Red Hat Storage

Red Hat OpenShift Container Storage

Persistent data services for OpenShift - Open Hybrid Cloud

Red Hat

Presentation Outline

OCS - What & Why

OCS 4 - Direction, Plans, Timelines

OCS 3 to OCS 4 transition

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Red Hat OpenShift Container Storage

What & Why

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RED HAT®
OPENSHIFT
Container Storage

What is it?

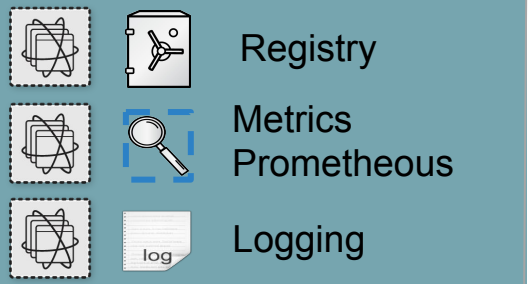
Add-On for OpenShift for running stateful apps

Highly scalable, production-grade persistent storage

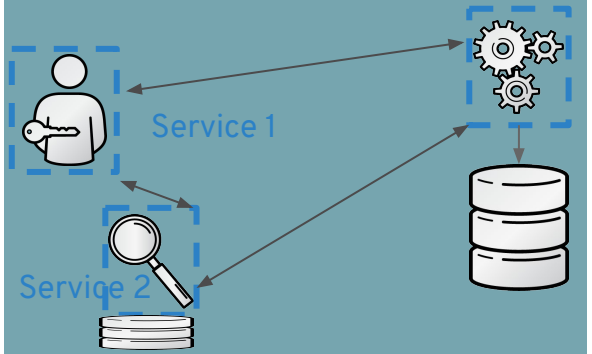
- For **stateful applications** running in Red Hat® OpenShift
- Optimized for Red Hat **OpenShift Infrastructure services**
- Developed, released and deployed in synch with Red Hat OpenShift
- Supported via a single contract with Red Hat OpenShift
- Complete persistent storage fabric across hybrid cloud for OCP

Why do you need persistent Storage?

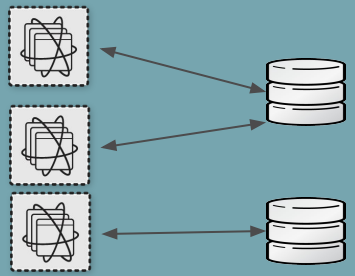
OCP Infrastructure



OCP Application



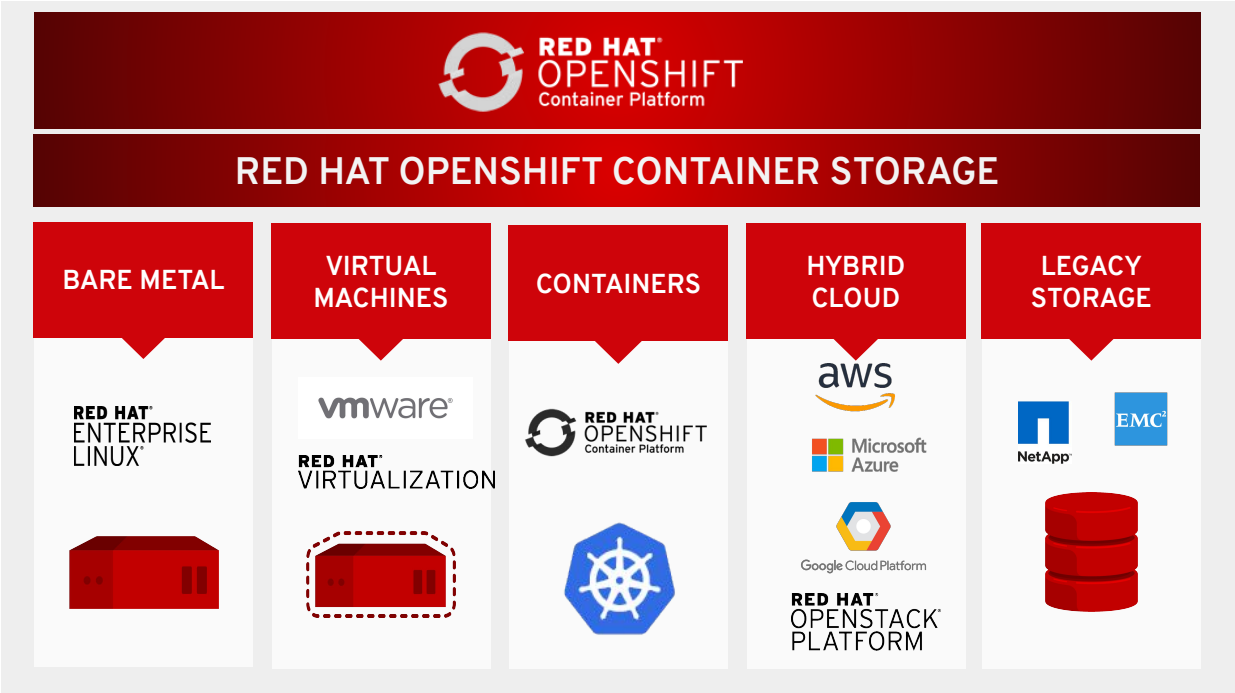
Local/Ephemeral Storage



OpenShift Container Storage Focus
RWX/RWO backed by File, Block, S3

EXPLOIT THE FULL POWER OF OPENSHIFT

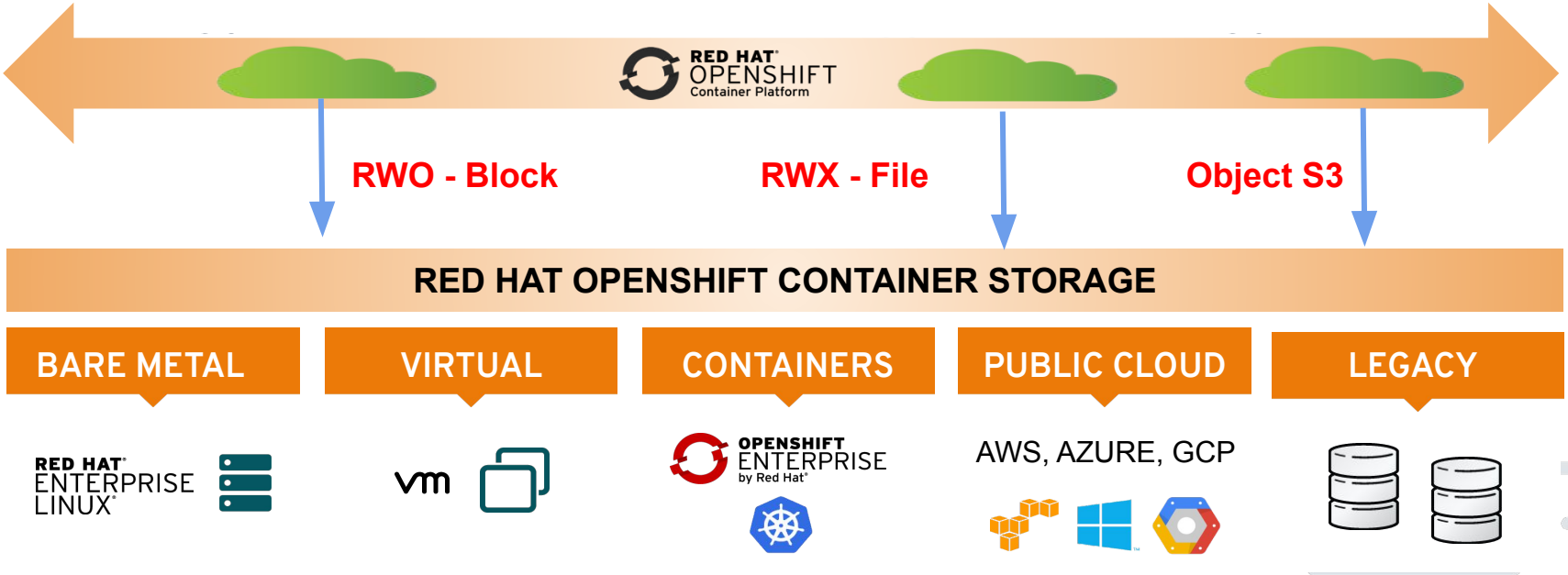
consistent storage consumption, management, and operations



ANY CLOUD. ANY APP. NO LOCK IN

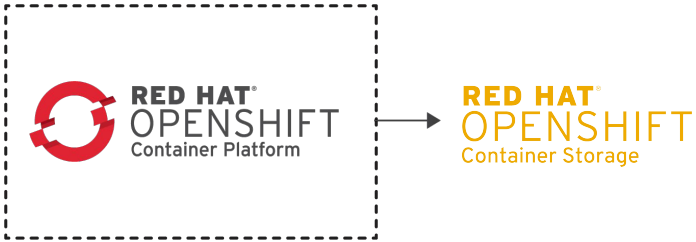
Future Proof against cloud or infrastructure lock-in

Complete Storage for Container Platform



Provides Storage for All Apps and infrastructure Services
in their native interfaces

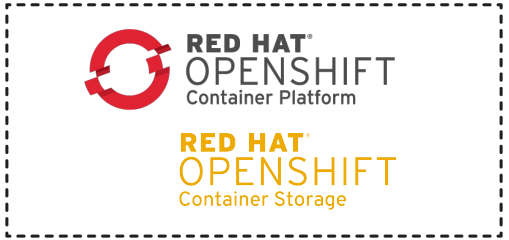
TWO FLAVORS OF CONTAINER STORAGE
Flexibility in Deployment



OPENSHIFT CONTAINER STORAGE
INDEPENDENT MODE

Use existing investment in traditional storage, managed by storage admin – attach to standalone storage

OCS 4.3



OPENSHIFT CONTAINER STORAGE
CONVERGED MODE

Highly scalable, enterprise-grade storage, fully integrated into OpenShift Container Platform

OCS 4.2

CONTAINER PLATFORM - COMPLETE FROM Red Hat

UNIFIED CLUSTER | COMPLETE PLATFORM | INTEGRATED & TESTED SINGLE VENDOR | UPGRADE & SCALE | SINGLE POINT OF SUPPORT

VALUE PROPOSITION BY PERSONA

OPENSHIFT CUSTOMERS

Complete Platform

Complete Storage

Infrastructure Agnostic

OPERATIONS

Consistent Operation across Hybrid Cloud

Manage & Monitor OCP + OCS together

DEVELOPERS

Consistent Consumption Experience

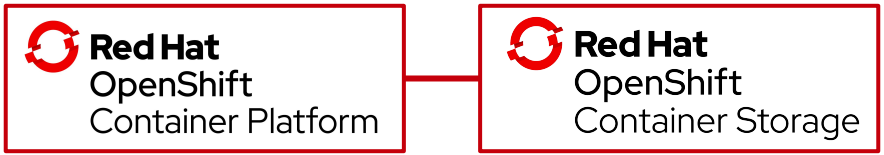
Invisible Infrastructure

BUSINESS LEADERS

Complete Platform from Red Hat

Single Vendor

No Lock-in



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Red Hat OpenShift Container Storage

Direction & Timeline

OCS 4 Technology Stack

RHOCS 4.x Roadmap

Nov 19

- OCS 4.2 GA - Converged Mode
- Operator driven install, expand, upgrade
- PV's backed by RWX, RWO, S3 for apps
- AWS, VMWare, & RHHI.Next
- OCP + OCS monitoring and management
- Multi Cloud Data Portability/Hybrid Cloud with S3 compatible API

Aug/ Sep 19

- OCS 4.2 Beta

Dec 19/Jan 20

- OCS 4.3* - Independent Mode
- Azure, Bare Metal
- Data Services
- Data Portability/Hybrid Cloud

OCS 4.X - Focus Areas

EASE OF USE

HYBRID CLOUD
& DATA SERVICES

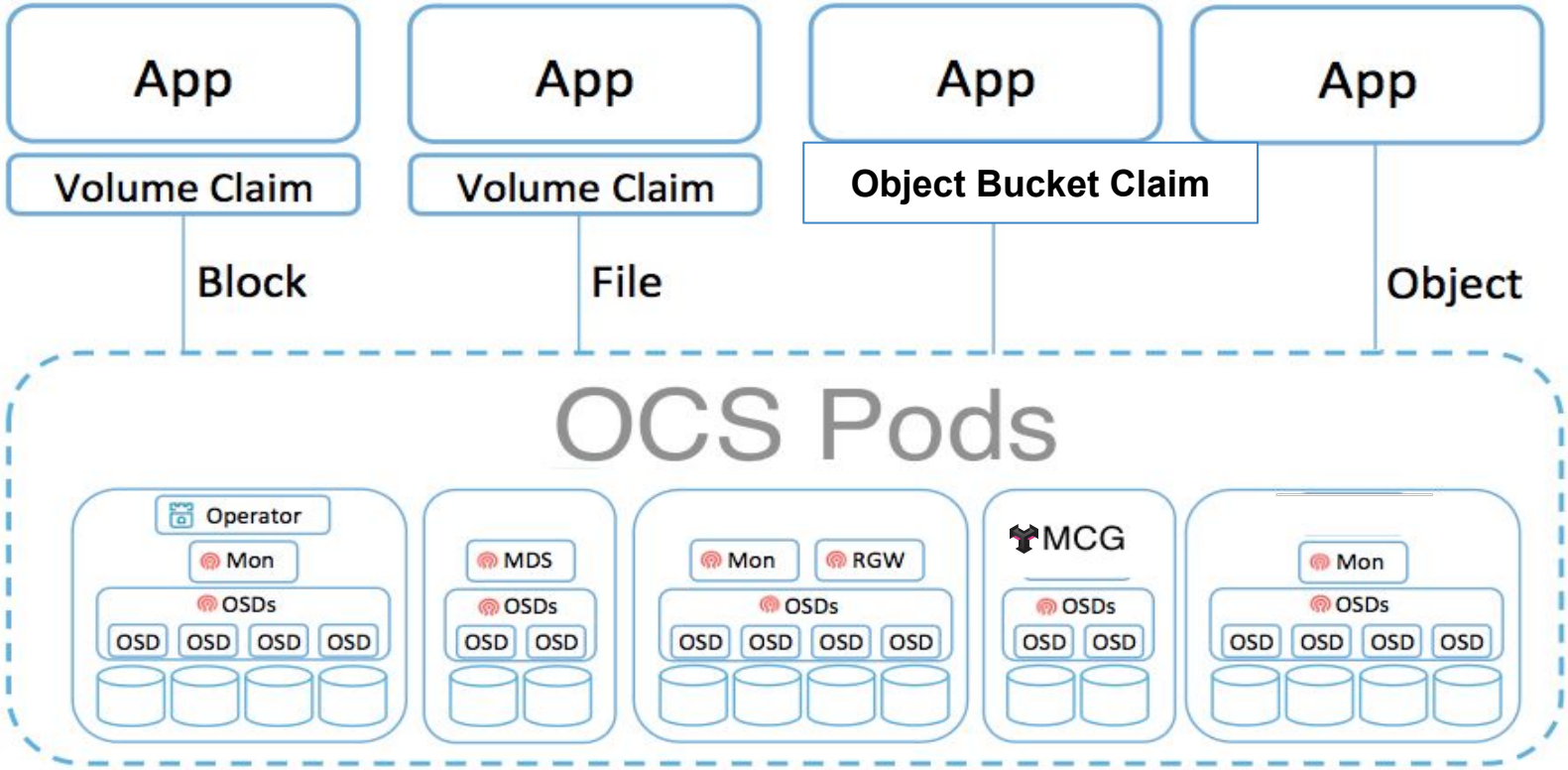
kubernetes

STORAGE
ENHANCEMENTS

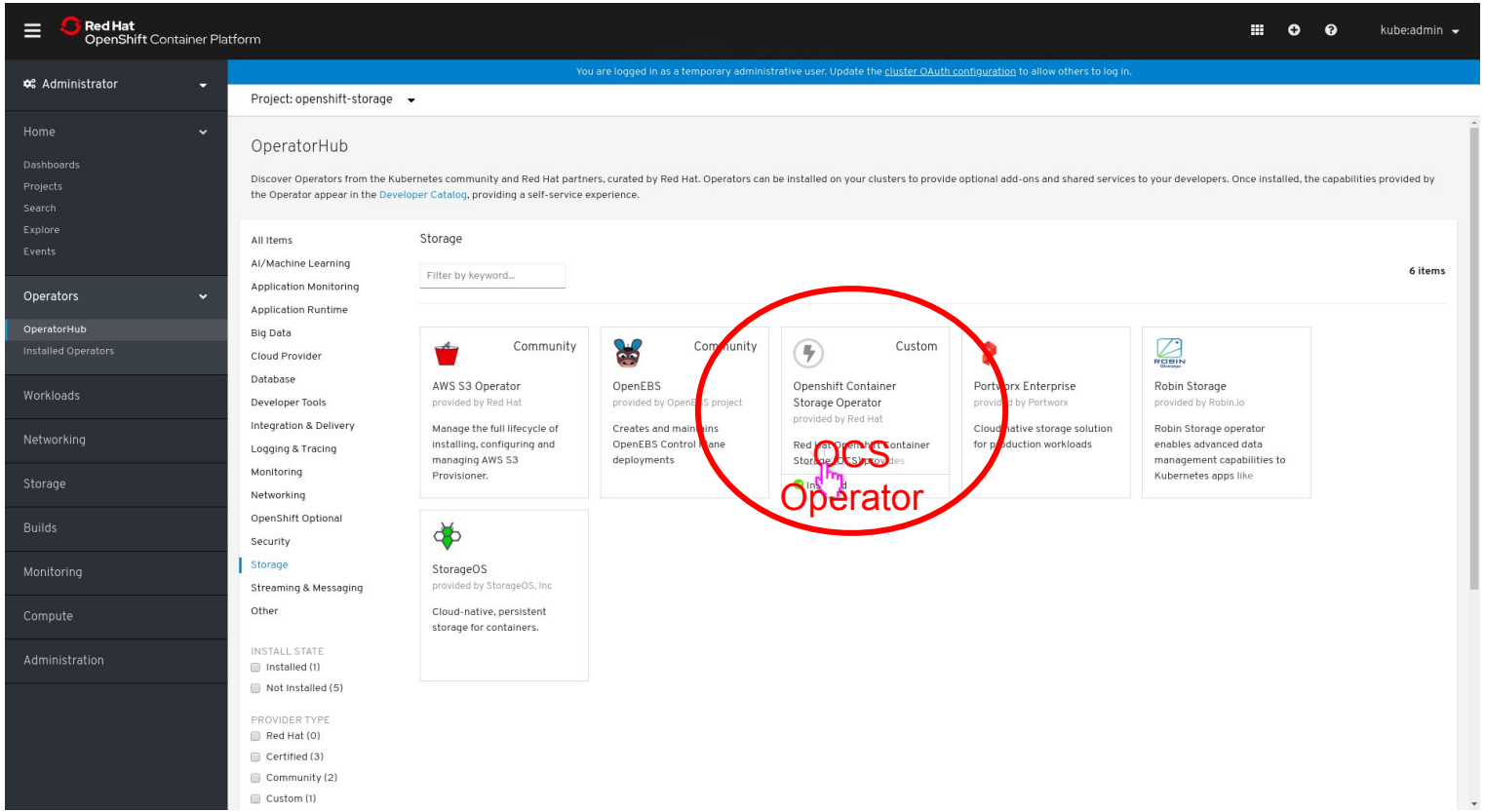
Ease of Use
Hybrid Cloud
Kubernetes Storage

OCS 4.x Operator Install, Upgrade, Expansion

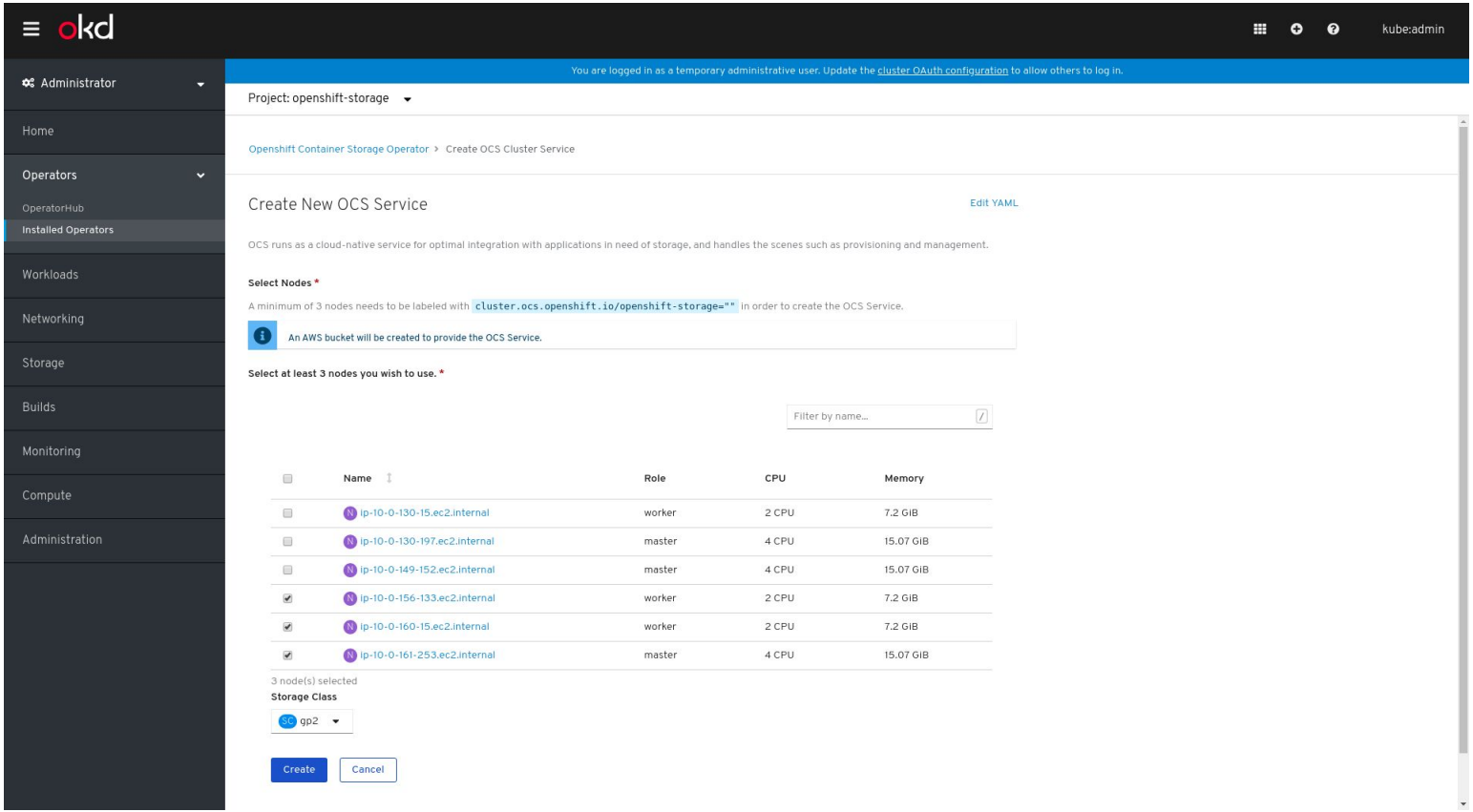
OCS Operator based on Rook.io with Operator Lifecycle Manager (OLM)



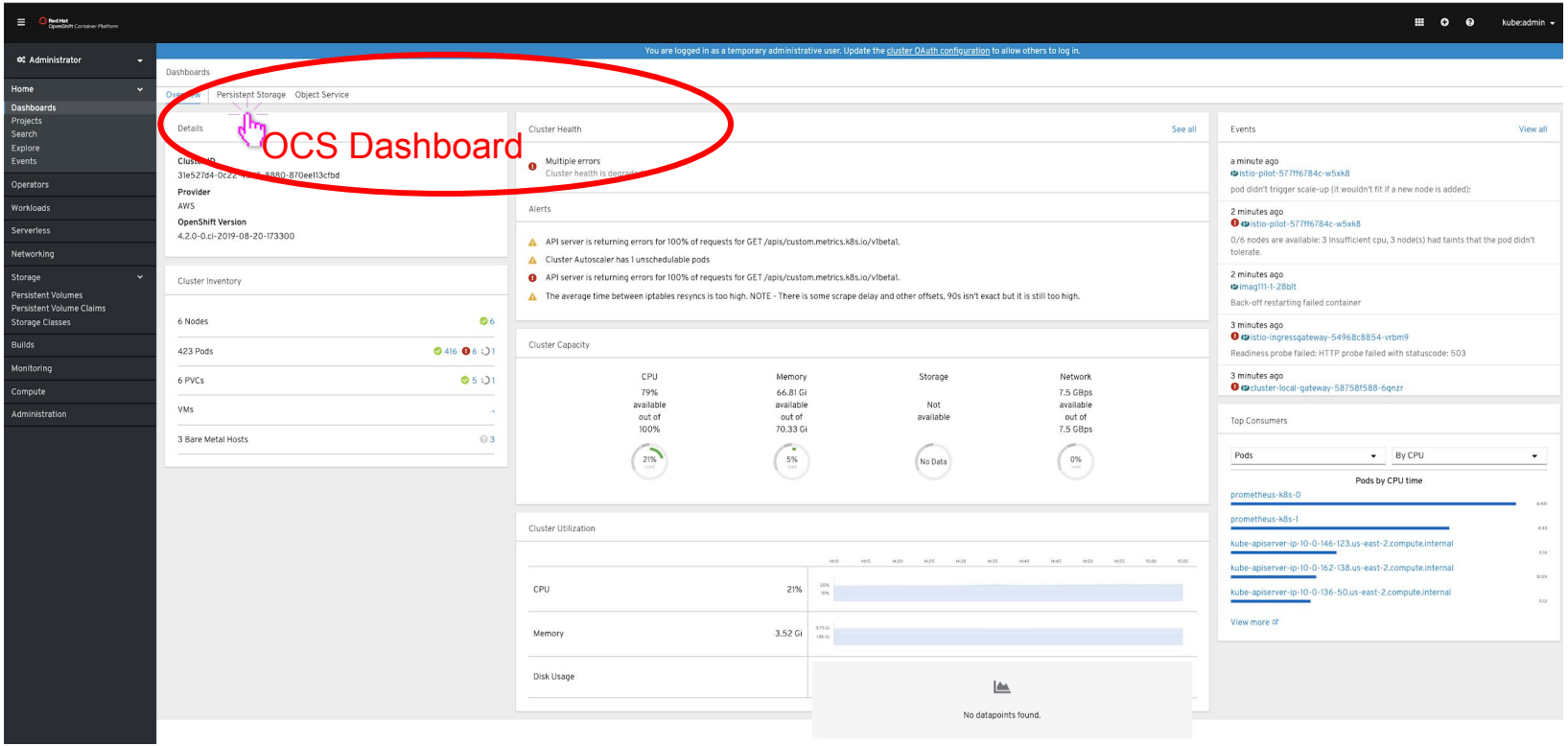
OCS 4.x Operator Driven Install from OLM



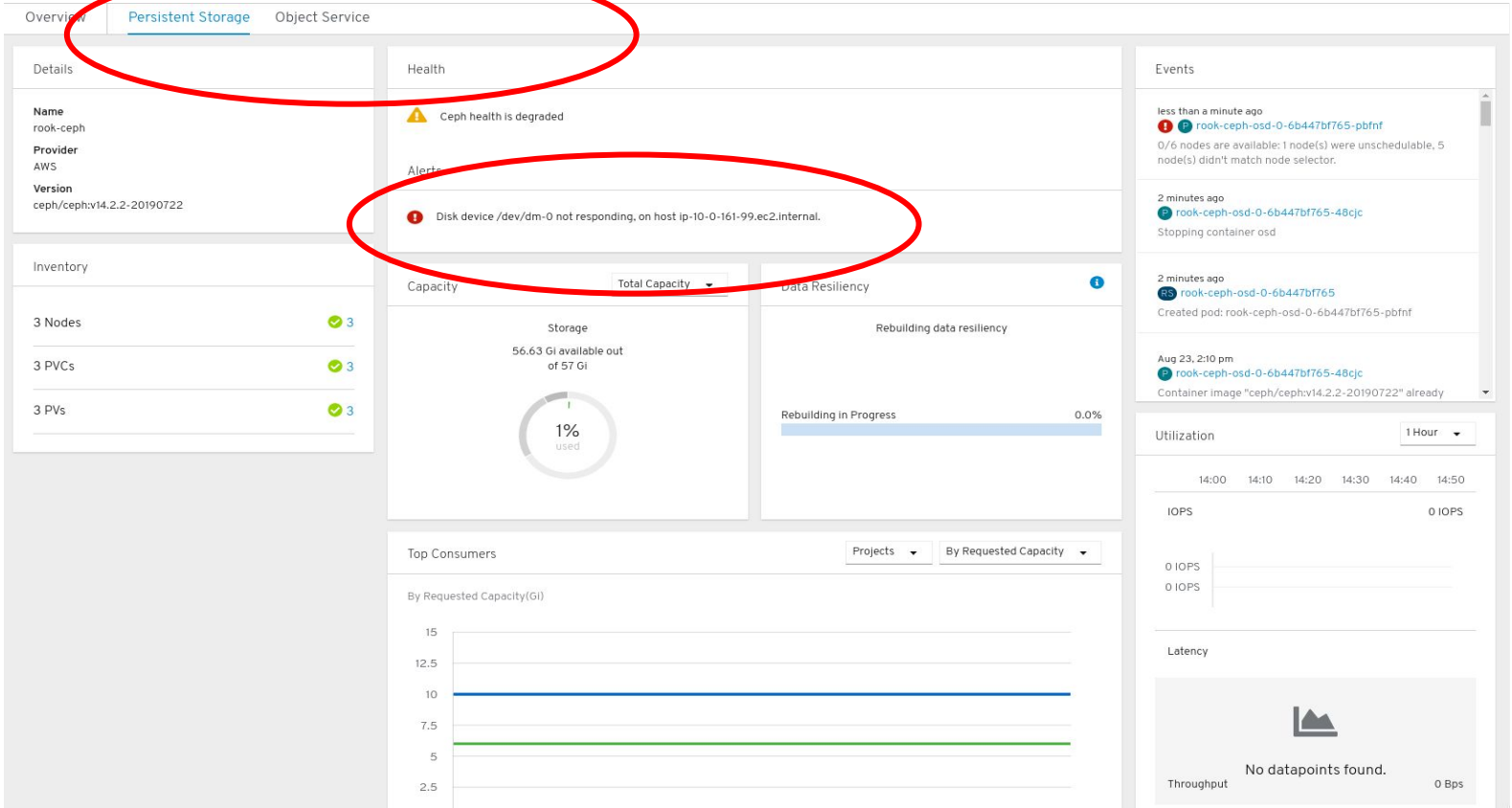
OCS 4.x Simple Install



OCP + OCS Integrated Monitoring and Management

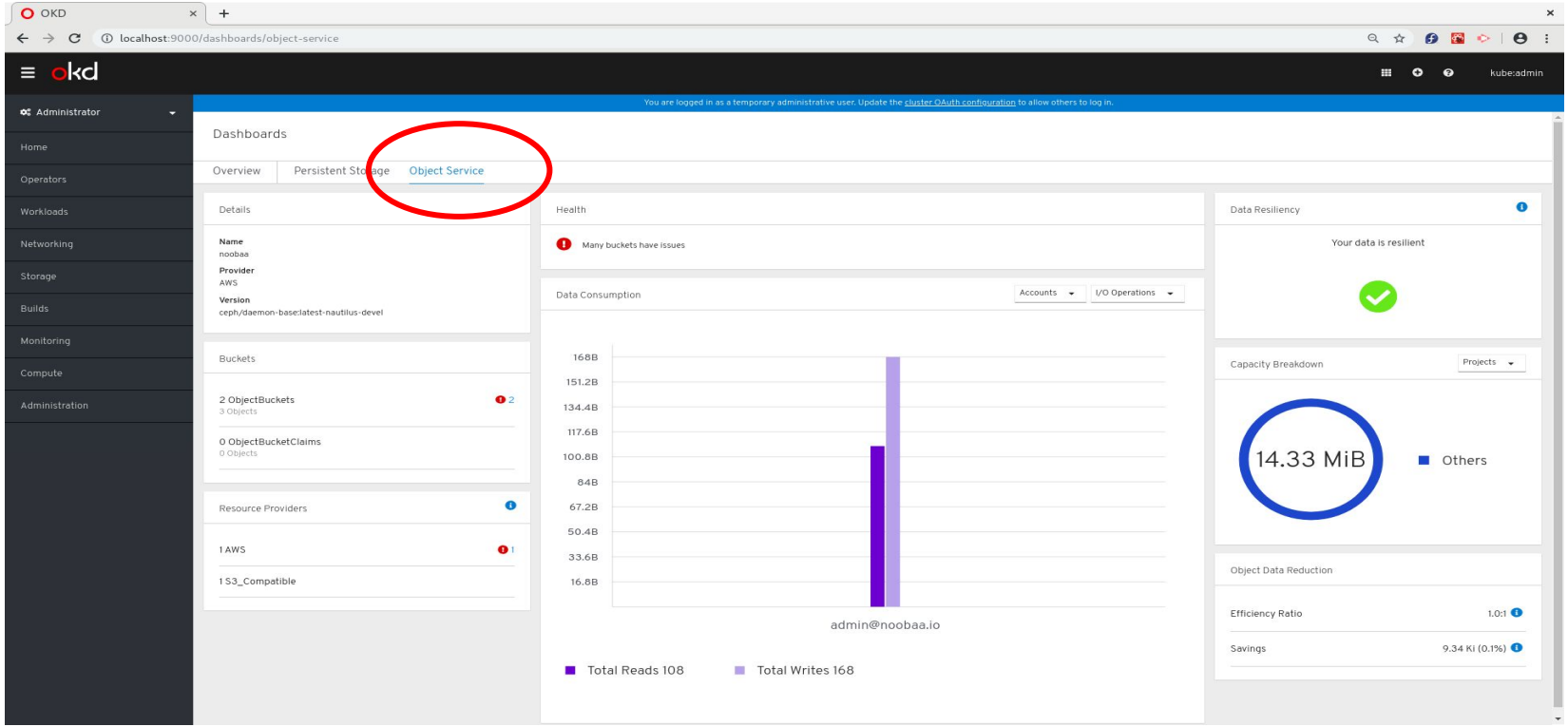


OCS Integrated Dashboard



Health, Capacity, Performance, Configuration, Alerts

OCS Integrated Dashboard - Object Storage



Monitoring and Alerts

Ease of Use

Hybrid Cloud

Kubernetes Storage

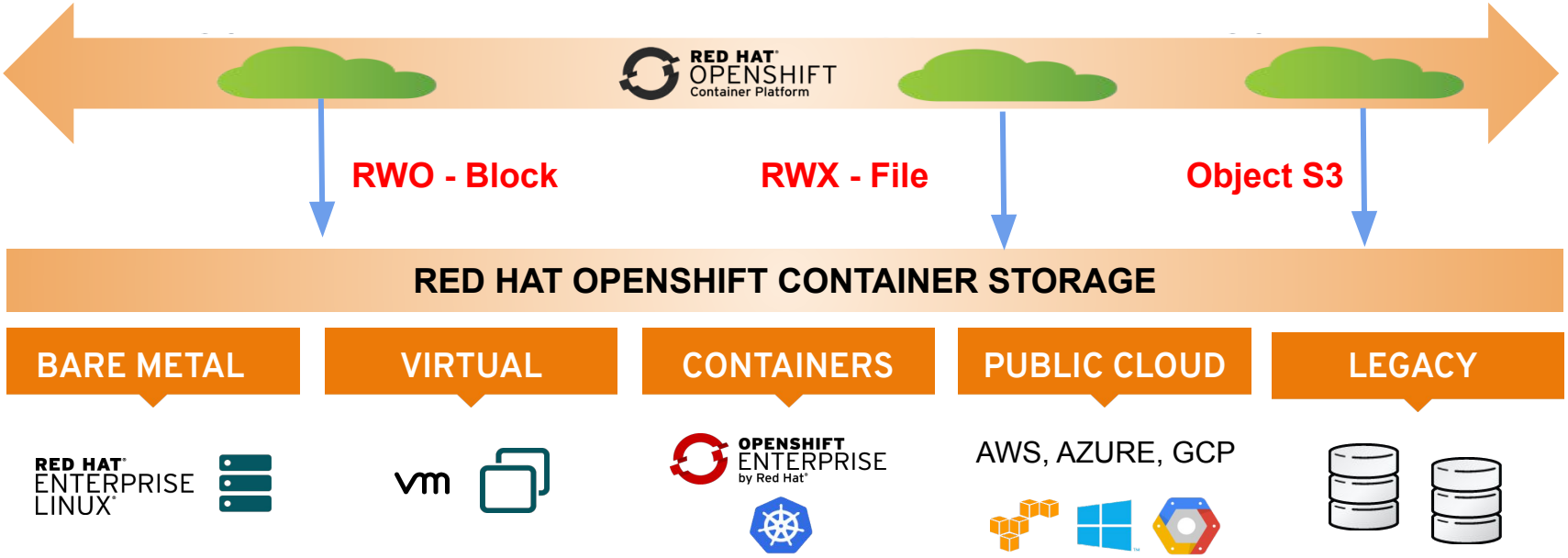
Red Hat OpenShift Container Storage

Consistent Set of OpenShift Stateful Service

OPEN HYBRID CLOUD IMPERATIVES

Application Portability | Platform Independence | Elastic

Complete Storage for Container Platform



Addition of Object S3 completes the storage stack
OCS- MCG (Noobaa) backed by RGW or cloud native S3

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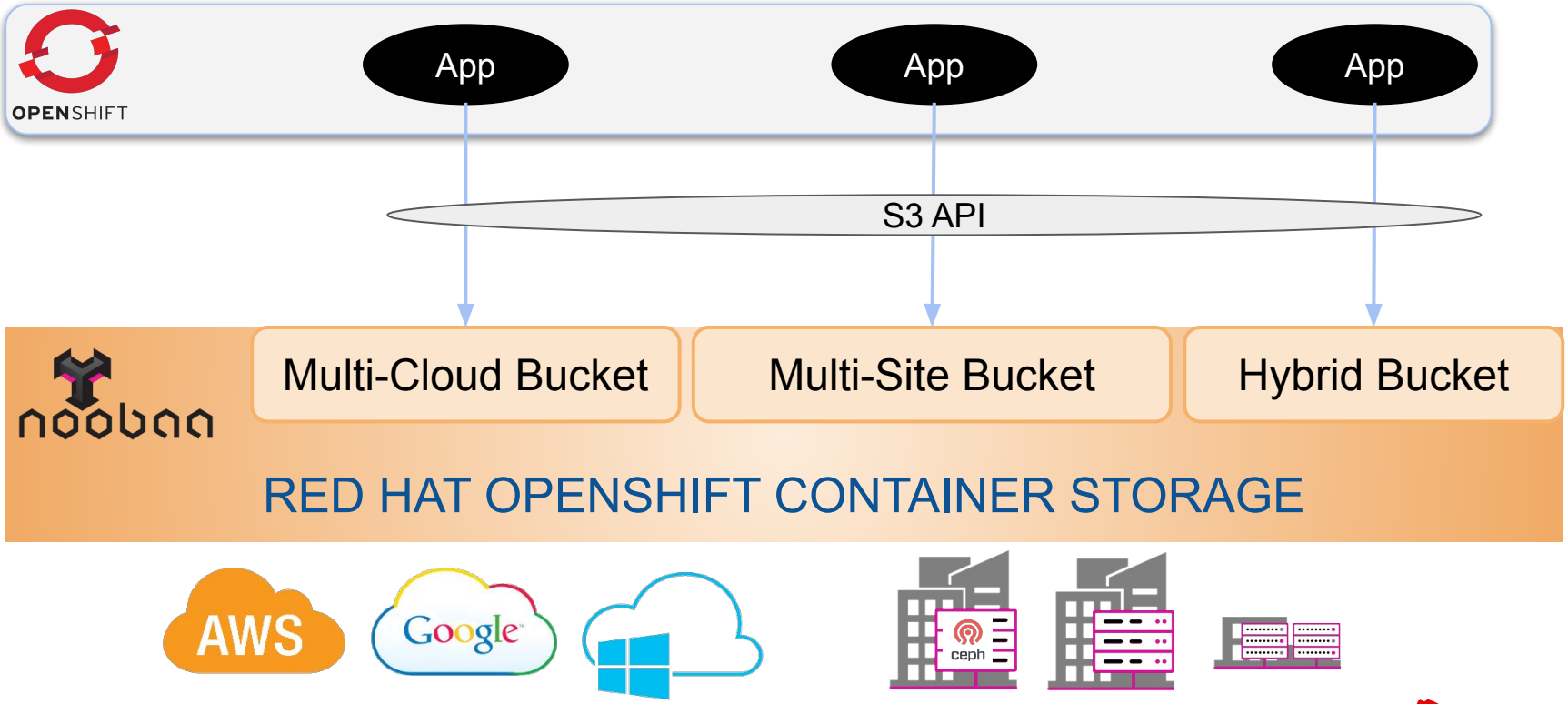
Multi-Cloud Object Gateway (NooBaa)



Active - Active Multi Cloud Read /Write, First Iteration

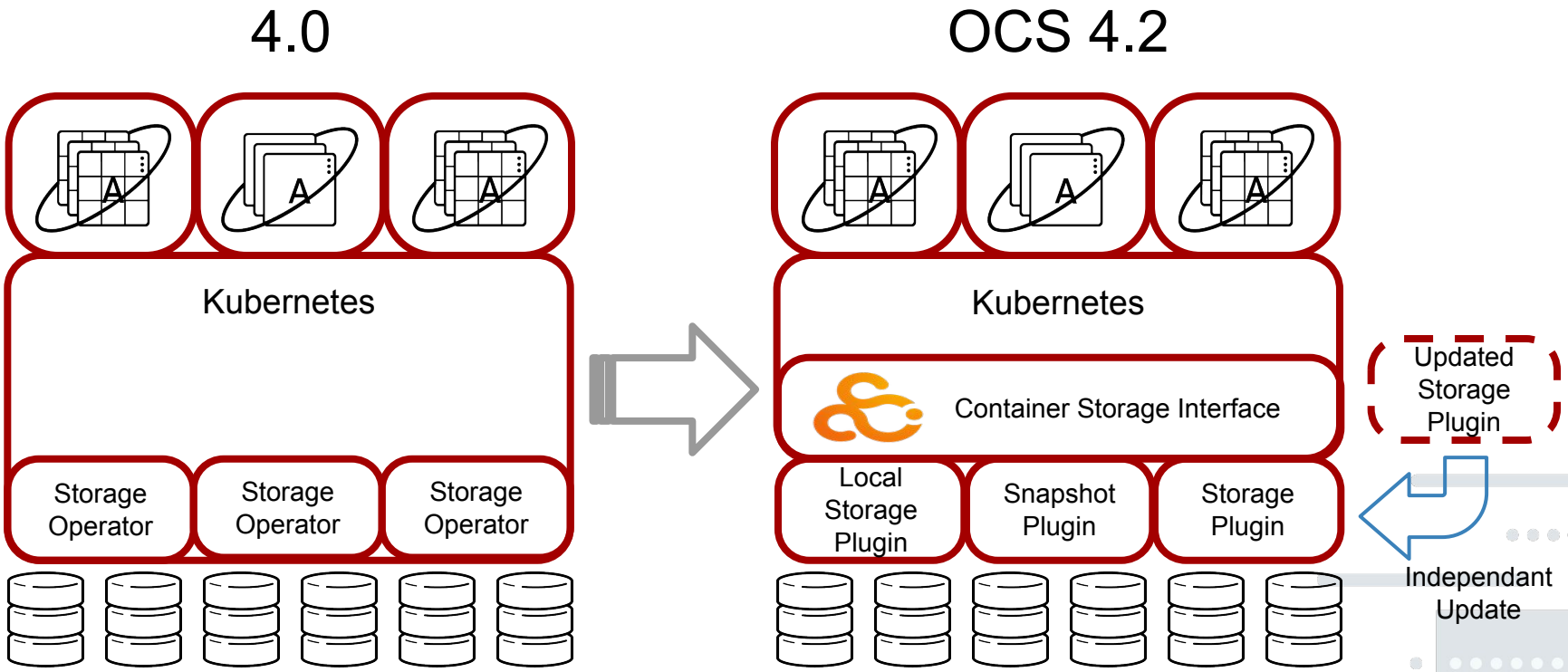
Ease of Use

Hybrid Cloud

OpenShift/Kubernetes

Storage

OpenShift Storage - CSI



OpenShift 4.1

- Storage Operators
- Platform support: AWS EBS, Hostpath, iSCSI, FC, NFS, vSphere, AWS EFS (Dev Preview)

OpenShift 4.2

- **Container Storage Interface 1.0 GA**
- CSI drivers
- CSI Test/Certification API Test Suite
- Local Storage Operator
- **Raw Block**
- **OCS integration and support**
- Platforms: Azure, GCP

OpenShift 4.2+

- Snapshot and Restore
- Clone
- PV Resize

Red Hat OpenShift Container Storage

Getting Started with 3.11

OPENSHIFT CONTAINER STORAGE 3.11.x ROADMAP

OCS 3.11.3

June 2019

- Optimized container images
- limit # of volumes
- 2TB block volumes
- Block stability fixes

RHOCS 3.11.4

October 2019

- Re-base to RHGS 3.5
- 2000 + PV gluster-file volumes
- PVC names > 63 characters
- quota configuration
- Improved Block performance

OCS 3.11 same lifecycle as OCP 3.11

No change in SKU or pricing

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OCP 3 + OCS 3 → OCP + OCS 4

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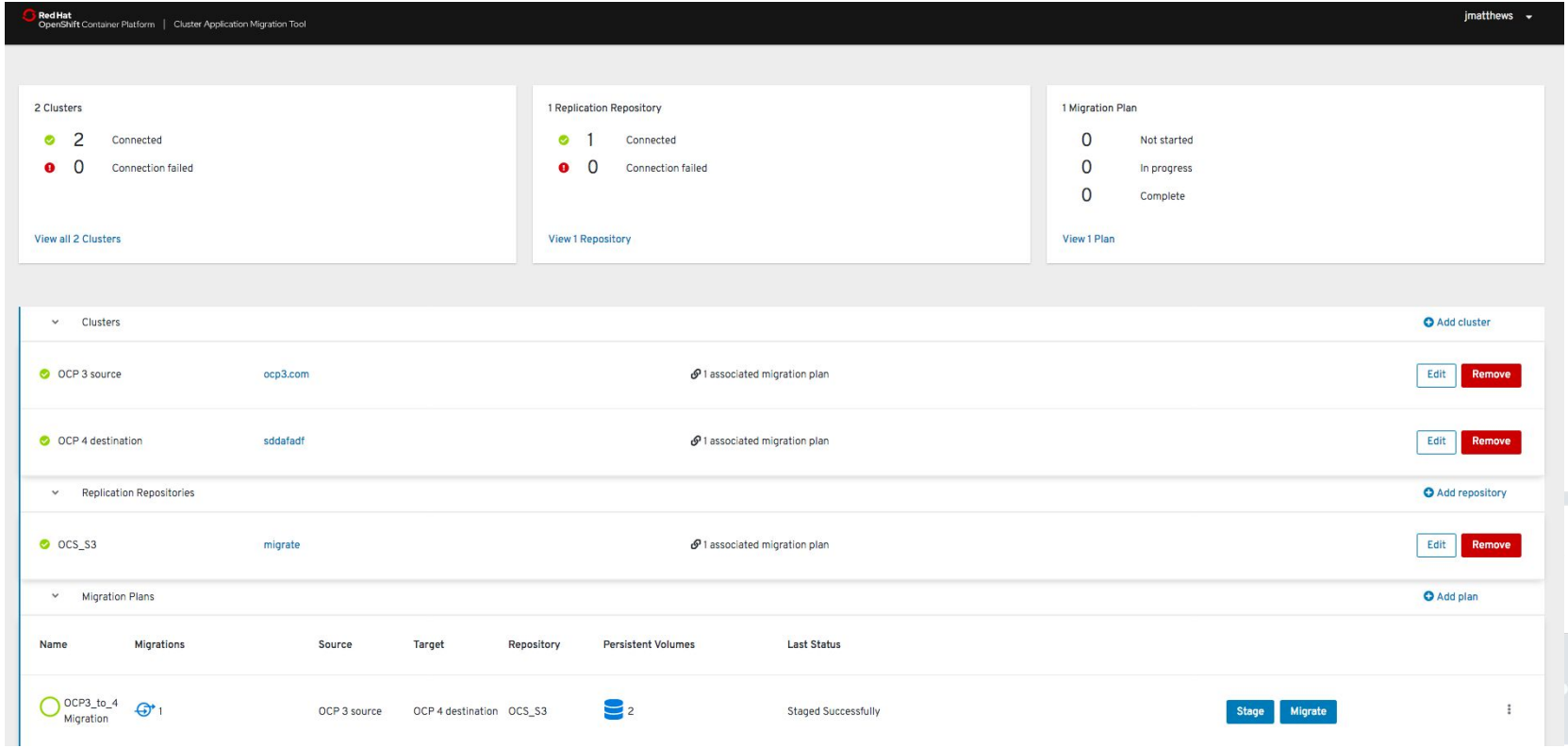
OpenShift Cluster App Migration Tool



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