Red Hat OpenShift

What's Next in OpenShift

Q4CY2021

OpenShift Product Management

Red Hat

Red Hat Open Hybrid Cloud

Enabling any application, on any infrastructure, in any location

Traditional N-Tier Apps

Cloud Native Microservices

Data, Analytics & AI/ML

ISV Packaged Apps

Red Hat OpenShift

Red Hat Enterprise Linux

Red Hat

Available as self-managed platform or fully managed cloud service

Start quickly, we manage it for you

Cloud managed

Managed Red Hat OpenShift services

Red Hat OpenShift service on Amazon Web Services[1]	Microsoft Azure Red Hat OpenShift	Red Hat OpenShift on IBM Cloud[1]	Red Hat OpenShift Dedicated[2]

You manage it, for control and flexibility

Customer managed

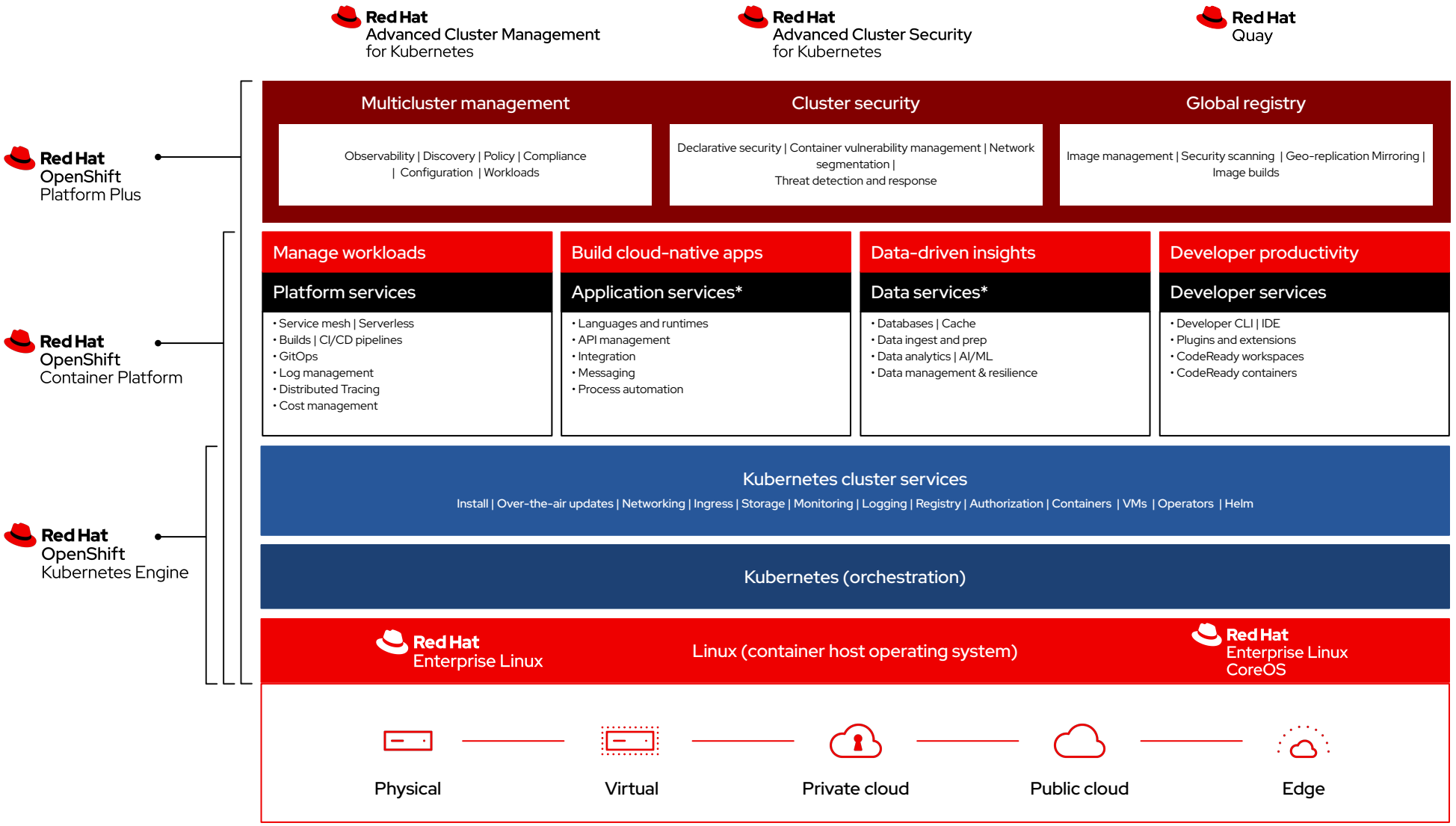
Self-managed Red Hat OpenShift

Red Hat OpenShift Platform Plus	Red Hat OpenShift Container Platform	Red Hat OpenShift Kubernetes Engine	On public cloud, or on-premises on physical or virtual infrastructure[3]

3

Source:
1 In preview as of 1/1/2021. Also available as Red Hat OpenShift Dedicated managed service running on user-supplied AWS infrastructure.
2 Red Hat managed service running on user-supplied GCP infrastructure
3 See docs.openshift.com for supported infrastructure options and configurations

Red Hat OpenShift



Red Hat


okd
falco
HELM
CODENVY
Red Hat

HYBRID CLOUD EXPERIENCE

Applications in hybrid clouds and clusters

CORE, PLATFORM & DEVELOPER TOOLS	TELCO & EDGE	MANAGED CLOUD SERVICES
		
Self-managed clusters and applications Foundations for Managed Services and Telco and Edge	5G CORE and 5G RAN Near edge and Far edge From and to the edge	OpenShift as a (SRE) Managed Service Managed (SRE) Application, Data and Management Services

Unified Experience

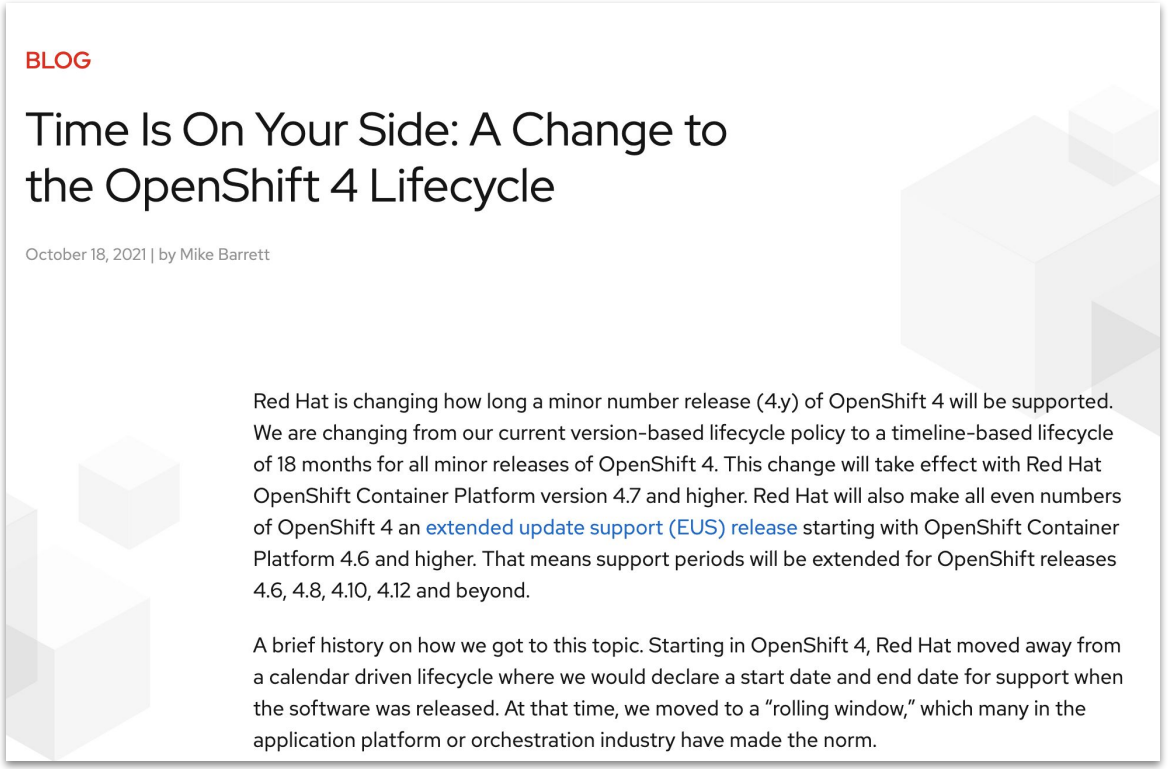
Security Everywhere

Platform Consistency

Red Hat

Changes to OpenShift Minor Release (4.y) Life Cycle

- Minor releases will have **18 months life**
- **Even releases** are designated as **EUS**
- A new **EUS to EUS upgrade** experience
- OpenShift 4 EUS be available to both standard and premium support
- **3 OCP releases per year** (same a Kubernetes)



BLOG

Time Is On Your Side: A Change to the OpenShift 4 Lifecycle

October 18, 2021 | by Mike Barrett

Red Hat is changing how long a minor number release (4.y) of OpenShift 4 will be supported. We are changing from our current version-based lifecycle policy to a timeline-based lifecycle of 18 months for all minor releases of OpenShift 4. This change will take effect with Red Hat OpenShift Container Platform version 4.7 and higher. Red Hat will also make all even numbers of OpenShift 4 an extended update support (EUS) release starting with OpenShift Container Platform 4.6 and higher. That means support periods will be extended for OpenShift releases 4.6, 4.8, 4.10, 4.12 and beyond.

A brief history on how we got to this topic. Starting in OpenShift 4, Red Hat moved away from a calendar driven lifecycle where we would declare a start date and end date for support when the software was released. At that time, we moved to a "rolling window," which many in the application platform or orchestration industry have made the norm.

Link to the Red Hat Blog - https://cloud.redhat.com/blog/time-is-on-your-side-a-change-to-the-openshift-4-lifecycle
Red Hat OpenShift Container Platform Life Cycle Policy - https://access.redhat.com/support/policy/updates/openshift

Red Hat

OpenShift Roadmap

1H CY2022

APP/DEV
- Helm + Go hybrid Operator SDK (Tech Preview)
- File-based operator catalog management
- OpenShift Serverless Functions
- OpenShift Serverless - Kafka Broker (TP)
- Dynamic Plugins for the OCP Console
- Service Mesh on OpenShift Virtualization
- Pipelines: concurrency control
- Pipelines: in-cluster Tekton Hub
- Pipelines: TaskRun and image signing
- Shipwright (TP) with local build
- Shared secret/configmaps across namespaces
- GitOps: HashiCorp Vault integration

PLATFORM
- Azure Stack Hub (IPI)
- Alibaba, & IBM Cloud (IPI)
- OpenShift on ARM (AWS and Bare Metal)
- VMWare HW version 15 and thin provisioning
- Custom audit profiles by group
- Cert-manager
- Group membership information from an idp (OIDC)
- MetalLB with BGP Support
- External DNS management
- Network Observability & Analysis Tooling
- Primary Traffic on 2ndary Cluster Host Interface
- Egress IP Multi-NIC Support
- Disconnected mirroring simplification
- Windows: containerd, health management, csi-proxy

MANAGED
- ROSA: cluster manager UI for ROSA provisioning
- ROSA/OSD: Cluster Hibernation
- ARO: Azure Portal UI for ARO provisioning
- Cost: Improved models for distribution of costs

2H CY2022

APP/DEV
- Operator installed by default (Day0)
- Java/Quarkus Operator SDK (TP)
- Auto-scaling: Operator managed workload
- mTLS natively in OpenShift Serverless/Knative
- ServiceMesh for external services (VMs, BM)
- ServiceMesh Support for IPv6
- Pipelines: unprivileged builds
- Plpelines: extended history and log retention
- Pipelines: manual approval
- Argo CD multi-tenancy alignment with k8s
- Argo CD Helm deployment enhancements
- Shipwright: build triggers

PLATFORM
- Alibaba, & IBM Cloud (UPI)
- Nutanix (UPI/IPI)
- SRO manages third party special devices
- GA of cert-manager, Pod Security Admission,
- Reconcile SCC, Kube KMS
- Gateway API GA
- eBPF Support
- Support for ALB
- OVN as a secondary network
- Network tracing and Topology Views
- Log Exploration Tool in the OpenShift Console
- Windows: additional network plugins, HPA
- DPU/SmatNIC support

MANAGED
- ROSA/OSD: FedRAMP High on AWS GovCloud
- ROSA/OSD: Terraform provider
- ROSA/OSD/ARO: GPU Support
- ARO: Upgrades through cluster manager
- Cost management understands IBM Cloud IaaS

2022+

APP/DEV
- Operator- Android-Style Permission Approval
- Operator - Helm Bundle Support
- Operator - Python SDK prototype
- Operator - Canary Rollouts / Fleet Management
- Centrally managed multi-cluster service mesh
- Serverless - Stateful functions
- Make existing deployments Serverless
- Shipwright custom tasks for Tekton
- Argo CD application dependencies
- Argo CD image updater and notifications
- Pipelines: Tekton Bundle support
- Pipeline reuse in pipelines

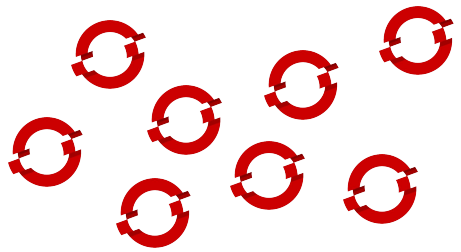
PLATFORM
- Utilize cgroups v2
- Expand cloud providers for OpenShift on ARM
- Enable user namespaces
- Hierarchical namespaces, Automate group sync, prevent brute force logins
- ESNI Support
- Network Policy v2
- Network Bandwidth-Aware Scheduler (QoS)
- Ingress - Automatic Intelligent Sharding
- SigStore style image signature verification
- Allow OpenShift tenants to configure log forwarding

MANAGED
- Cost mgmt integration to Subs Watch, ACM
- Detailed Quota Usage in cluster manager
- ROSA/OSD: AWS Dedicated instances

Hybrid Cloud and Openshift Platform Plus

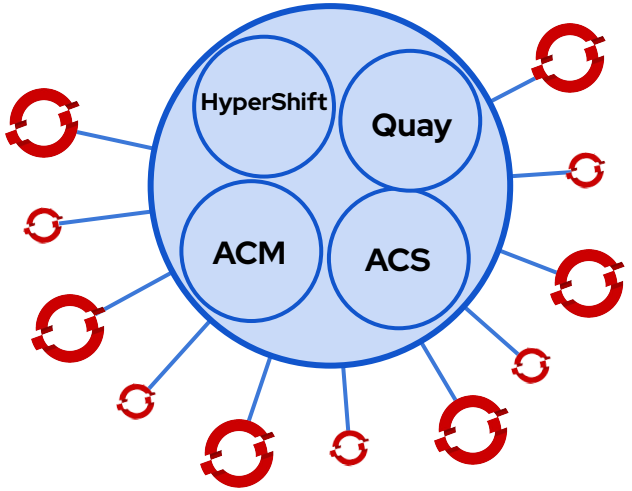
Red Hat

Successful fleet management requires central tools
Customers desire “regionality” for these tools



This is a big shift in thinking:

1. Embrace the Hub—*an infrastructure cluster*—as the unit of regionality to run OpenShift Plus.
2. Update deployment patterns to reflect Hub and spoke OpenShift clusters



Hybrid Cloud and OpenShift Platform Plus

Standardized tools for your 1st and 100th cluster

Multi-cluster layer

Multicluster management
Observability ⁝ Discovery ⁝ Policy ⁝ Compliance ⁝ Configuration ⁝ Workloads

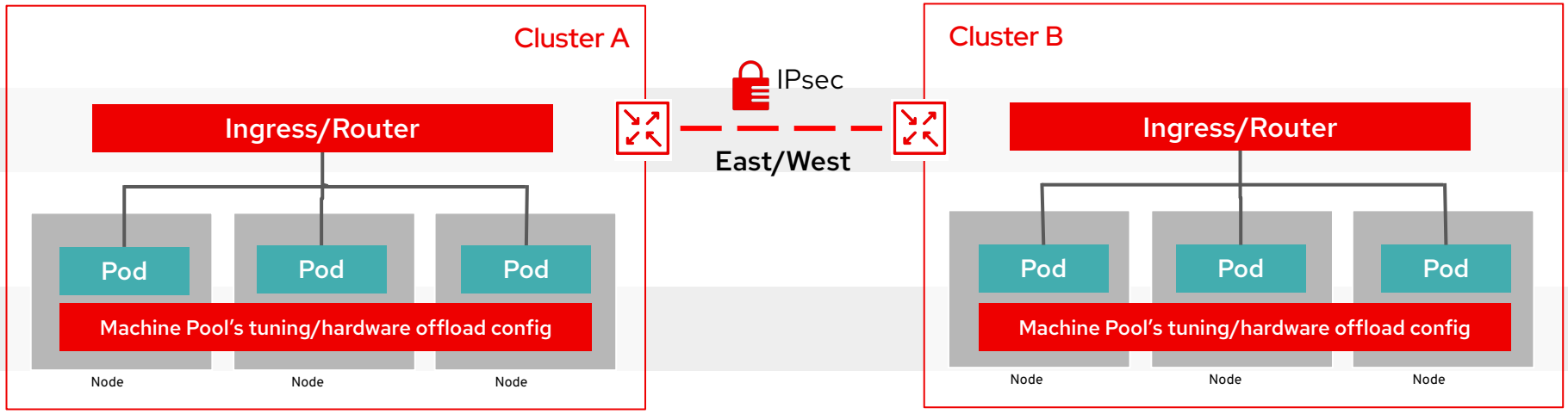
Container registry
Container Builds ⁝ Security Scanning ⁝ Geo Replication

Multicluster security
Kube native declarative security | DevSecOps

Global Ingress/Egress | Global LB | Service Mesh Federation

Router layer

Node layer



Multi-cluster Storage

Red Hat

Red Hat Advanced Cluster Management for Kubernetes

Unified Experience

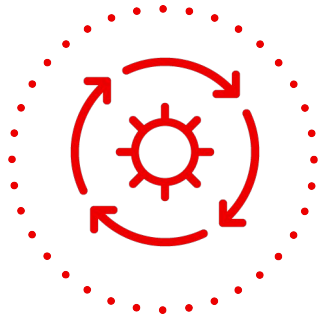
Leverage a single console experience from 1 cluster to thousands to deliver applications consistently across cloud services and on premises environments.

Reduced Total Cost of Ownership

Security Everywhere

Cosigned manifests and secrets management enable faster application delivery with security throughout the supply chain.

Reduced Exposure and Risk



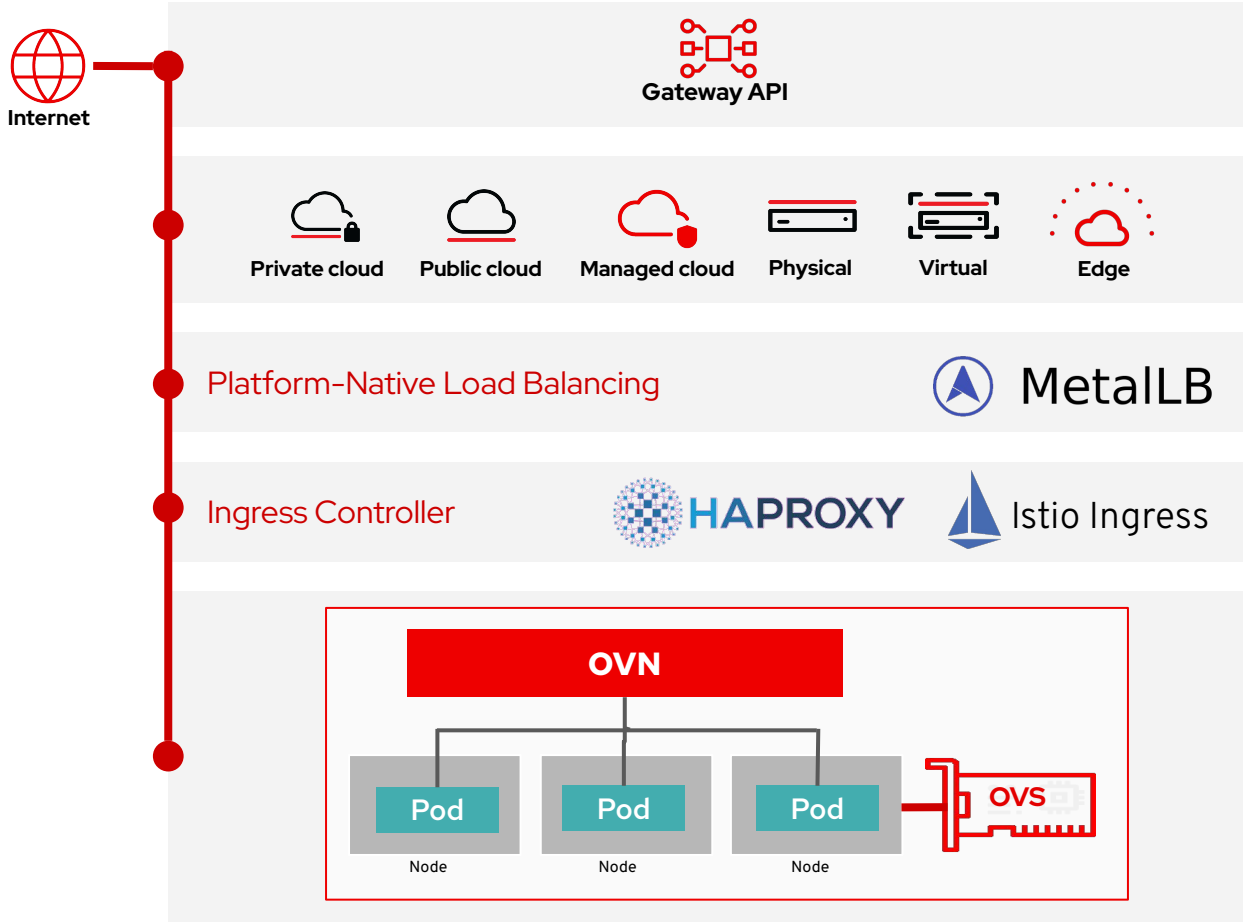
Platform Consistency

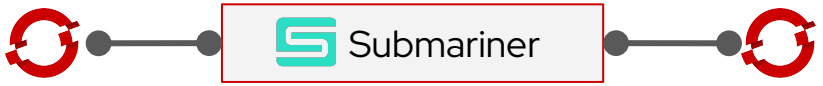
Deploy single, compact, multinode, remote worker nodes, cloud services, and HyperShifted clusters from hierarchical tiers of management hubs.

Increased Developer Productivity

Red Hat

Multi-cluster Gateway for Ingress and Egress



- Unified traffic handling so you configure all your traffic the same way
- Any supported platform – add or swap easily, hybrid scenarios
- Flexibility to use native traffic distribution and filtering (e.g. WAF) for optimal performance
- Your traffic, your way: L4-L7, Envoy, by-pass
- OVN for advanced traffic workloads
- IPv6 single/dual for scale
- eBPF for policy, traffic control, tooling, debugging, observability
- BGP-advertised services (FRR)
- Observability for improved understanding
- Multi-NIC support to align host networking
- HW Offload (OVS, IPsec, ...) for performance
- 

Red Hat

OpenShift Multi-Cluster Storage

OpenShift Storage

Cloud providers CSIs
CSI Migration from in-tree
CSI Standardization

NFS Kerberos mounts
Secret Store CSI

CSI Resize
Transfer PVC/Snapshots between namespace
CSI Ephemeral volumes
Expansion of stateful sets

OpenShift Data Foundation

OpenShift and ACM common console for all shared file (RWX), block (RWO), and object storage classes

Optional encryption on multiple levels
Out-of-the-box async replication
Easily add regional Disaster Recovery

Consistent data foundation capabilities and experience for users and workloads: on-premises, in the cloud, and at the edge

Standardization & Reduced Total Cost of Ownership

Reduced Risk & Increased Business Continuity

Increased Developer & Admin Productivity

Red Hat

Advanced Cluster Security for Kubernetes

Unified Experience

Accelerate operationalization with managed services.

Improve feedback loops, and create a shared languages for security and development teams

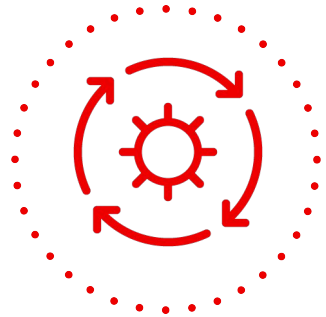
Break cross functional barriers to reduce cost

Security Everywhere

Enable teams to remediate issues more effectively

Identify risk indicators across expanded use cases

Innovate with confidence by bridging the skill gap



Platform Consistency

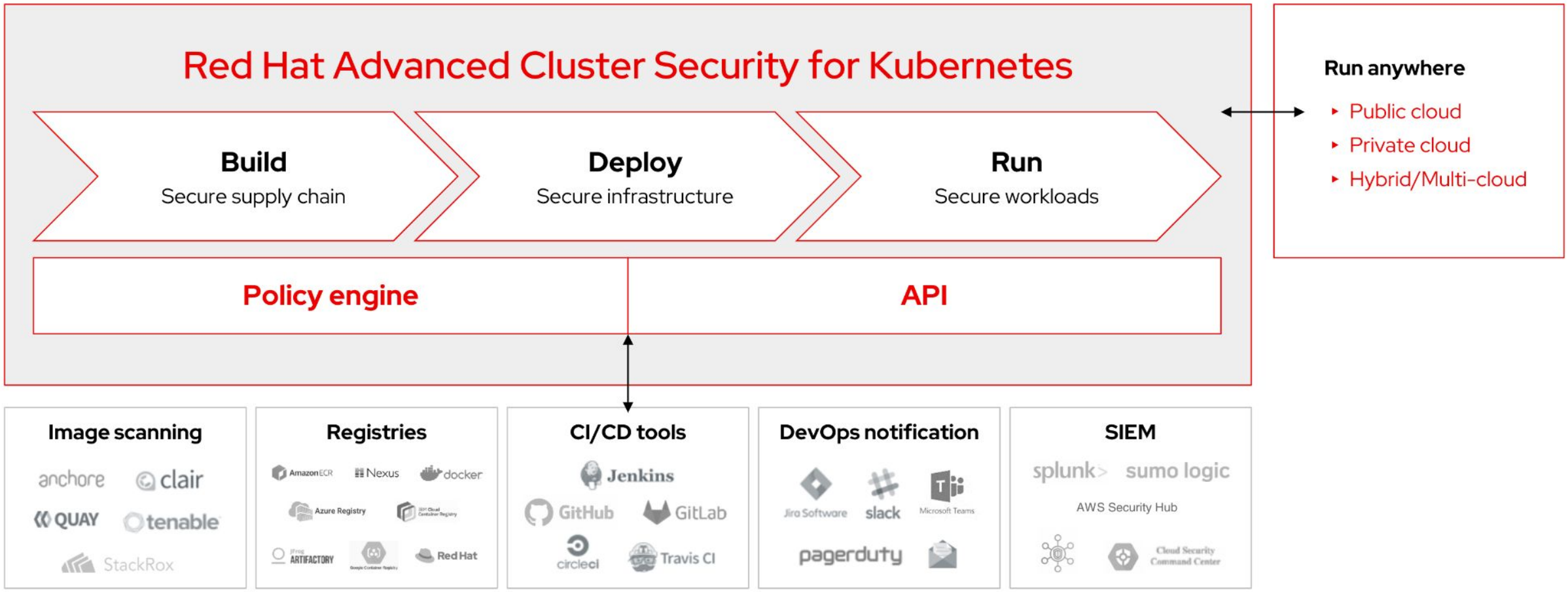
Provide consistent security data across the OpenShift and Kubernetes ecosystem

Enable teams to scale policy workflows in a repeatable way

Reduce complexity to focus resources

Red Hat

Evolving a Kubernetes Native Security Platform



Red Hat

Red Hat Quay

Unified Experience

Visual consistency with a completely new UI

Integration of quay.io into console.redhat.com

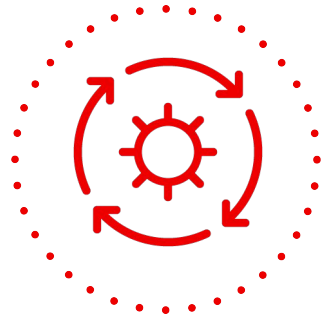
Consistent UX from self-managed to hosted

Security Everywhere

Scanning coverage beyond container base images (Java / Go packages)

Trust & verify with signatures

Remediate security risk before production



Platform Consistency

Geo-replication on all platforms via the Quay operator

Consistent consumption experience with pull-thru caching of external registries

Hybrid content distribution

Red Hat

Observability

Simplified Hybrid Observability

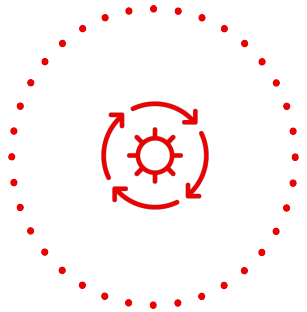
Enhancements to distinguish between Workload Monitoring & User Defined Projects to monitor flexible Hybrid Workloads and Applications

OpenShift Console Optimized for Hybrid Workload Monitoring

Correlation Consistency

Improved Thanos and Prometheus Support to extend using remote write for storage and platform monitoring for OpenShift Workloads

OpenShift Long & Short-Term Ingest Metrics Storage



Visualization Flexibility

Extensible visualization flexibility enabling Dashboards or OpenShift Console Visualization Across Cluster Workloads.
Log Exploration Tools

Optimized API Experience in OpenShift Console

Network Observability

Unified Experience

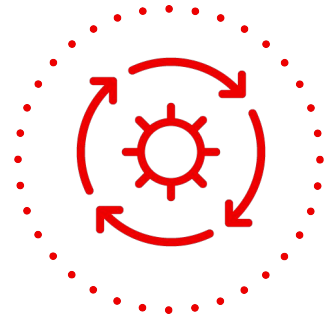
Whether one cluster or one hundred, developers and cluster administrators require seamless connectivity across applications.

Network Traffic Metrics and Tracing

Security Everywhere

Security and regulatory compliance requires governance of traffic in, around, and out of networks.

Network Policy and Governance



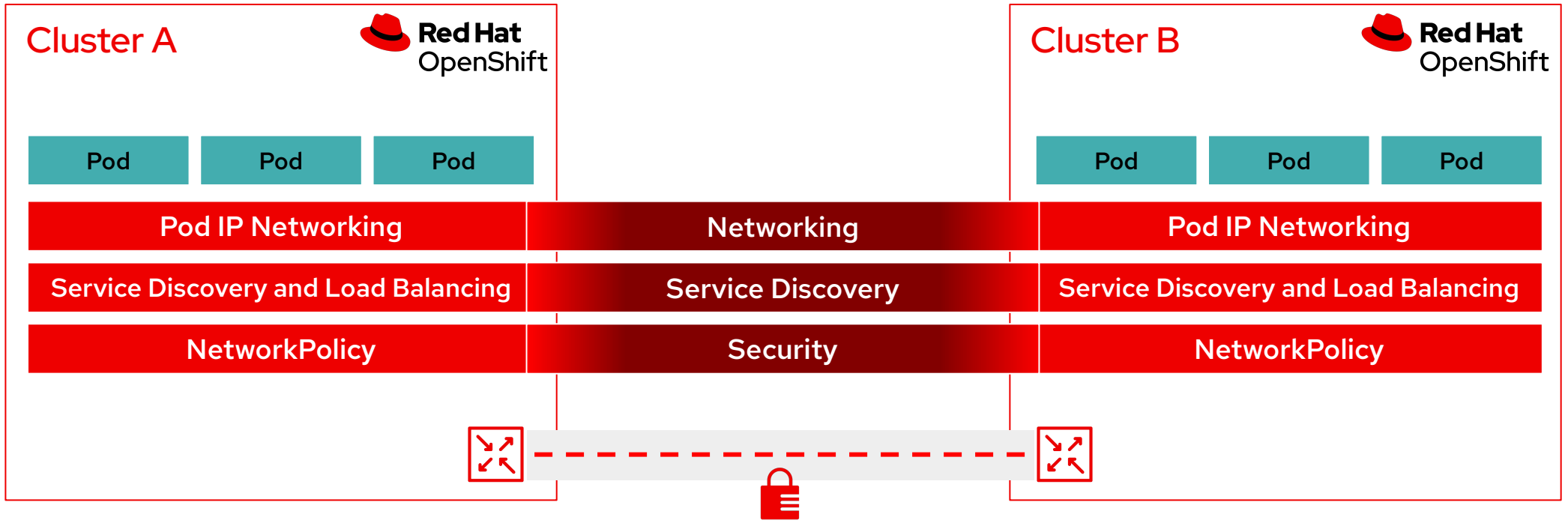
Platform Consistency

Developers and administrators require a common understanding of their traffic within and across cluster boundaries.

Network Traffic Flow and Topology

Red Hat

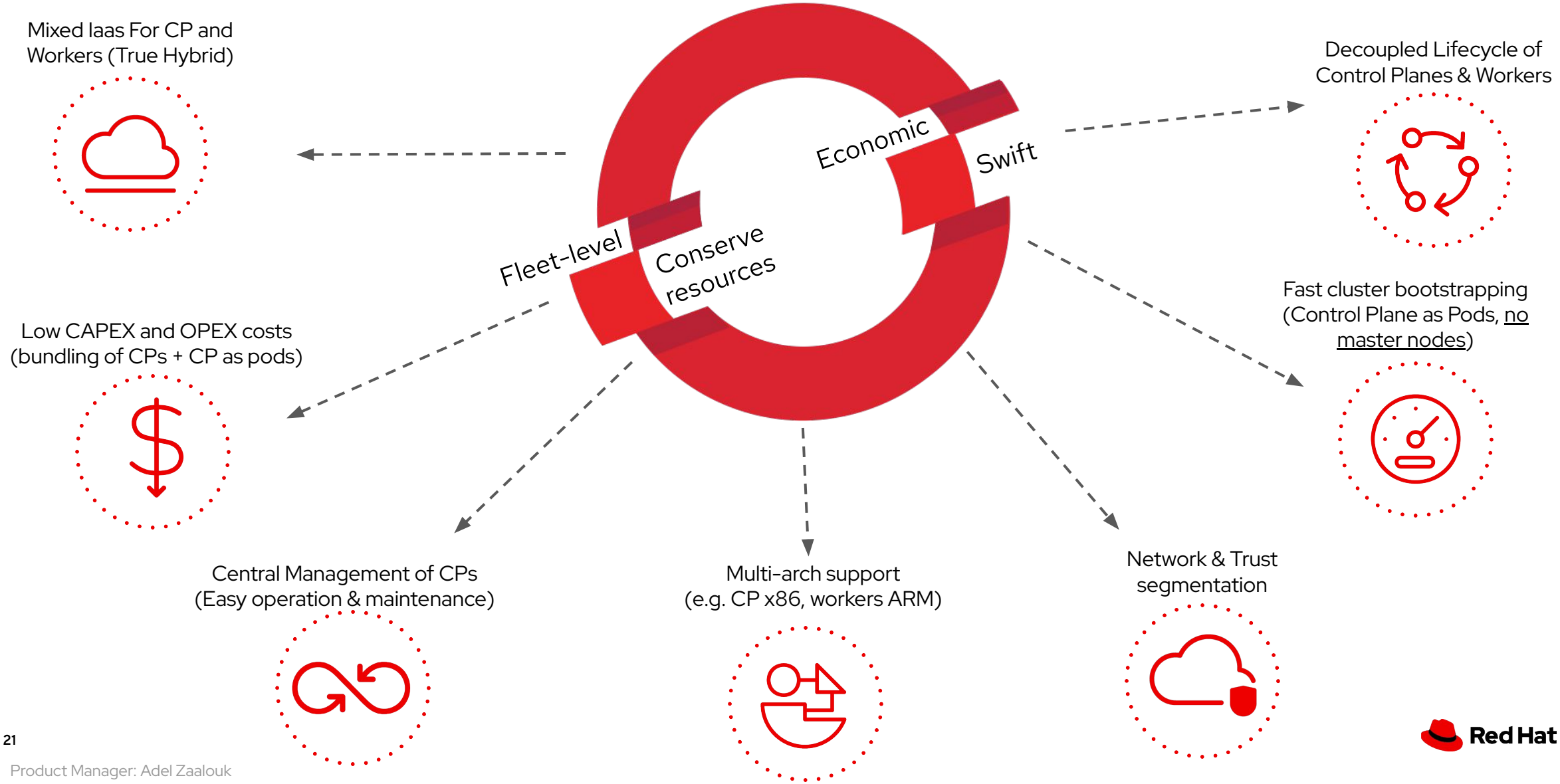
Kubernetes cluster networking with Submariner



Submariner provides cross-cluster network infrastructure for OpenShift by extending the well-known Kubernetes networking objects

Red Hat

HyperShift Brings Externally Managed Control-Planes



Product Manager: Adel Zaalouk

Red Hat

Telco and Edge

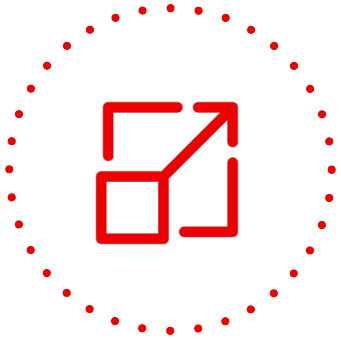
Red Hat

The complexities of 5G CORE

Legacy Integration

Integration or Migration with
4G Core
CNF certification

Simplify mgmt
Convergence of workloads on to a common platform



Advanced Scheduling for Enhanced Performance

PAO, NUMA Awareness,
Topology Scheduler

Optimal resource utilization with enhanced performance

NextGen Hardware

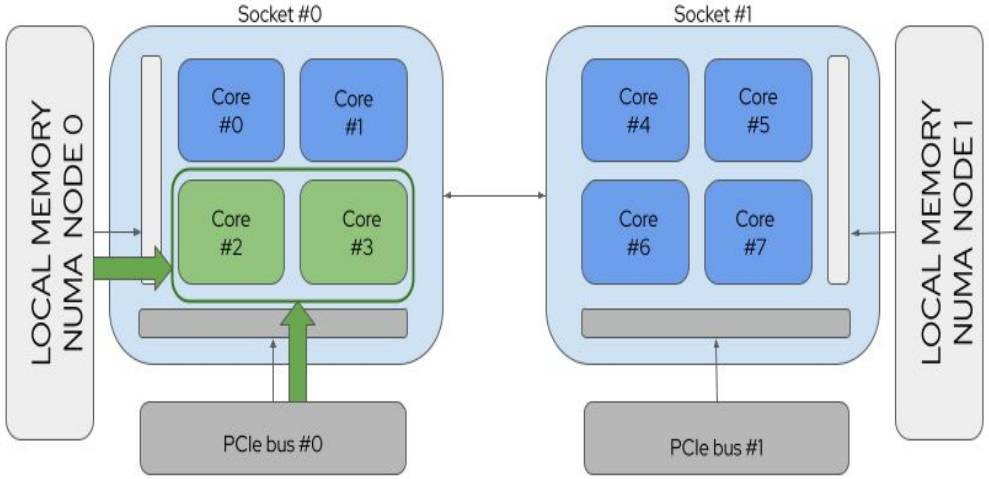
New CPUs, NICs, SmartNICs,
GPUs, FPGA/ASIC, crypto
engines

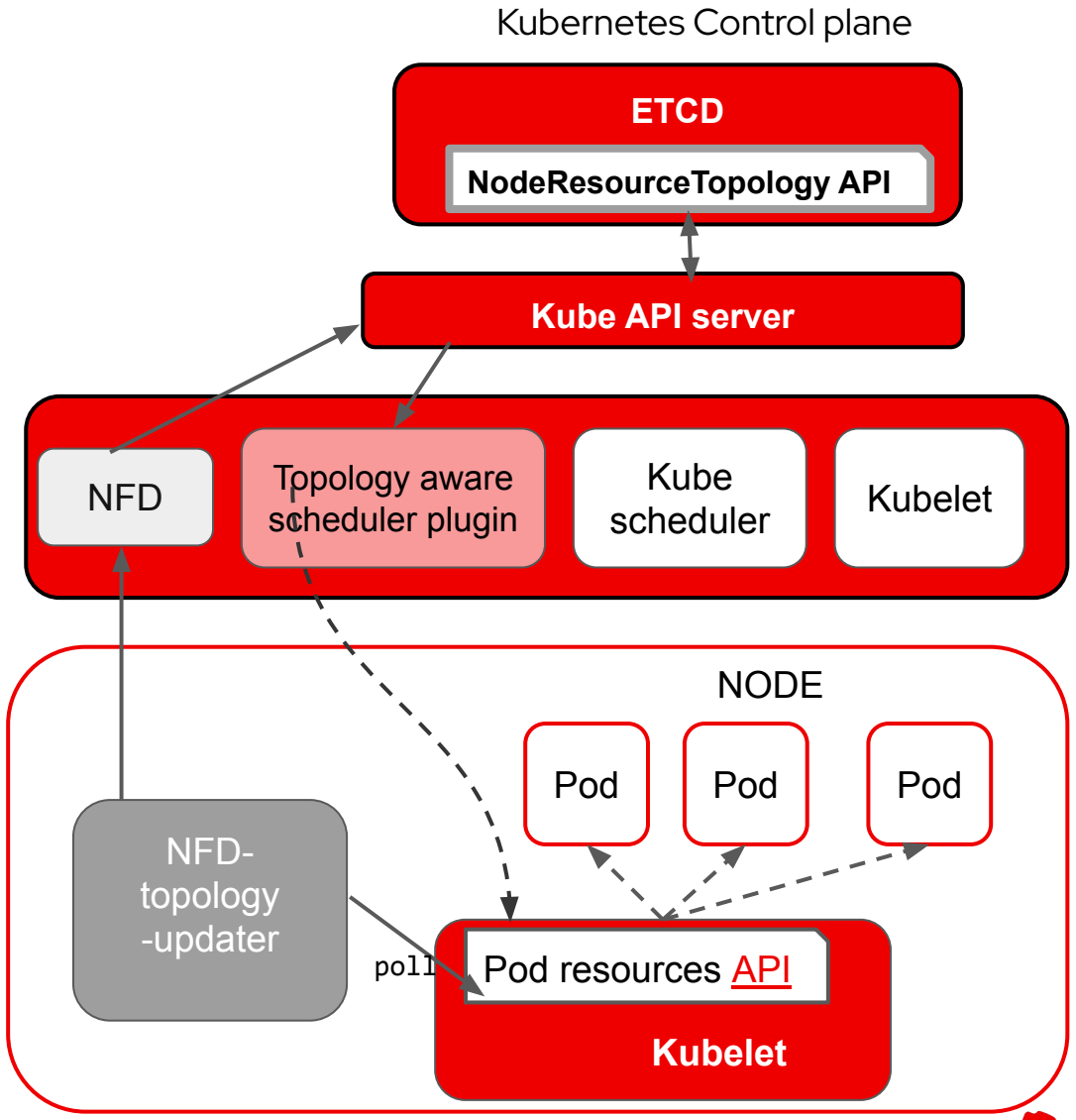
Agile Infrastructure with the latest Hardware [Efficient, Scale, TCO]

Red Hat

Telco 5G Core and Edge

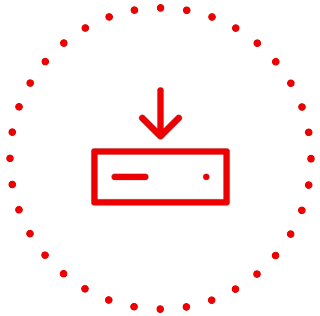
NUMA/Topology Aware Scheduling





Red Hat

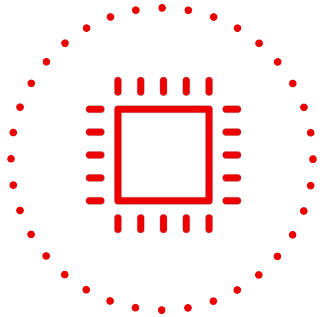
Networking Hardware and Accelerators



OVN Hardware Offload

OVN flow offload with Programmable FPGAs or ASICs
Offload services: firewall, load balancer, QoS and Egress

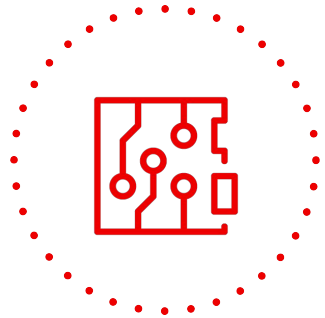
High Performance Networking w/ services



SmartNICs

Infrastructure services including Networking, Storage, AI/ML in a separate cluster on ARM cores in the NIC. Tenant workloads in x86 cluster

Isolation of Tenant and Infrastructure cluster



Accelerators

Crypto engines support inline IPsec and TLS offload
Programmable FPGAs and GPUs with 5G Core and RAN acceleration (GTP, FEC)
Operators to manage Accelerators

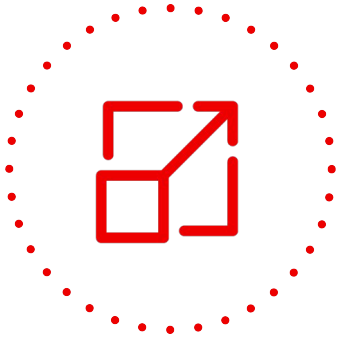
Accelerators to optimize resource usage

The complexities of edge computing/5G RAN

Variability

Different edge sites can vary in network connectivity, space, and power/cooling

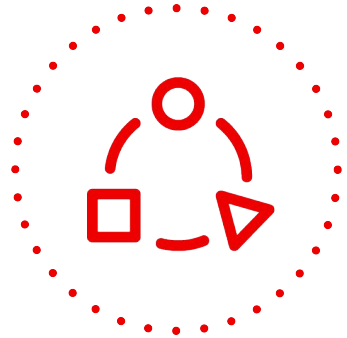
Small Footprint and Optimized infrastructure



Scale

Need to deploy and manage hundreds to thousands sites and nodes

Ease of Management through ACM and ZTP



Appliance like Performance

Nodes are tuned so that RAN realtime workloads can leverage advanced timing and hardware accelerations.

(RAN) Technology Evolution

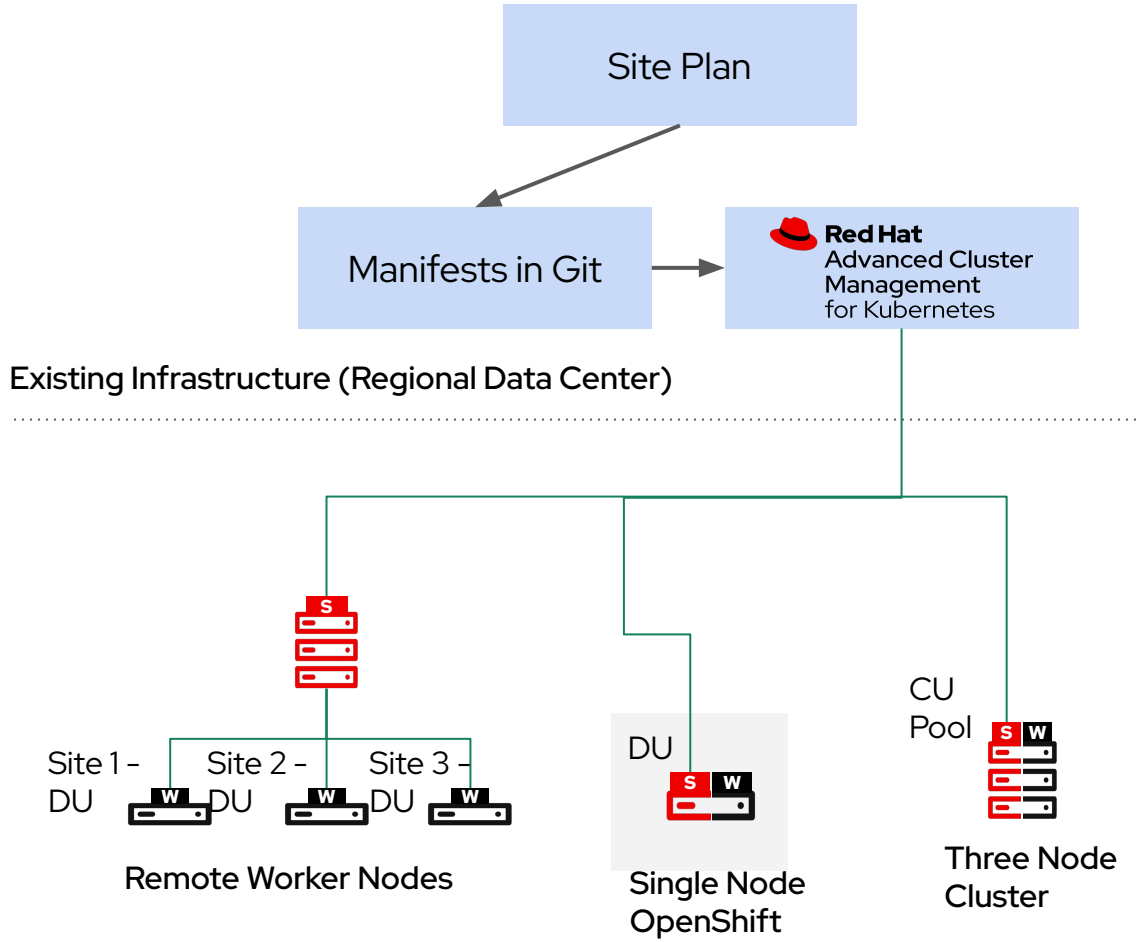
Red Hat

Zero Touch Provisioning

Aimed at **regional distributed on-prem disconnected deployment.**

Enabling customer's **automated** path from **uninstalled infrastructure to application running on an OpenShift cluster.**

- **Increased Scale 2k** SNO nodes provisioned and managed by RHACM
- **Policy Driven Upgrades** Define groups of SNOs that can be upgraded independent of each other for more granular multi-cluster management
- **ZTP Everything** DU, C-RAN Hub, CU, Hub Cluster, additional infrastructure (image repository, NBDE Server, DHCP Server, etc...)



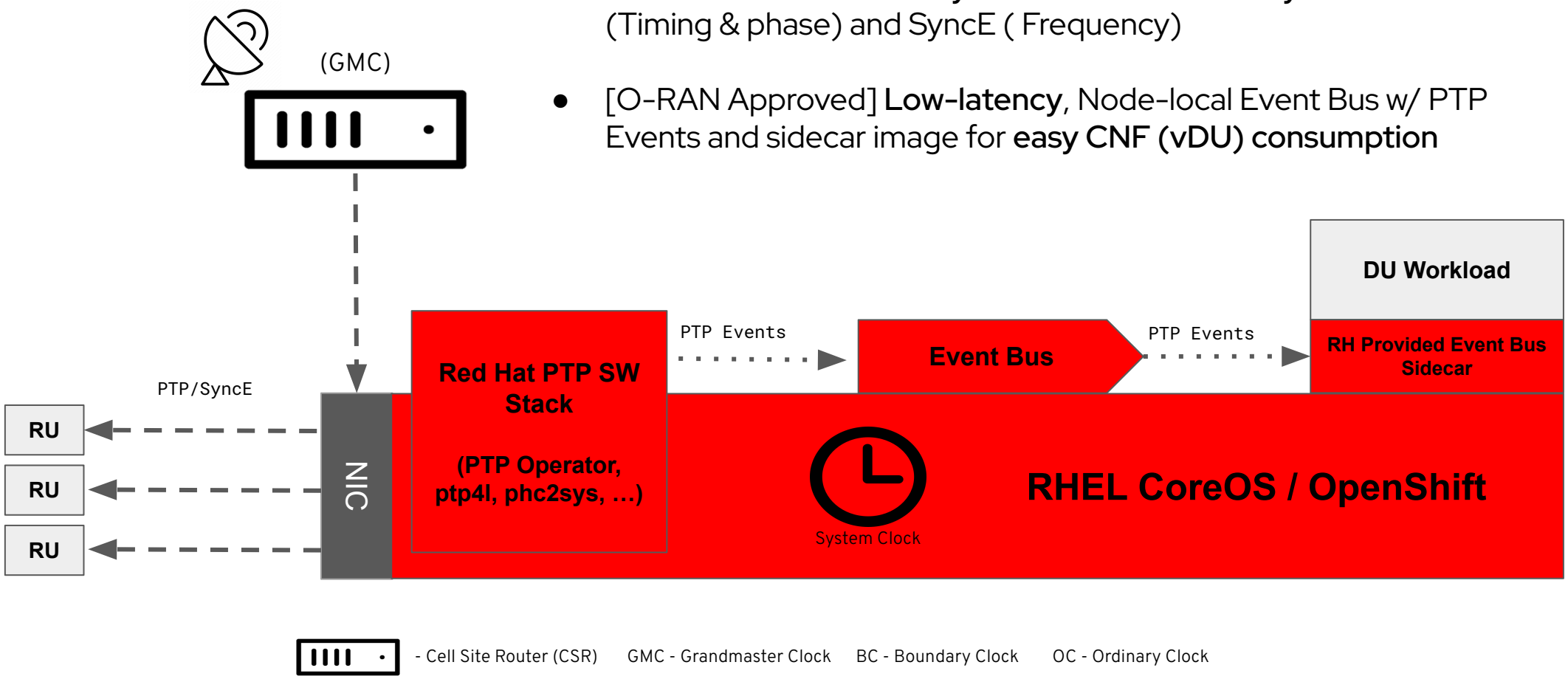
ZTP - Zero Touch Provisioning
DU - Distributed Unit (5G RAN)

CU - Central Unit (5G RAN) - future

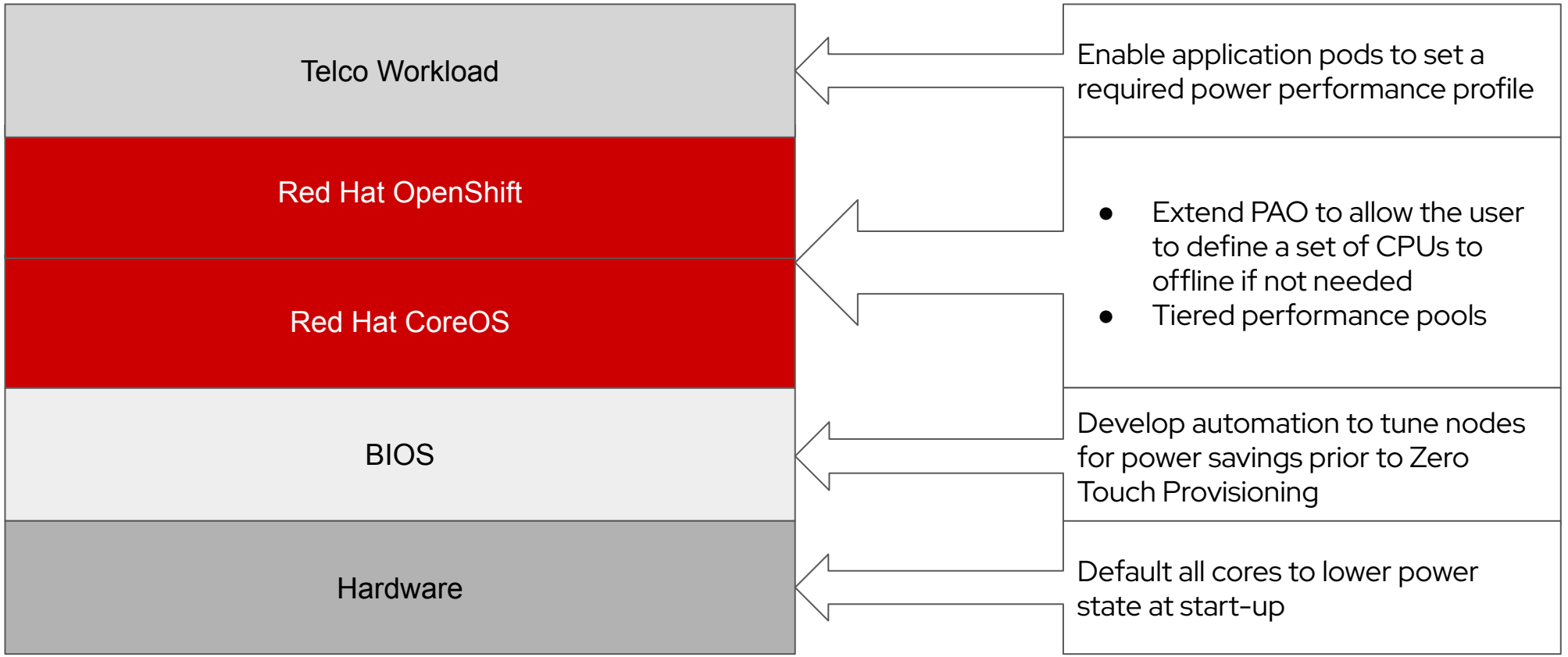
Red Hat

PTP and SyncE for RAN Workloads

- OCP Node as an **Ordinary Clock** or as a **Boundary Clock** with PTP (Timing & phase) and SyncE (Frequency)
- [O-RAN Approved] **Low-latency**, Node-local Event Bus w/ PTP Events and sidecar image for **easy CNF (vDU) consumption**



Power Optimizations at the Telco Far Edge



Managed Cloud Services

Red Hat OpenShift Everywhere

A consistent platform no matter how or where you run

Red Hat OpenShift Cloud Services

Start quickly, we manage it for you

Red Hat OpenShift Service on AWS

Azure Red Hat OpenShift

IBM Cloud
Red Hat OpenShift on IBM Cloud

Cloud native offerings jointly managed by Red Hat and Cloud Provider

Google Cloud

Red Hat OpenShift Dedicated

Managed by Red Hat

Red Hat OpenShift Container Platform

You manage it, for control and flexibility

Red Hat OpenShift Container Platform

On public cloud, or on-premises on physical or virtual infrastructure

Red Hat

High Level Managed OpenShift

Unified Experience

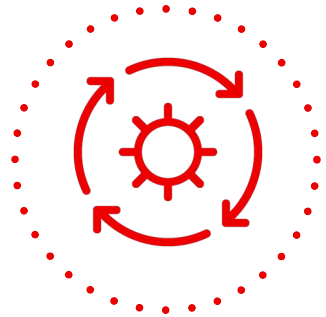
Allow users to create all Managed OpenShift clusters from one single location

Simplicity of operations

Security Everywhere

Achieve compliance with more industry certifications such as HIPAA and PCI as well and Gov certifications like FedRAMP HIGH

Offer more flexibility in the kinds of workloads that can be run



Platform Consistency

If it runs on OCP it should run on Managed OpenShift

Reducing the barriers to adopting Managed OpenShift

High Level Managed OpenShift

Expanded choice

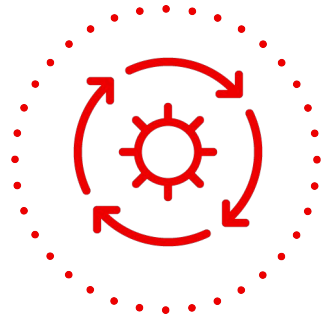
Allow customers more options when choosing worker nodes to address many different workloads or budgets. Spot instances, GPU, Wavelength, AMD, dedicated

Meet the customer where they are

Security Everywhere

Support BYO Key for KMS and enable EBS encryption

Enable further security options for our sensitive customers



Platform Efficiency

Only run the platform when you need it. Pause it (and payments) when you don't.

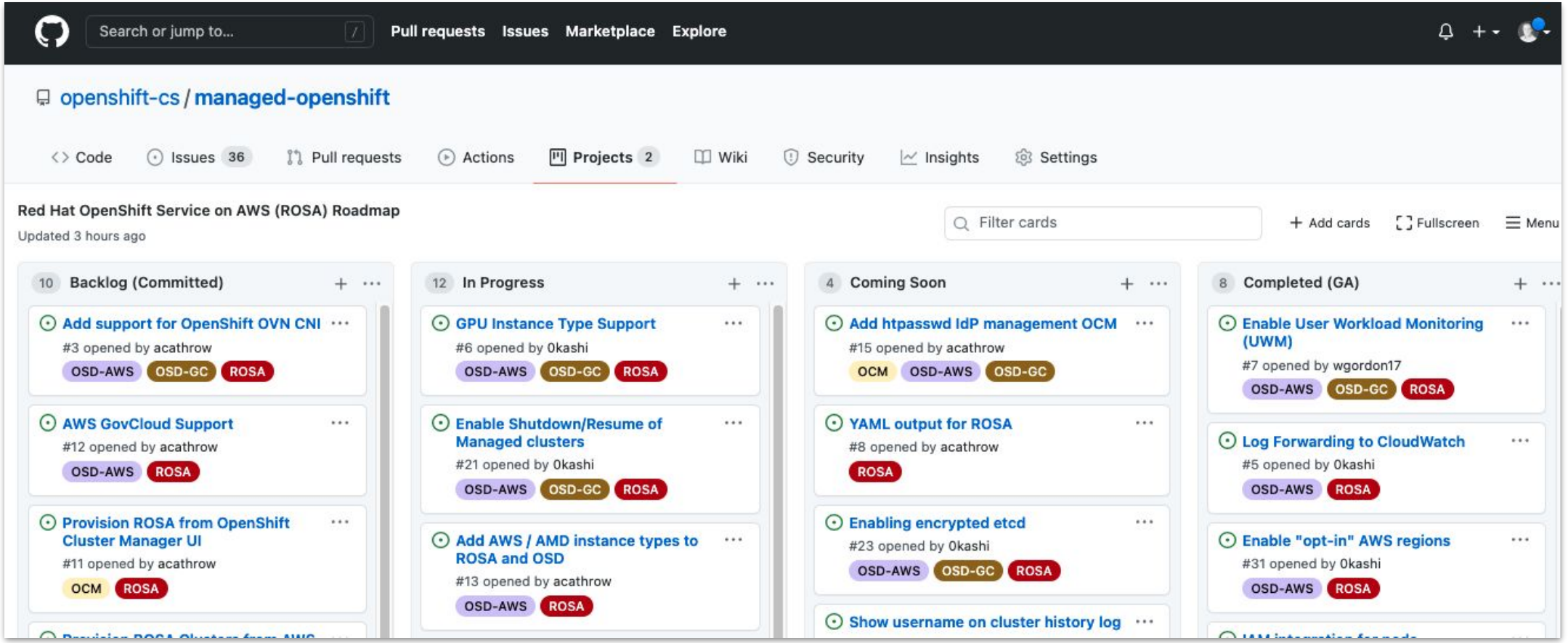
Reduces the barriers to adopting Managed OpenShift

Red Hat

Managed Services

Public Roadmaps for OSD, ROSA and ARO

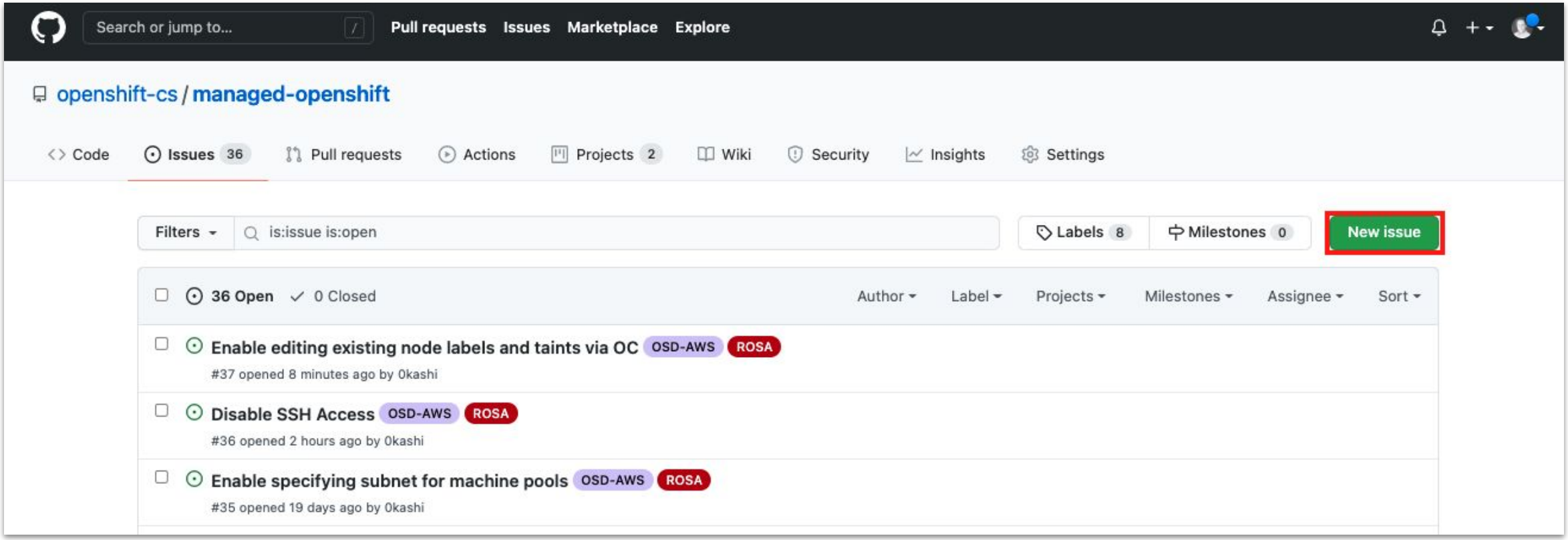
OSD: red.ht/osd-roadmap **ROSA:** red.ht/rosa-roadmap **ARO:** red.ht/aro-roadmap



Red Hat

Managed Services

RFE Tracking



Red Hat

Core, Platform and Developer Tools

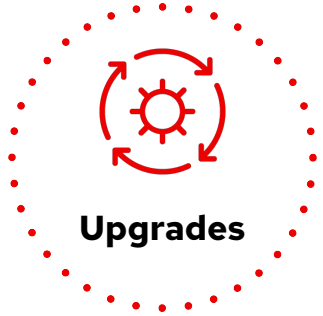
Installation, Updates and Provider Integration

- Add more platforms, more regions, more instances

Enable Hybrid Cloud

- Bootable installer image
- Factory installs of OpenShift
- Externally managed control planes (HyperShift)

Simplify onboarding



- Starting 4.10 (to 4.12), EUS upgrade requires single worker reboot
- Zone awareness during upgrades
- Targeted upgrade blocking

Mitigate risk

Alibaba Cloud

Azure Stack Hub

IBM Cloud

NUTANIX

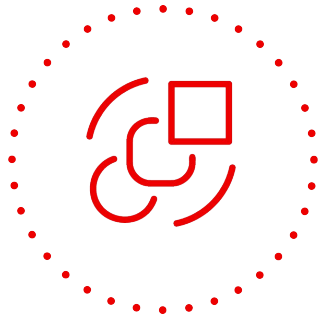
Red Hat

Compute

Platform

- Enable Arm
- More IBM P/Z innovations
- Mixed CPU chip architecture
- DPU/IPU integration with unique architectural approach

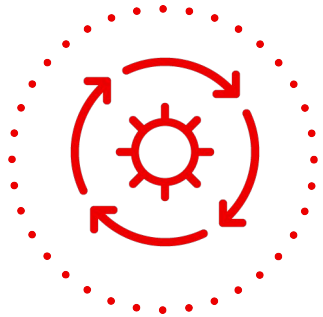
Enable new workloads and reduce TCO



Consistency

- Enable pluggability with cloud native solutions: KMS, DNS, LB
- Cert-manager and improved lifecycle management of certificates

Enables Hybrid Cloud and accelerates projects



Experience

- A shift to self-driven control plane with automated scaling, backups and DR of the control plane
- Ability to customize RHCOS

More choice and flexibility to meet standards and compliance

Red Hat

Enabling Workloads on OpenShift

Clusters can install with optional operators at **day0**.
Global operator model with granular permission management and **automatic failure recovery**. Expanded functionality for Operators: **reusable libraries**, custom scaffolding, additional languages (e.g. **Java**) and underlying libraries support. Scaffold build pipelines in a **git-friendly** way.
Namespace-scoped Helm repositories. Tested and certified Helm Charts from partners. Helm CLI support in `oc` client.

More functionality out of the box

Specialized scheduler for **next generation workloads** on Openshift.
Secondary scheduler operator to onboard new schedulers.
Multicluster Application Dispatcher operator to prioritize, queue and dispatch jobs to multiple clusters.

Deploy AI/ML or HPC workloads

Improved experience for **custom and disconnected** operator catalogs.
Streamlined disconnected registry mirror.
Factory installs of OpenShift for reduced startup time.

Customers receive updates faster

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OpenShift on Bare Metal

Advanced Host Network Config

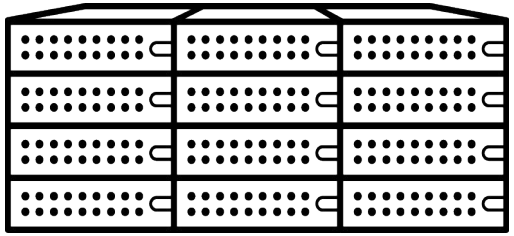
Bonds, VLANs and static IPs.
No DHCP required.
Advanced network config via IPI on day 1 and day 2.

Infrastructure adapted to your network

Hybrid Clusters

Mix bare metal and VM nodes.
Virtualized control plane and physical workers.
Expand non-bare metal clusters with bare metal nodes.

Reduced footprint and optimized resources



Metal^3

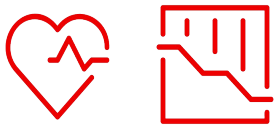
Bootable Installer

Bootable ephemeral installer.
Create cluster zero easily.
For on-prem or any cloud provider.

Faster onboarding of platforms

Red Hat

OpenShift Sandboxed Containers



Health Metrics

Provide console views for health-metrics and Insights on specific Kata Containers components.

Swift Root-Cause Analysis

Node Feature Discovery

Quickly Identify whether your cluster nodes/environment are eligible for the installation of the Kata runtime.

Low-friction Installs Lower Time To Kata (TTK)

Runtime Admission Control

Isolate your untrusted workloads during admission.

Enforce or exempt workloads to/from running in sandboxed runtimes (e.g., Kata Containers).

Focus Less on HOW to Isolate, More on WHAT to Isolate

SR-IOV with DPDK

Enables running Cloud-Native Network Functions (CNFs) with sensitive network requirements.

Accelerate your Data-Plane with Tight Isolation

Red Hat

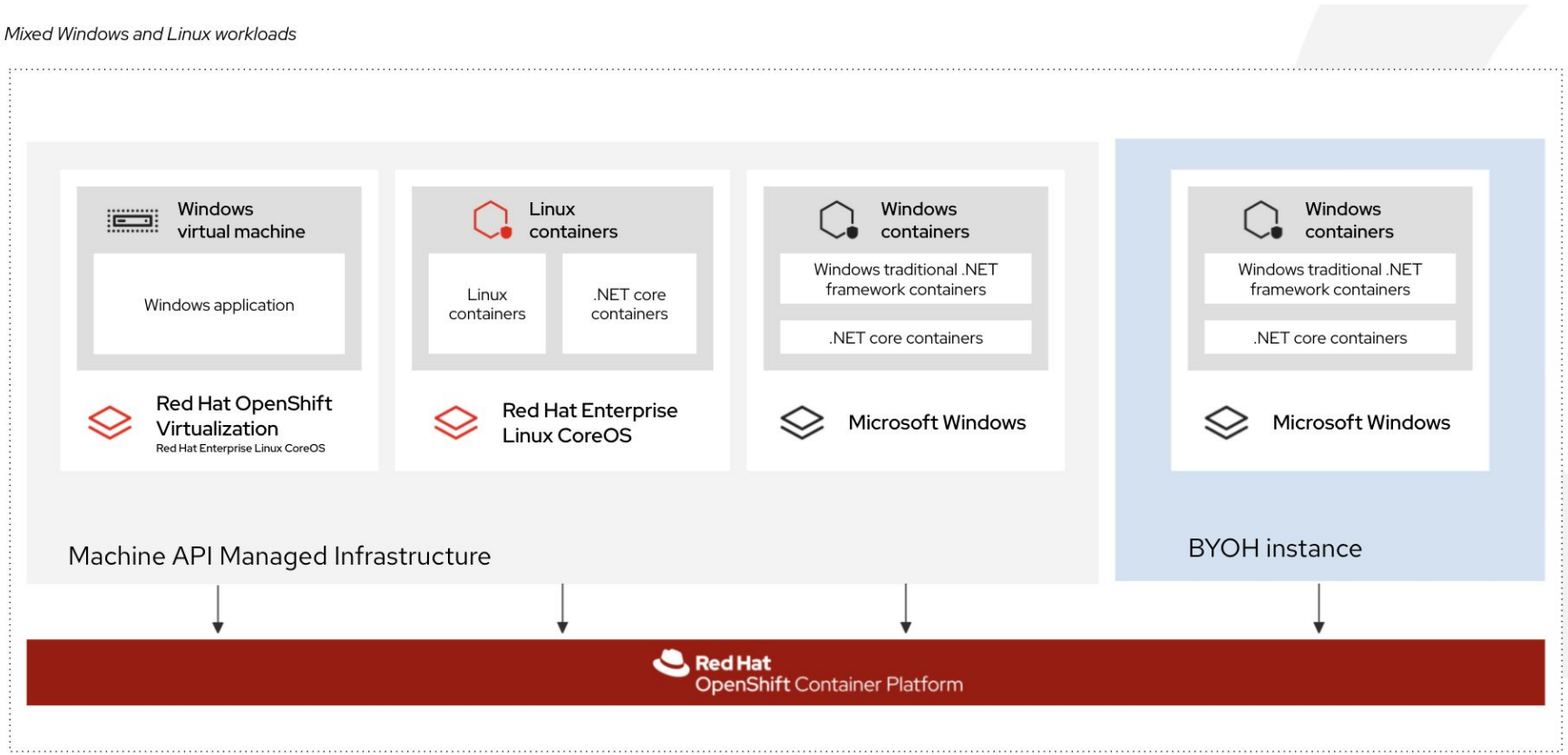
Windows updates

Platform Consistency

Windows nodes will move to Containerd as the runtime, and CSI for storage, thus future proofing consistency and application portability for Windows

Unified Experience

Health Management of Windows Nodes with self healing will allow for better resiliency of the Windows nodes (e.g. recovering from a Kubelet crash)



Bring Your Own Host GA Announcement: Link

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Core, Platform and Developer Tools

What's next for the OpenShift Console?

New Hub/Managed Cluster Intelligence

- OCP will update to a **fleet experience** when the management hub is enabled
- New lightweight **multi-cluster operator** enhances OCP screens via dynamic plugins
- **Fleet-wide auth** for managed clusters

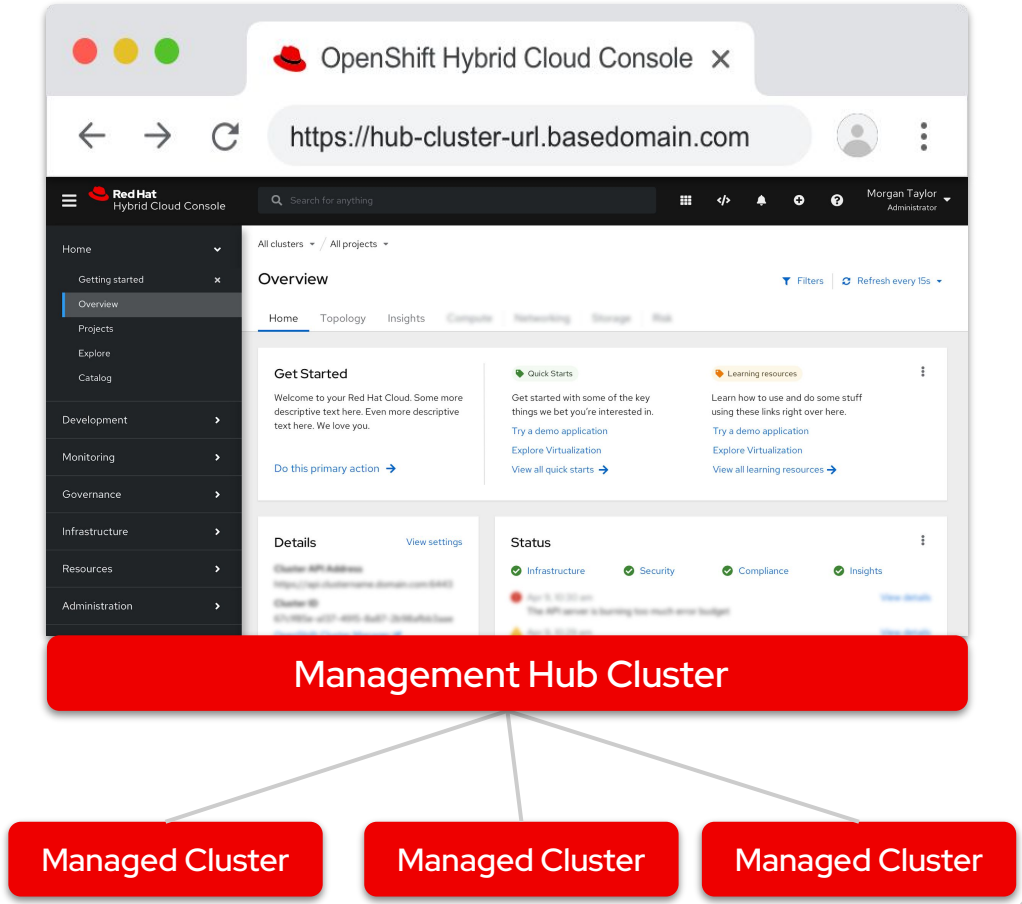
Unified OpenShift Platform Plus UX

- **ACM** is just the start. **ACS, Quay, Log Mgmt**, and others will integrate with the OCP Console via dynamic plugins in 2022
- **Dynamic plugins** will enable partners & customers to create their own native integrations

Unified Experience

Security Everywhere

Platform Consistency



OCP: OpenShift Container Platform
OPP: OpenShift Platform Plus

ACM: Advanced Cluster Management
ACS: Advanced Cluster Security

Quay: Container Registry
ODF: OpenShift Data Foundation

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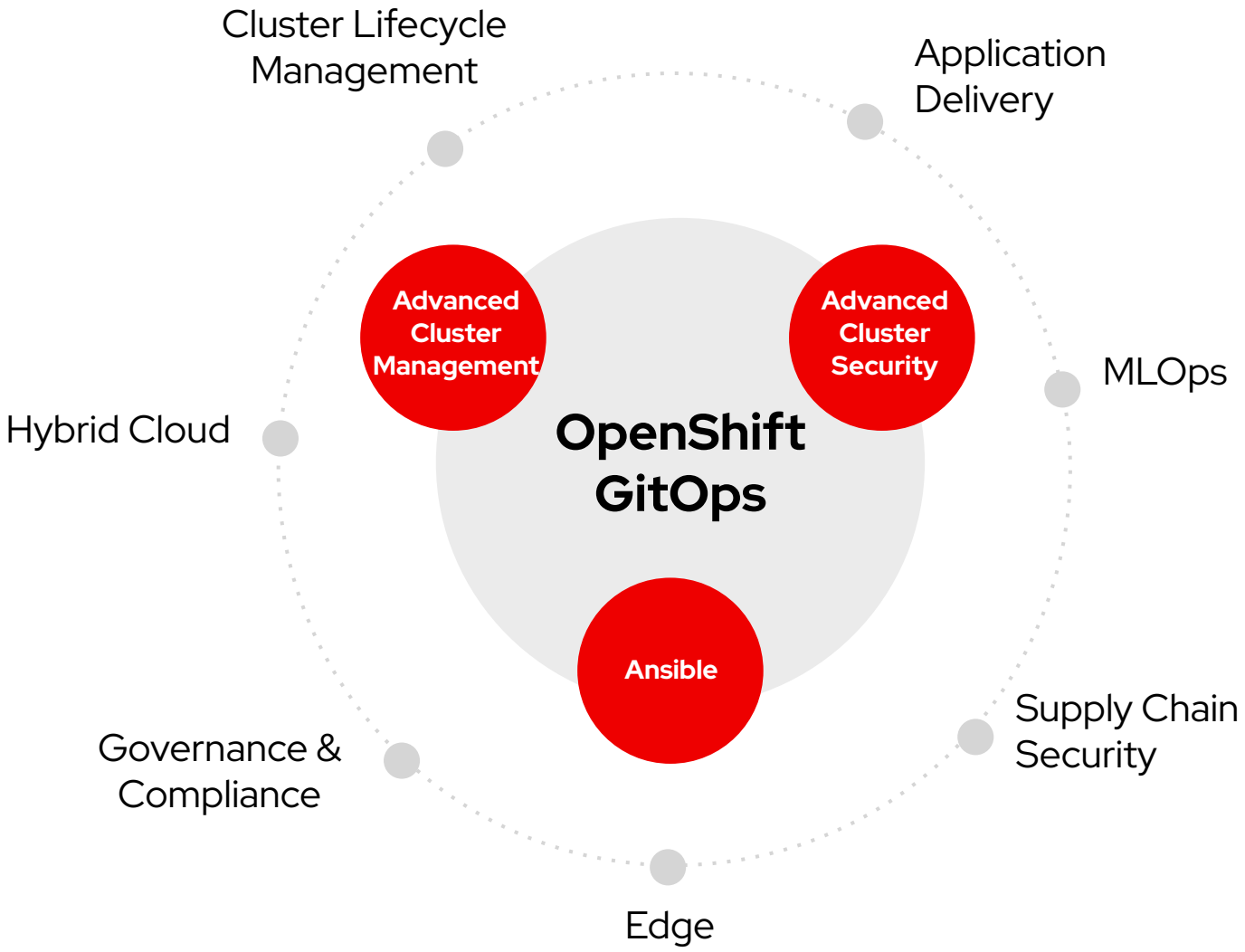
Core, Platform and Developer Tools



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CI/CD & GitOps

OpenShift Pipelines

OpenShift GitOps

Unified Experience

Enable GitOps workflows for managing CI, Approval workflows and concurrency control

Declarative workflows for Helm, automated bootstrapping of Argo CD and GitOps workflows

Standardize GitOps workflows

Security Everywhere

Verifiable and signed pipelines for provenance Image signing and verification

Secret management guidance, HashiCorp Vault integration

Secure software supply chain

Platform Consistency

Tekton Hub on cluster for custom Task catalogs Extended pipeline history and log retention

Argo CD multi-tenancy alignment with Kubernetes, Improve cluster config management

Improved operational experience

OpenShift Serverless

Unified Experience

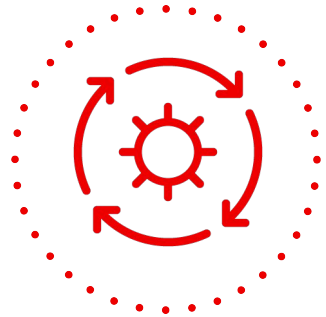
Integration for platform services, Elevated Serverless Function experience. Event sources to cover the breadth of applicability

Enhance developer experience for Event Driven solutions

Security Everywhere

End to End encryption
Multi-Tenancy

Reduced exposure and risk



Platform Consistency

Serverless part of the OpenShift
Default deployment for stateless workload
Creation of apps in “cluster agnostic” environment

Increased productivity

OpenShift Service Mesh

Unified Experience

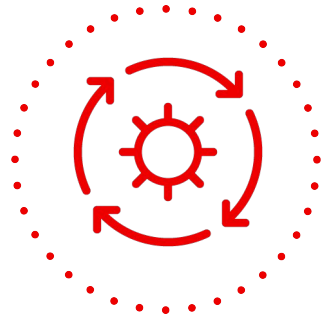
A platform integrated service mesh - including operator installation, observability and visualizations, networking, API management,and more.

Save time - solving integrations for you!

Security Everywhere

Secure traffic and manage service-level policies consistently across a zero-trust multi-tenant, environment.

Reduced exposure and risk across your network



Platform Consistency

A consistent platform with Istio service mesh across clusters, cloud providers, regions, and infrastructure types.

Reduce complexity with a consistent platform experience

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OpenShift Virtualization

Unified Experience

Improved visualization of individual VMs

Overall resource utilization and intelligent diagnostics

Data protection (via OADP)
Disaster Recovery (via ACM)

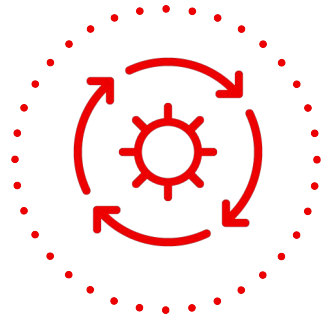
Manage and protect VMs at Scale

Security Everywhere

Improved integration with Compliance Operator and Advanced Cluster Security

Least privilege principles

Enhanced security compliance of VM



Platform Consistency

More Public Cloud & Bare Metal providers

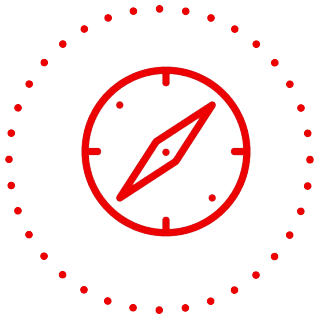
vGPU support
SNO resource optimizations
Telco VNF validation program

Warm migration (RHV) and basic migration (OSP)

OpenShift Everywhere

Red Hat

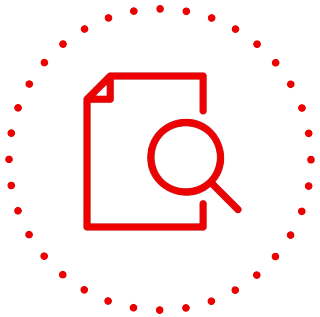
Migration Toolkit for Applications



Migration Guidance

Help organizations safely migrate and modernize their application portfolio to leverage OpenShift

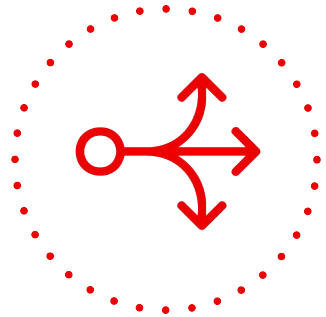
Ease OpenShift adoption



Gather Insight

Enable adoption leads to take informed decisions and make the migration and modernization process measurable and predictable

Reduce risks



Extended Scope

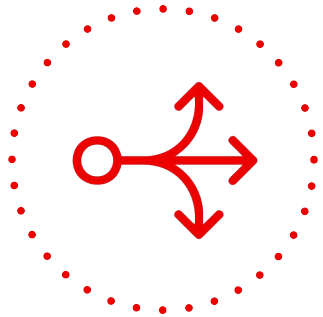
Fully integrated toolkit leveraging multiple Open Source tools with a seamless user experience

Provide value on each stage of adoption

Migration Toolkit for Containers

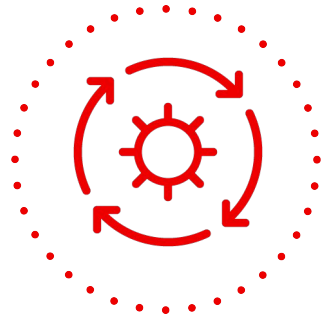
Migrating from OCP3 to OCP4

Always improving and reducing the effort of migrating your applications at scale to OpenShift 4.



Migrating from on-premise to cloud

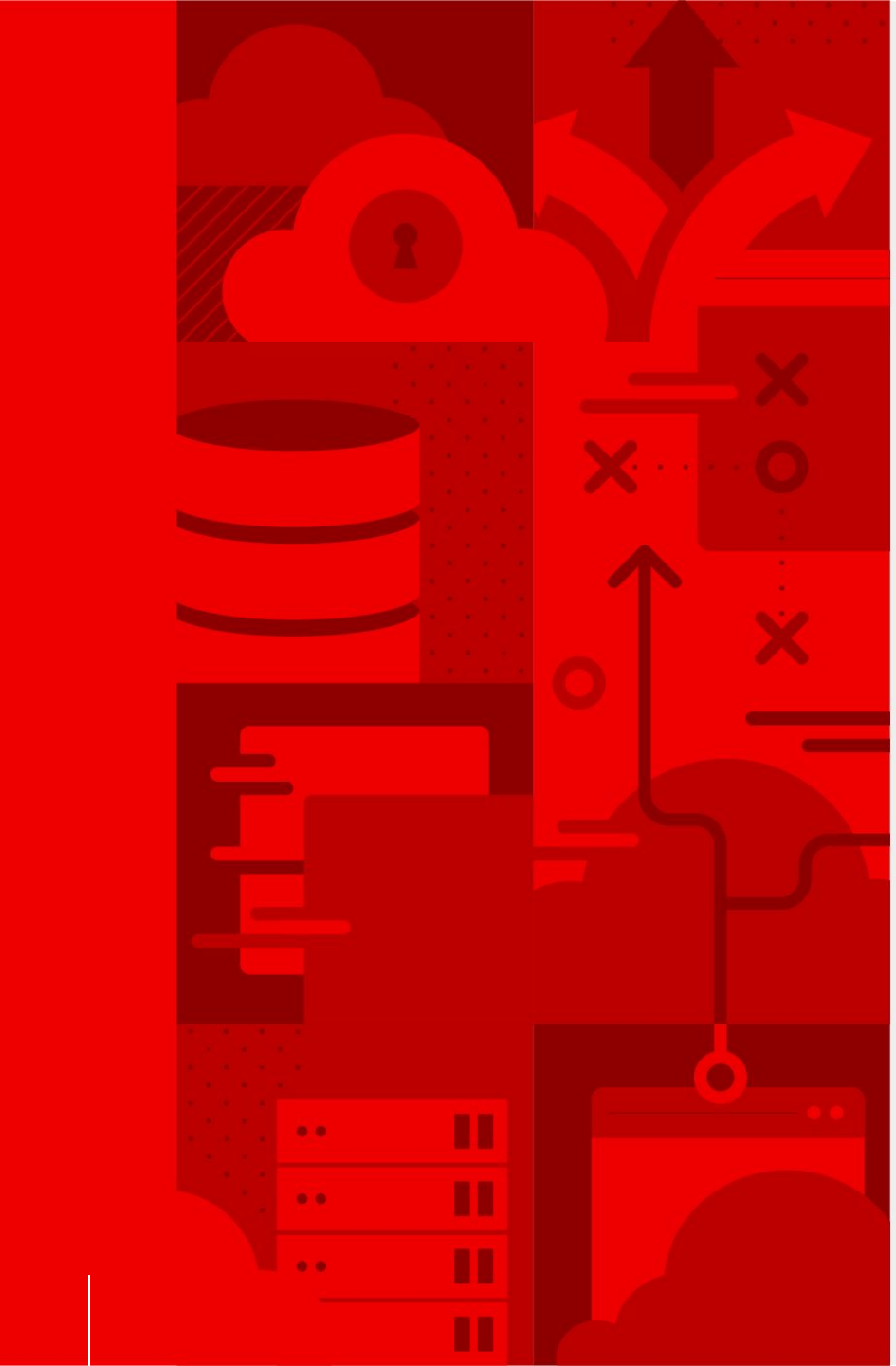
Supporting migrations from on-premise to cloud solutions: ARO and ROSA



Storage migration

Supporting in-place migrations of your existing storage to OpenShift Data Foundation

Adopt with ease Red Hat's latest OpenShift technologies



Thank you

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Red Hat is here to help

Responding to COVID-19 requires collaboration, transparency, and the free exchange of expertise.

Ways to contact us

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