprise Container Infrastructure



RED HAT ATOMIC

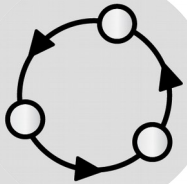
Providing a Comprehensive Container Application Platform




OpenShift Enterprise 3.1
What's New?
redhat.

Red Hat OpenShift Enterprise 3.1

ONE PLATFORM FOR TRADITIONAL & CONTAINER-BASED APPLICATIONS

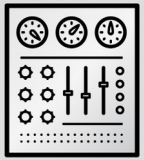


- Enterprise-grade container infrastructure (Atomic Enterprise Platform)
- Run stateful and stateless applications

ACCELERATING APPLICATION DELIVERY AND MODERNIZATION

- Streamlined app creation flows
- Usability and logging improvements
- Access to new Middleware Services

BUILT-IN OPERATIONAL MANAGEMENT AND AUTOMATION



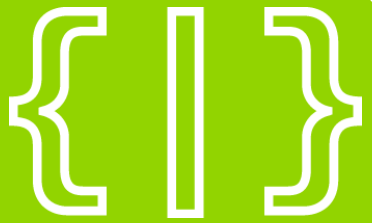
- Comprehensive real-time visibility
- Container event automation with model-driven workflows

BACKED BY A GROWING PARTNER AND COMMUNITY ECOSYSTEM

- New Storage plugins
- Pluggable Networking
- Development Tools

Delivering a world-class Developer Experience

New & Improved!

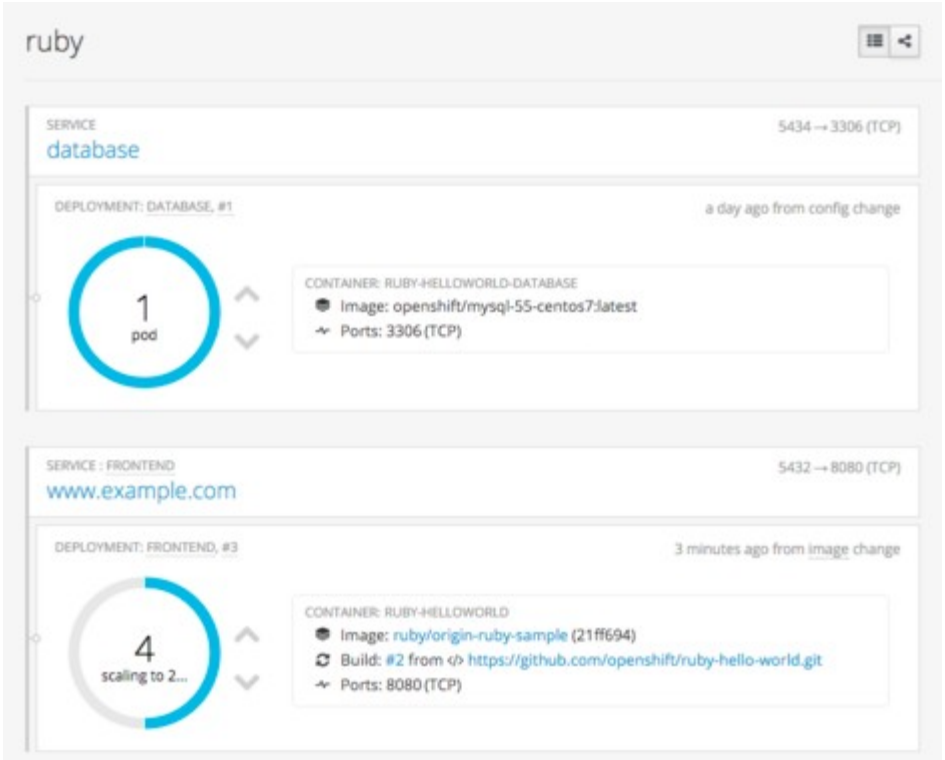


Developer Tooling

Developers need increasingly fast, broad, and flexible access to their applications and services.

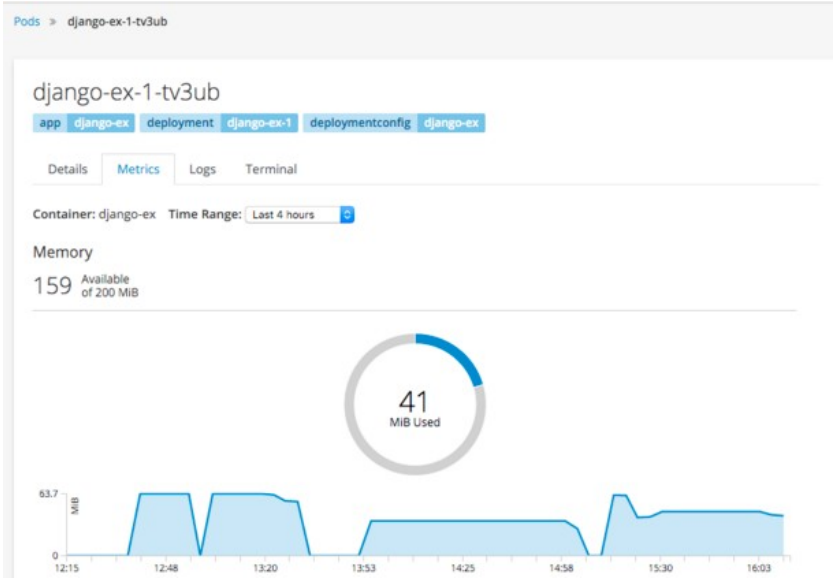
- Immediate builds triggered after app creation
- Build and deploy performance improvements
- Security improvements for source to image builds
- Red Hat supplied Jenkins image for OpenShift
- Additional authentication methods (Private Key)
- Improved Eclipse / JBoss Developer Tools
- Hot Deploy functionality
- Offline / Local (CDK) : Vagrant, Docker

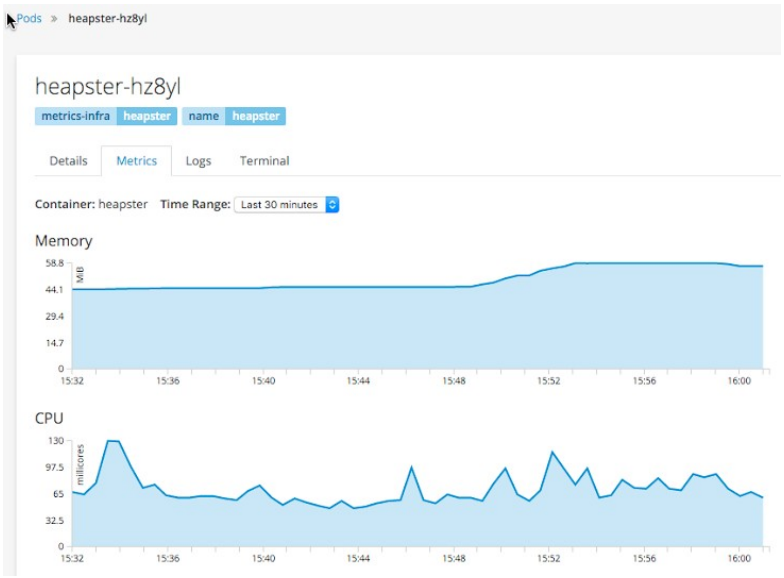
Scale Application Instances from OpenShift Web Console



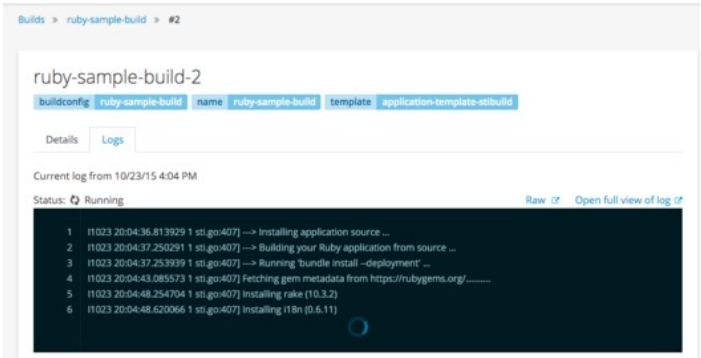
Get Access to Application Metrics

- Historical CPU and Memory usage provided by Heapster, Hawkular, Cassandra



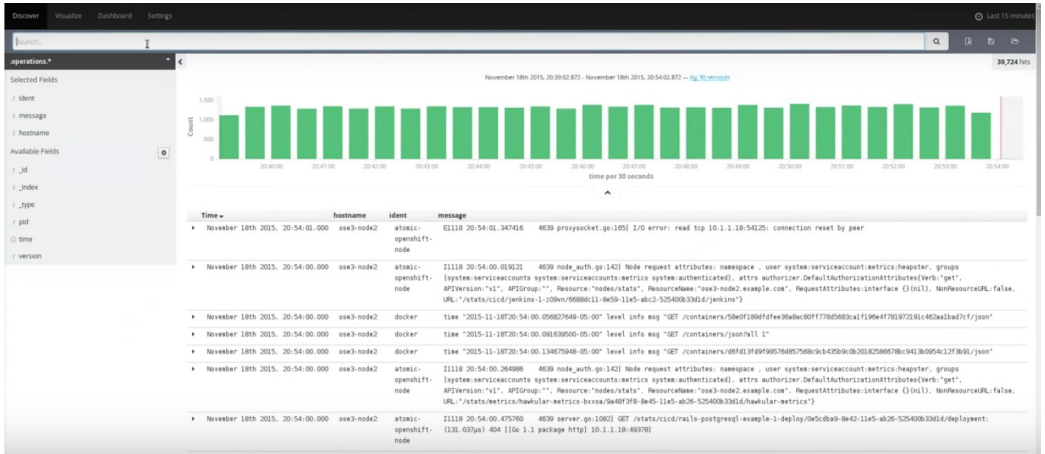


Integrated Logging for Developers and Admins

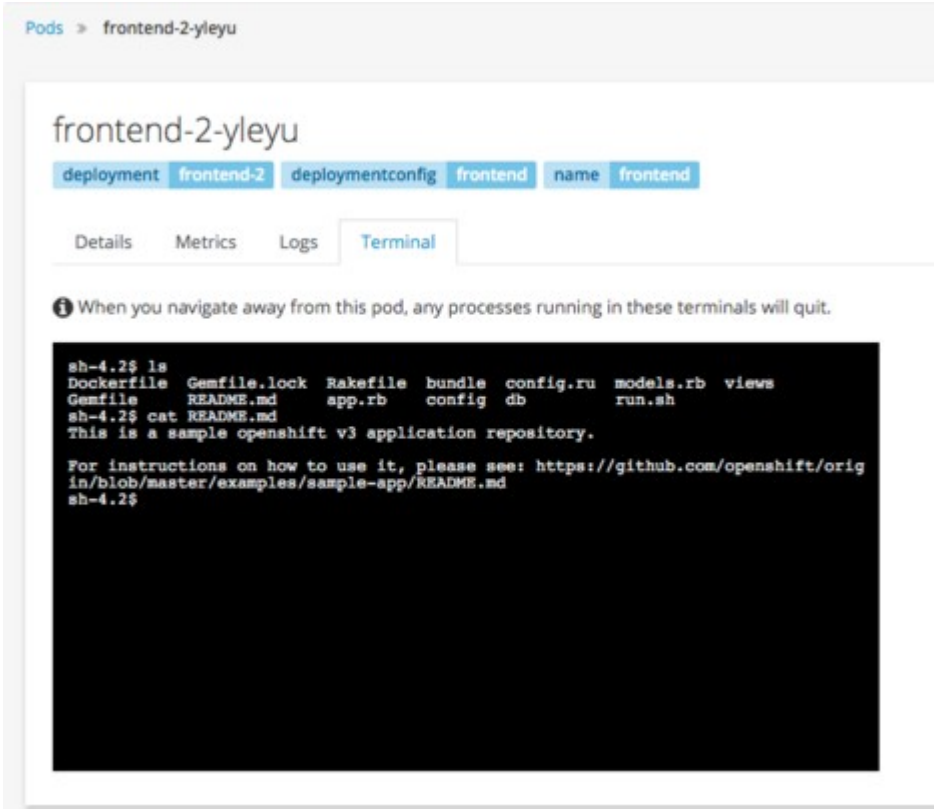


Access application & build logs in OpenShift Web console

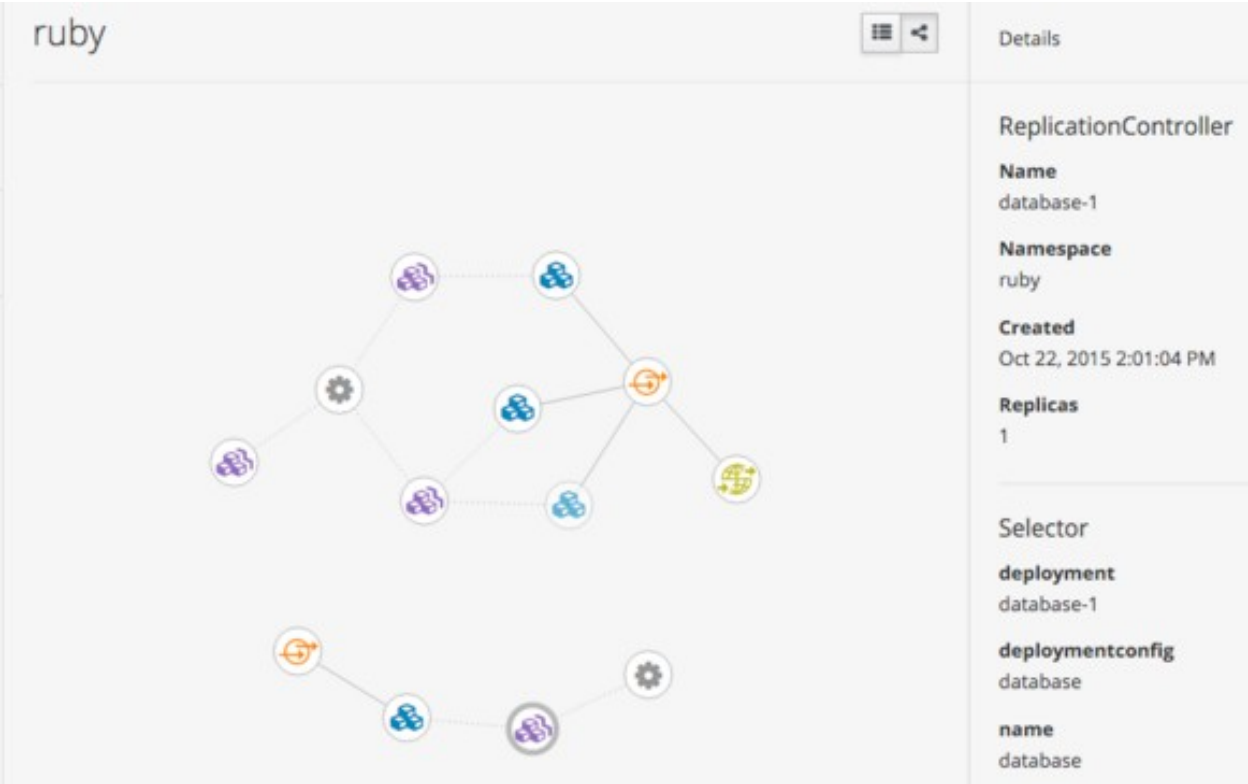
Aggregate platform and application log access via Kibana + Elasticsearch



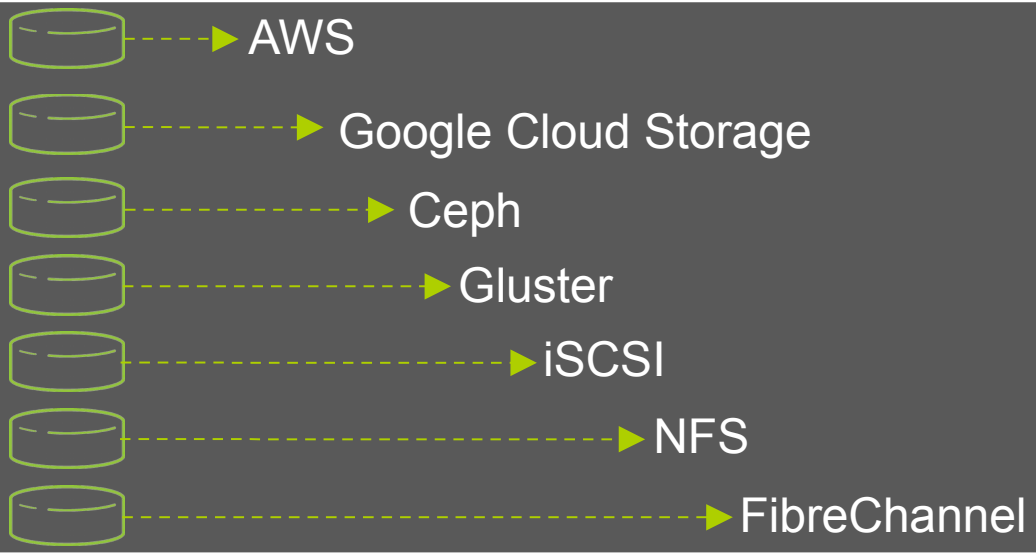
Integrated browser terminal shell for containers/pods



View application topology



New Storage Capabilities for stateful applications



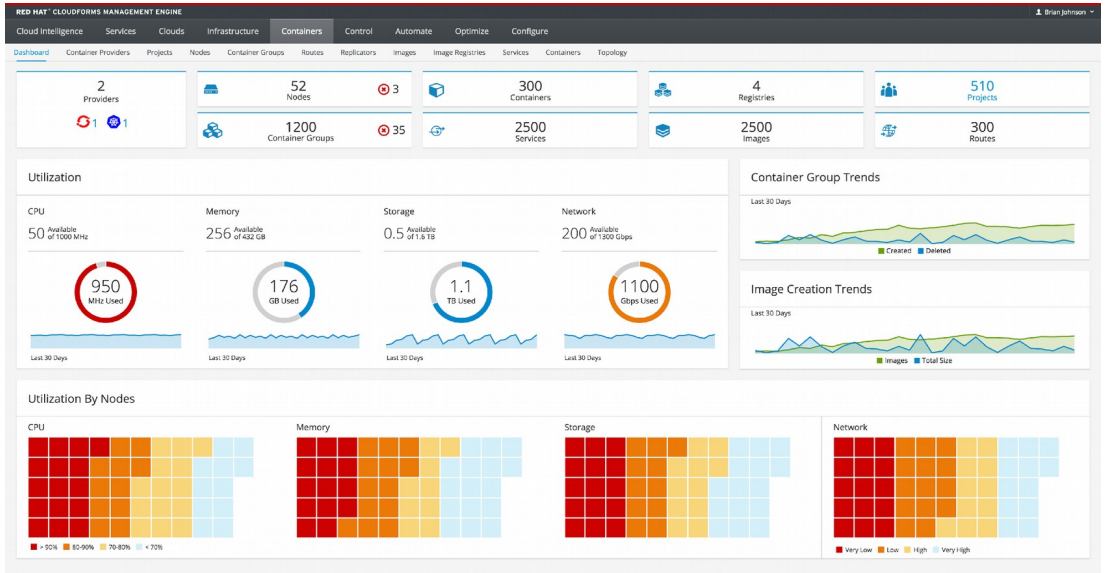
New!

Storage Plugins

Attach persistent storage to your containers from a wide range of storage solutions.

Infrastructure Management with CloudForms & OpenShift

- Cloud Forms functionality now included with OpenShift Enterprise to improve control over apps and infrastructure
- Monitor and manage resource consumption of containers running in OpenShift Enterprise
- Docker and Kubernetes aware (containers, pods, services...)



CPU Based Auto-Scaling (Tech-Preview)

- Allows pods to scale horizontally for a given service
- Automated based on current CPU vs. target CPU specified by user
- Auto-scaling based on additional user-specified metrics in on roadmap

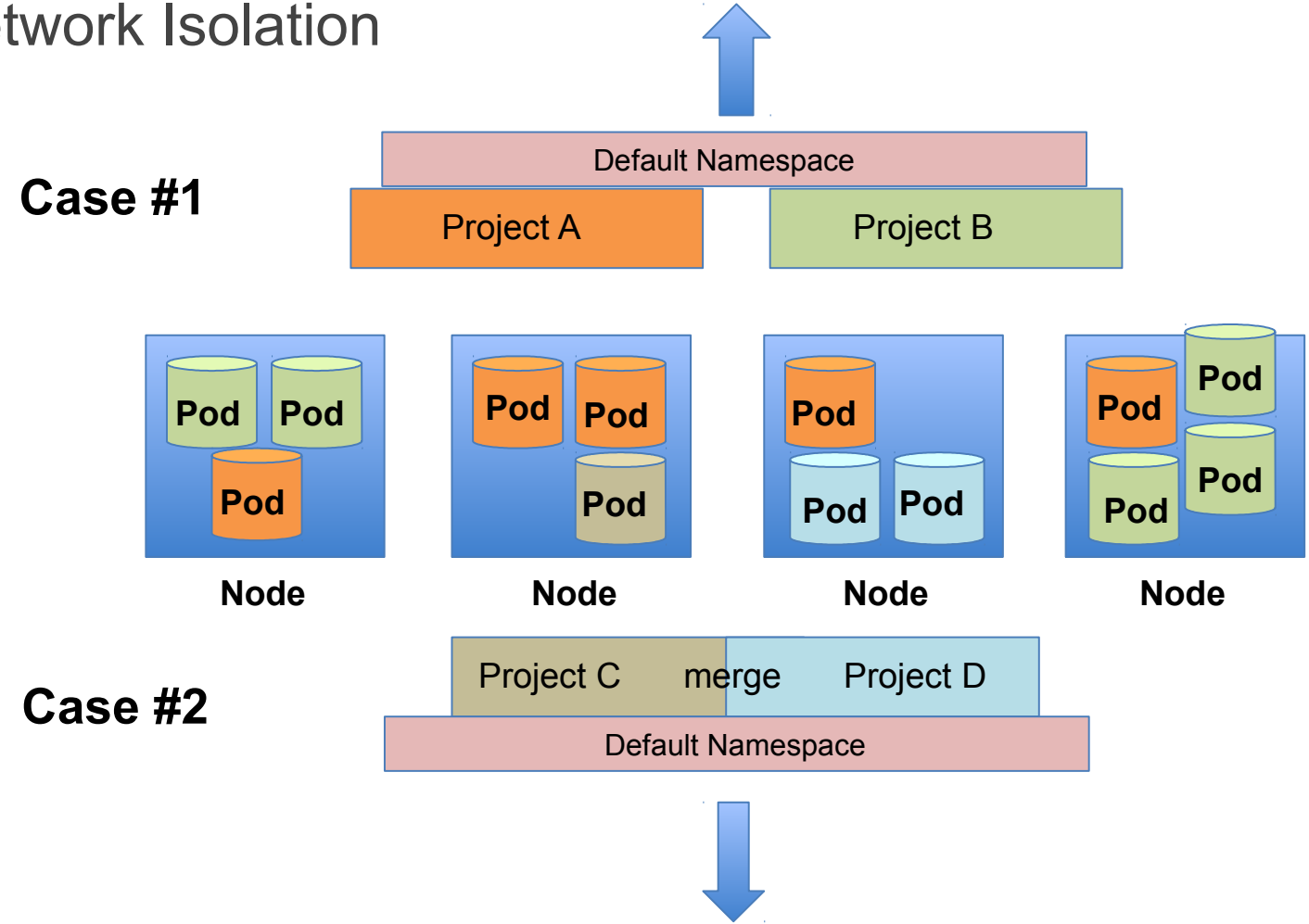
Resource Over Commitment

- Containers can now work in a resource range
- Allows you to start more containers, beyond max resources
- CPU and memory based overcommit supported

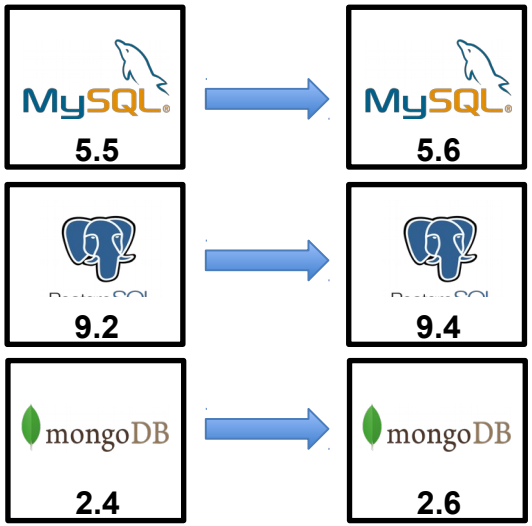
Resource limits

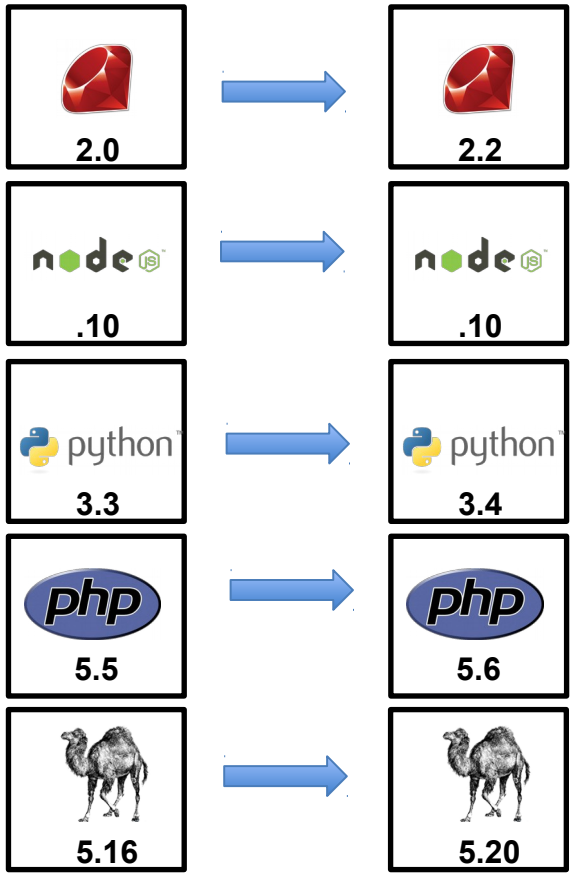
Resource type	Min	Max	Default Request	Default Limit	Max Limit/Request Ratio
Pod cpu	10 millicores	200 millicores	—	—	—
Pod memory	6 MiB	1 GiB	—	—	—
Container cpu	10 millicores	200 millicores	50 millicores	50 millicores	10
Container memory	4 MiB	1 GiB	100 MiB	200 MiB	—

Network Isolation



SCL 2.0 Database and Runtime Updates





Older versions remain supported until Dec 2016

New versions are supported until April 2018

JBOSS Middleware Services for OpenShift

Application Container Services

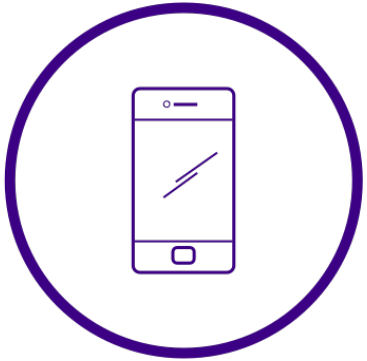
- JBoss Enterprise Application Platform
- JBoss Web Server / Tomcat
- JBoss Developer Studio

Business Process Services

- Business Process Management *
- Business Rules Management System **(NEW)**

Integration Services

- Fuse **(NEW)**
- Data Grid **(NEW)**
- A-MQ
- Data Virtualization *

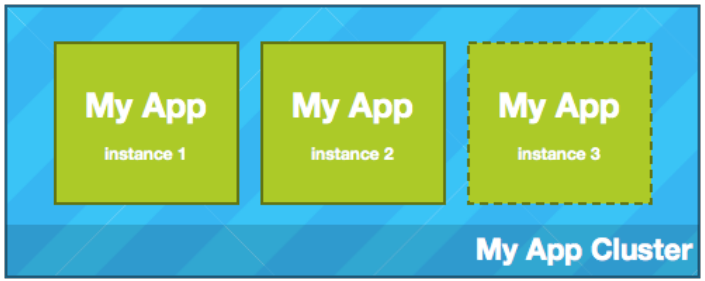


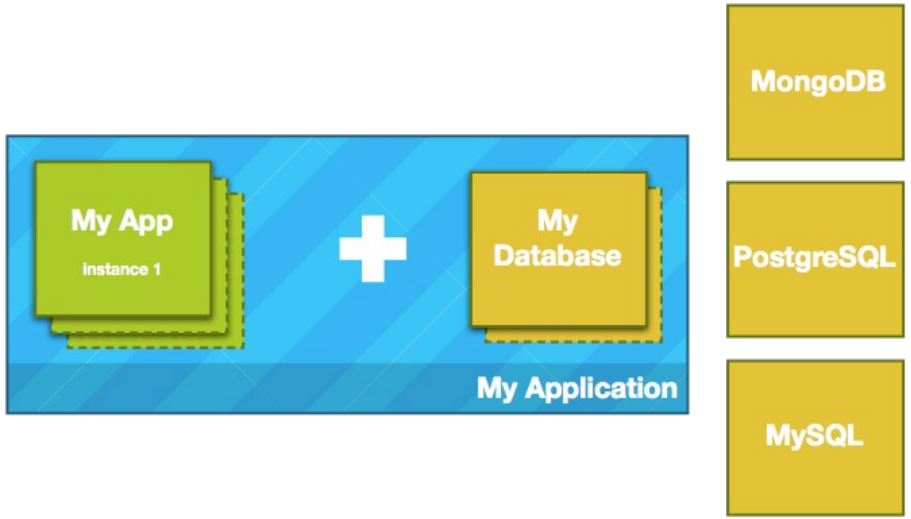
Mobile Services

- Red Hat Mobile / FeedHenry *

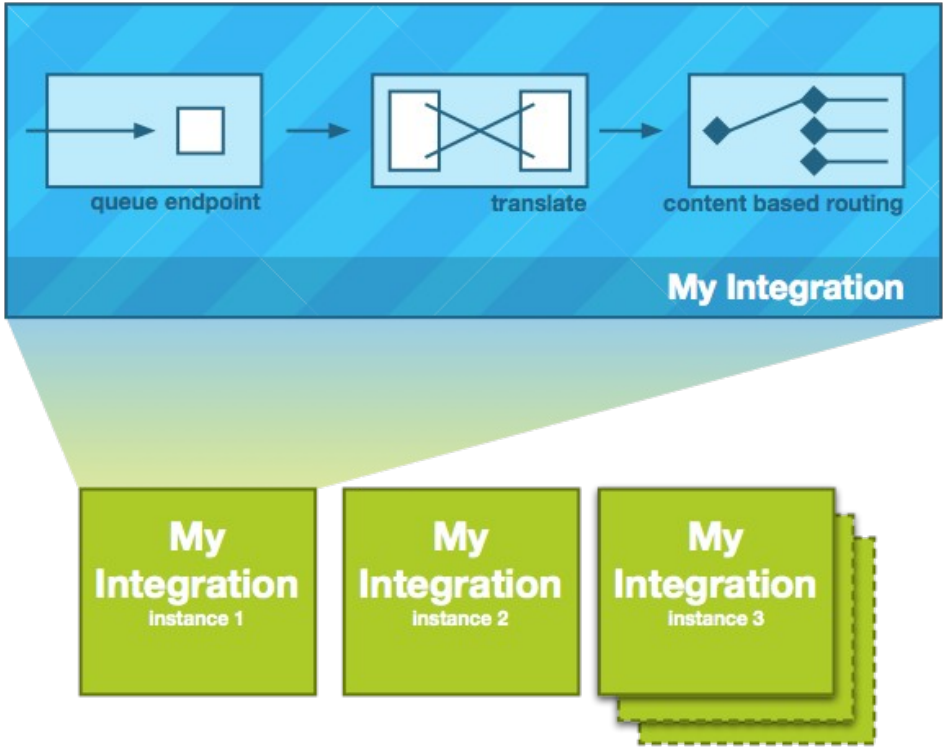
* Available soon (2016)

Clustering for Java Applications Made Easy

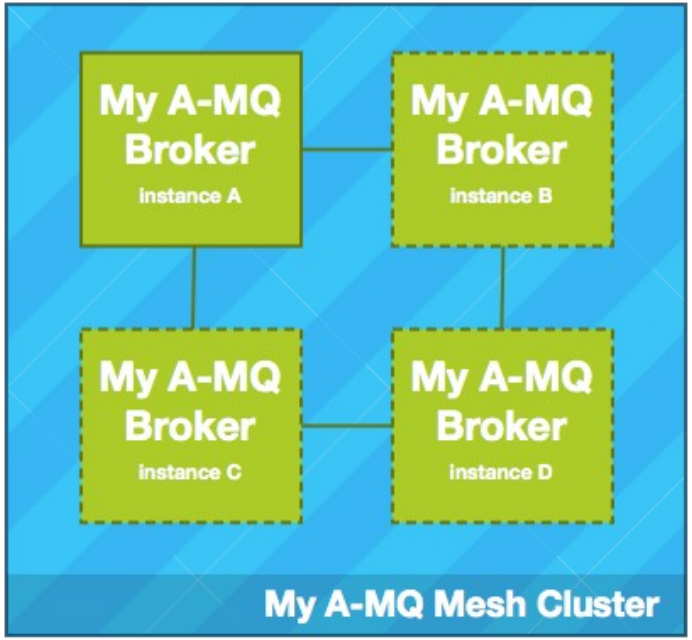




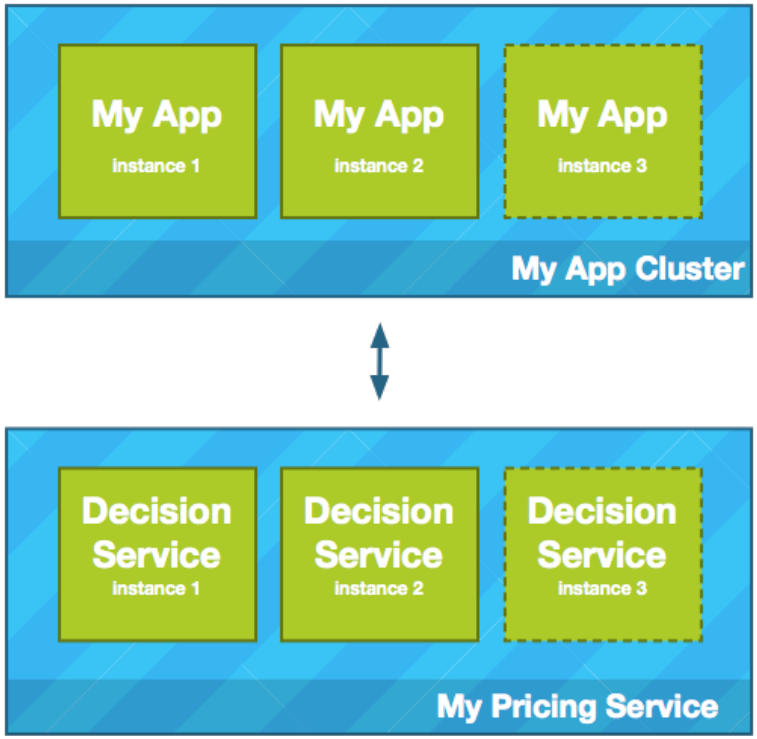
Integration routes deployed as containers



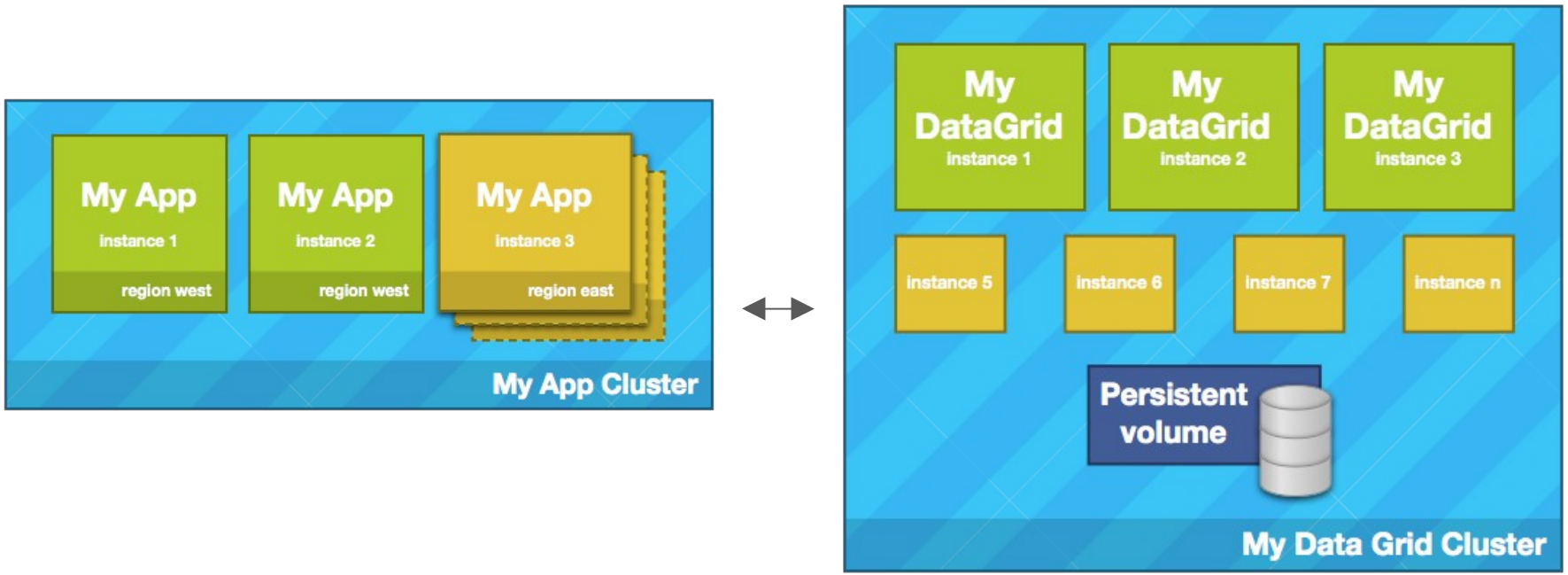
Automatic Mesh for A-MQ Brokers



Decision Services Powered by JBoss BRMS



Cache Services Powered by JBoss Data Grid



OpenShift and Microsoft Azure + .Net

- Red Hat and Microsoft cloud partnership announced in Nov 2015
- Red Hat solutions are now fully certified and supported on Microsoft Azure, including RHEL, JBoss and OpenShift
- RHEL will be the primary development and reference operating system for .NET Core on Linux
- OpenShift will be providing a .NET runtime container image distributed and supported by Red Hat and Microsoft
  - Build, deploy and run .NET applications on OpenShift
  - Based on .NET Core 5
  - Coming soon!

https://blog.openshift.com/open-source-power-microsoft-dotnet-openshift

OpenShift Product Roadmap Plan

3.0 - June 2015

- Docker container runtime & image packaging format
- Kubernetes orchestration & mgt.
- Source-to-Image & Docker builds
- JBoss EAP 6.4, JWS 3.0, A-MQ 6.2
- SCL images (Node, Python, PHP, Ruby...)
- Shared storage volumes for stateful apps
- Projects & team collaboration
- OAuth & enterprise auth integration (LDAP)
- Enhanced Web, CLI and IDE interfaces
- Manual scaling

3.0.x - Q3CY2015

- F5 & External Routing Examples
- Reference architectures
- Bug fixes

3.1 - Q4CY15

- CPU autoscaling *
- Integration Service / Fuse 6.x
- Decision Service / BRMS
- Cache Service / JDG
- Eclipse IDE completion
- Web/CLI UX enhancements
- SCL 2 image updates
- CloudForms 4.0 OSE Provider
- CPU/Memory Metrics Aggregation
- Additional storage plugins
- Networking enhancements
- ELK Log Aggregation
- CPU/Memory Overcommit
- HA Ref Arch/Enhancements
- Job Controller
- LDAP teams integration
- Jenkins Image / CI integration

3.2 - 1HCY16 (TBD)

- Mobile Service/Red Hat Mobile
- Autoscaling Enhancements
- CI/CD Pipelines
- Build Automation / Binary Deployment & ALM Integration
- Service Catalog
- Dev UX enhancements
- Idling
- Non-SNI routing
- OpenStack Neutron
- CloudForms Active Management
- Enterprise Registry
- Storage Enhancement
- Routing Enhancements


OPENSHIFT
by Red Hat
Questions?
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