

What's Next in OpenShift

Q4 CY 2025

OpenShift Product Management

Speakers



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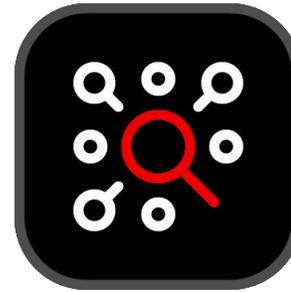
Four key trends driving the industry



Virtualization



AI



Developer experience



Data proximity and
sovereignty

The Challenges

Application Modernization



~95%

of IT decision makers believe **app modernization is essential** for their organization's success

Source: [The State of Application Modernization](#)

Rise of Generative AI



80%

of Enterprises will have deployed **Generative AI-Enabled Applications** by 2026

Source: [Gartner](#)

Developer Productivity



65%

of **developer time is wasted** without platforms

Source: [The New Stack](#)

Software Supply Chain Security



↑742%

Average **annual increase in software supply chain attacks** over the past three years. **45%** of organizations will experience attacks. **Is a matter of when, not if.**

Source: [Sonatype](#)



The platform for all your workloads

Trusted

to reduce risk

Comprehensive

to improve productivity

Consistent

to increase flexibility

Virtualization Platform



Container Platform



Application Platform



AI Platform



Physical



Virtual



Private cloud



Public cloud



Edge

Red Hat is recognized as a Leader in the 2025 Gartner® Magic Quadrant™ for Container Management for the third year in a row

Figure 1: Magic Quadrant for Container Management



“By 2028, 95% of new **AI** deployments will use Kubernetes, up from less than 30% today.”

Red Hat is a *Leader* in the 2025 Gartner® Magic Quadrant™: Cloud-Native Application Platforms for the second year in a row

Figure 1: Magic Quadrant for Cloud-Native Application Platforms



Source: Gartner, "Magic Quadrant for Cloud-Native Application Platforms," August 2025



The Road Ahead

Accelerate AI

AI / ML

AI Ecosystem

Modernize Apps and Infrastructure

Developer productivity

OpenShift Virtualization

Secure Apps and Platform

Trusted Supply Chain

Zero Trust

Manage at Scale

Multicluster management and governance

Cloud Services & Edge

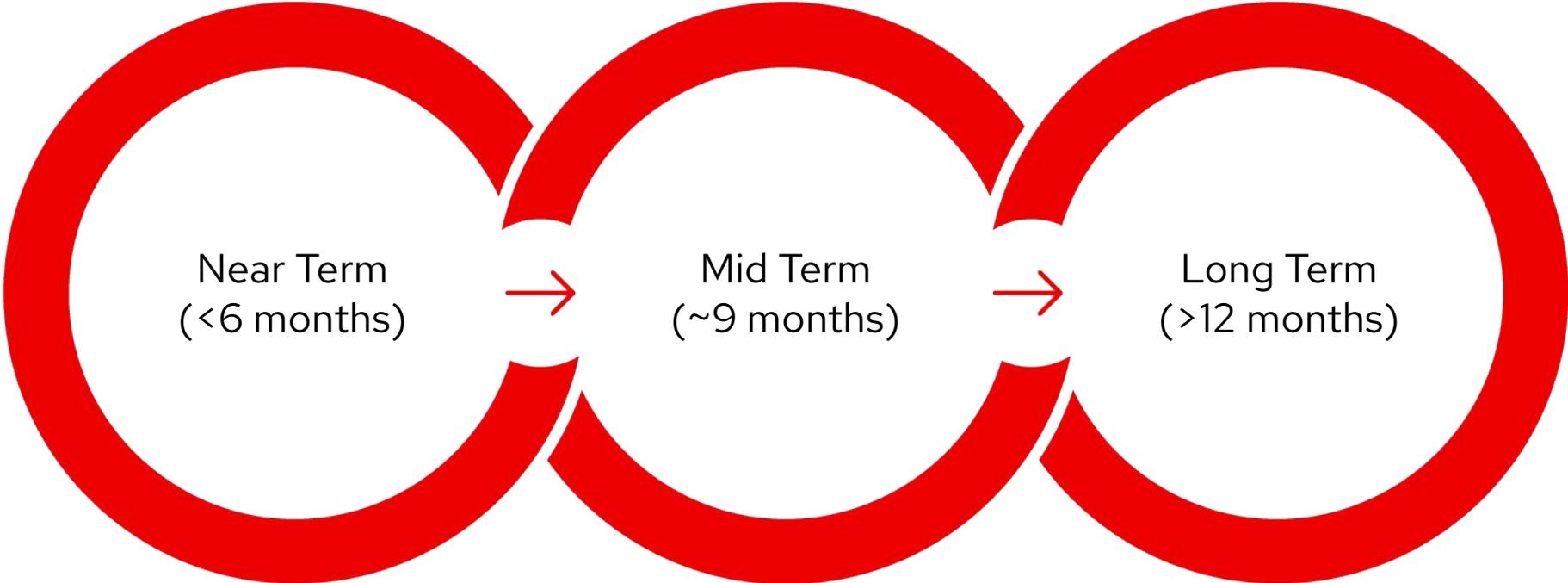
Intelligent OpenShift

OpenShift Lightspeed

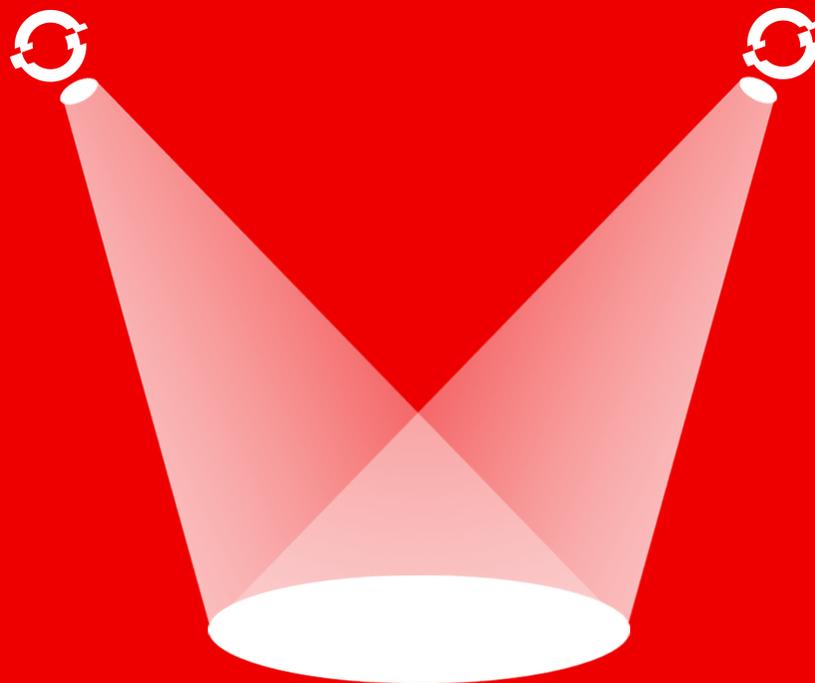
Applied AI



Roadmap Terminology

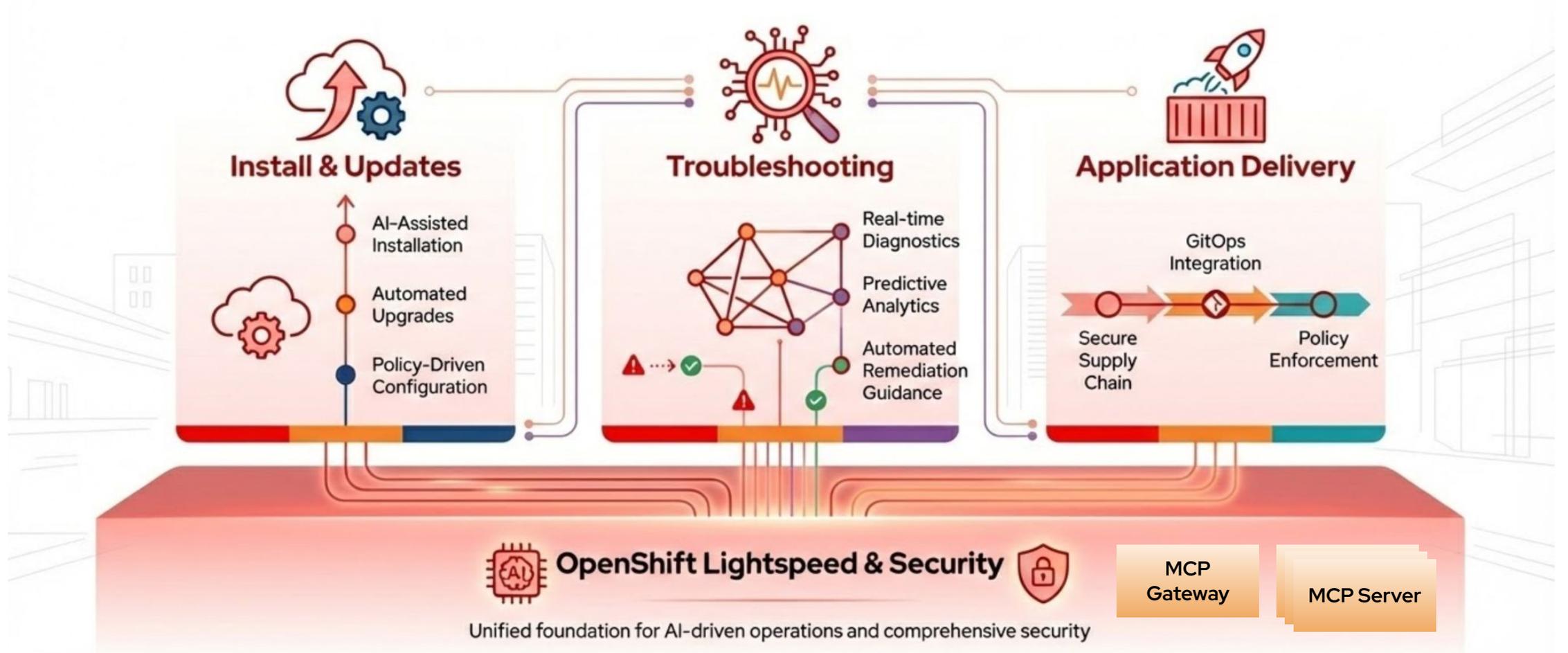


Spotlight Features



Intelligent OpenShift

Boost your productivity and operational efficiency



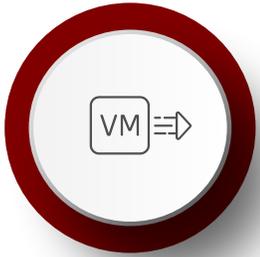
Zero Trust, Secure by Design

Spotlight features

- ▶ Protect data in use with **Confidential Computing**
- ▶ **Zero-trust Workload Identity Manager** for secure service-to-service comms
- ▶ Prepare for future threats with **Quantum-safe cryptography**
- ▶ **Secure sensitive data** in etcd with envelope encryption
- ▶ **AI-driven risk analysis** for user-specific context
- ▶ Vulnerability reporting for **VMs**
- ▶ **Automated governance** for drift prevention
- ▶ Secure your **software and AI bill of materials**
- ▶ **Image mode** for RHEL



Roadmap Themes OpenShift Virtualization in CY26



Ease of Migration

- Live migration of VMs and Storage across clusters (GA)
- GA of Storage accelerated migration to OpenShift
- Migration from Hyper-V
- Self Guided Migration assistant



Simplified & Scaled Administration

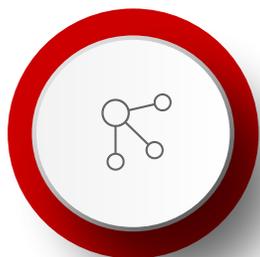
- Extend single cluster experience to multiple clusters (GA)
- Guided networking configuration
- Enhancing the UX of VLAN network access
- VM Right Sizing operations
- Key interop and Chaos testing for environments (ACM, Virt, HCP, UDN)



Storage & Data Protection

- Incremental backup with Change block tracking
- Regional-DR disaster recovery using native storage replication
- File level restore
- Provisioning, performance, and scale interop with 3 tier Storage Partners

Roadmap Themes OpenShift Virtualization in CY26



Networking

- Localnet UDNs, Secondary layer 2 UDNs, providing multiple overlay networks
- BGP for routed ingress to VMs and EVPN for access to datacenter fabric
- Single Stack IPv6
- Preserve VM IPs during migration and request specific IPs during VM creation



Core Virtualization

- VM High Availability recovery time <1 Min
- Live Migration with vGPU, RHEL 9/10 support
- Confidential VMs



Edge to Cloud

- Networking enhancements for AWS, GCP
- Self-certification testing improvements for storage vendors



Security and Performance

- VM vulnerability reporting in RHACS
- Compliance Operator for Hardened OpenShift Virtualization
- Zero Trust Workload Identity Manager Virt support
- Database perf InstanceType, Storage perf, and RHEL 10 performance evaluation

Core platform

Product Managers: Ju Lim, Ramon Acedo Rodriguez, Marcos Entenza Garcia, Duncan Hardie, Linh Nguyen, Gil Rosenberg, Gaurav Singh, Subin Modeel, Mark Russell, Gregory Charot, Michal Zasepa

Install Experience: What's Coming

Infrastructure Flexibility & Hybrid Cloud

Dedicated & Specialized Infrastructure

- ▶ Support for Dedicated Hosts (AWS & Azure)
- ▶ OpenShift on Oracle Database Appliance
- ▶ OpenShift on Roving Edge Infrastructure

Hybrid & Edge Deployments

- ▶ Bare metal as a Service (BMaaS)
- ▶ Bare metal Nodes to OpenShift vSphere clusters
- ▶ Bare metal nodes to OpenShift Nutanix clusters

Bare Metal Capabilities

- ▶ Metrics and logs from hardware with Red Fish support
- ▶ Extend the BMaaS functionality (e.g. GPU discovery)
- ▶ Scaling of Bare Metal Operator and BMaaS

Advanced Platform Features

- ▶ VCF9 support (parity with vSphere 8) and OpenShift Zones support with Host Groups
- ▶ Multi-Prism Central Failure domains and VM-VM Anti-Affinity Policies (Nutanix)

Red Hat OpenStack Services On Openshift (RHOSO)

- ▶ Kernel Live patching for near zero downtime updates
- ▶ AI Assisted troubleshooting and upgrade support

Networking & Connectivity

Network Architecture

- ▶ Dual Stack enablement on AWS, Azure and GCP
- ▶ IPv6 Single-Stack for OpenShift on vSphere
- ▶ Customer managed DNS support across AWS, Google Cloud, and Azure

Private & Secure Networking

- ▶ Private Google Access to GCP endpoints
- ▶ Nodes' disks with Private Access on Azure
- ▶ Static IP assignments on Nutanix
- ▶ Google Cloud Placement Policies

Network Configuration

- ▶ Adding support for configuring ToR switches
- ▶ OVN control-plane vs. data-plane skew within z stream

Security & Hardware

Encryption & Key Management

- ▶ Support user managed key for OpenShift Registry at Install Time (AWS)
- ▶ Support Using Customer Managed KMS keys to Encrypt S3 for Ignition and Internal Registry (GCP)

Government & Regulated Environments

- ▶ Support OpenShift deployments into Azure Gov Secret US East region
- ▶ European Sovereign Cloud Regions in AWS

Hardware Accelerators

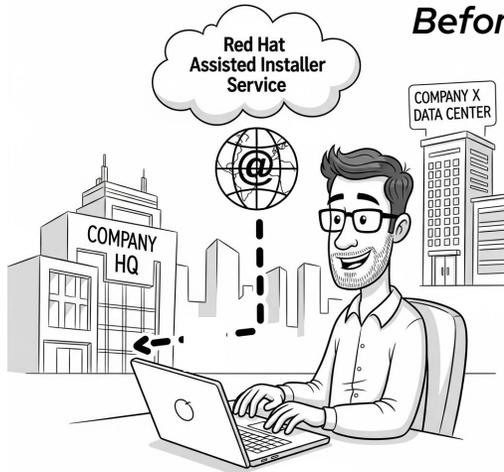
- ▶ Support for NVIDIA H100 and H200 machine series (Azure)
- ▶ Support N4A Machine Types (GCP)



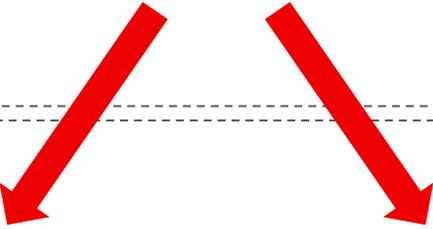
On-premises

OpenShift Virtualization Lifecycle Management For Disconnected Clusters

Before going to your air-gapped data center



Download the ISO image with OpenShift and pre-selected operators



Boot all servers using the downloaded ISO and install an OpenShift Virt cluster

Upgrade your OCP cluster using the ISO (*)

When you are in your air-gapped data center



Simplified Day-1 (an installer with UI) and Day-2 air-gapped cluster management without an external registry.

Short-term and mid-term plans

- ▶ Day-1 operations:
 - OpenShift Virtualization cluster installation via UI
- ▶ Day-2 operations:
 - Upgrade your OpenShift cluster (*)
 - Add a new node (*)

Long-term plan

- ▶ Support Multi-Arch
- ▶ Provide ISO for other use cases



(*) - only for clusters which were installed from the ISO

Hosted Control Planes (HCP): What's Coming

Infrastructure & Hybrid Cloud

TOP PRIORITIES

- ▶ ARO-HCP GA
- ▶ All new ROSA clusters using [HCP by default](#)
- ▶ Self-managed Azure HCP
- ▶ Non-bare metal HCP (vSphere/Nutanix/Hyper-V. etc.)

Dynamic Scaling & Management

- ▶ Dynamic scaling for HCP
- ▶ Enable autoscaler from/to zero
- ▶ AWS Spot Instance Support
- ▶ Allow node-level management in HyperShift NodePools
- ▶ AutoNode (based on Karpenter) in ROSA-HCP and ARO-HCP
- ▶ Karpenter for self-managed HCP in AWS

Lifecycle Management

Observability & Debugging

- ▶ Enhanced debuggability for cluster NodePool failures and installation failures
- ▶ Enhanced control plane metric reporting
- ▶ Proactive metrics for connectivity monitoring

Upgrade & Lifecycle Management

- ▶ Streamline control-plane and NodePool upgrades
- ▶ HyperShift Operator release cycle independent of MCE
- ▶ Control plane z-stream upgrades regardless of cluster state
- ▶ Cordon node before terminating

Backup & Recovery

- ▶ HCP backup & restore on different management cluster
- ▶ CI coverage for backup/restore in same cluster

Security & Integrations

Authentication & Security

- ▶ New status condition for external auth IdP
- ▶ Support certificates to OAuth in hosted clusters
- ▶ Configurable secret management for Service Accounts
- ▶ Customer global pull secret in ROSA-HCP
- ▶ PQC enabled

Networking & Connectivity

- ▶ User defined networking (UDN) with HCP
- ▶ OVN control-plane vs. data-plane skew within z stream
- ▶ Persistent NTP Configuration for Worker Nodes

Integrations

- ▶ Arm control-plane with x86 data-plane
- ▶ x86 control-plane with Arm data-plane
- ▶ GCP-HCP
- ▶ IPv4/IPv6 dual stack support in AWS

Control Plane and Cluster Infrastructure

Near term (1H 2026)

- ▶ **API and Auth:** Support for custom RSA key sizes for OpenShift CA, and configuring structured authentication with BYO External OIDC
- ▶ **etcd:** Support for event-ttl in Kube API Server Operator and documentation for replacing control plane nodes
- ▶ **CAPI:** CAPI for OpenShift installations on vSphere (Dev Preview) and continue pre-GA integration tasks for standalone OCP
- ▶ **MAPI:** Spot VMs on GCP in MAPI

Mid term (2H 2026)

- ▶ **API and Auth:** Kube KMS (GA), platform certificate validity extended to 5 years, and BYO enhancements for multiple IDP providers (GA)
- ▶ **etcd:** Selectable database size (TP), automated local backups to reach GA, and Network Policies for core etcd components
- ▶ **Networking:** Dual stack support for AWS and Azure in CCM
- ▶ **CAPI:** CAPI machine creation in the installer, CAPI support for Nutanix Installation (TP)
- ▶ **MAPI to CAPI:** MAPI to CAPI migration on AWS (GA)
- ▶ **PQC:** ML-KEM support for OCP Core

Long term (1H 2027+)

- ▶ **API and Auth:** Extensible RBAC integrations, including conditional authorization, and platform hardening with PSa Enforcement in Restricted Enforcement Mode
- ▶ **etcd:** Hitless automatic defragmentation and automated backups to external targets
- ▶ **CAPI:** CAPI for Standalone OCP (GA), Integrate CAPI (post-GA tasks) and enable Machine Pools using CAPI
- ▶ **MAPI to CAPI:** Complete MAPI to CAPI migration for GCP and Azure
- ▶ **MAPI:** Deprecate Machine API

RHEL CoreOS & Machine Config Operator

Cloud-native OS

RHCOS 9 and 10 in the same cluster

Dual OS streams extend the effective RHEL Certified hardware lifecycle in OpenShift and isolate the OS major version upgrade process.

Confidential Clusters

Run OpenShift in fully trusted execution environments.

Day-1 image mode configuration

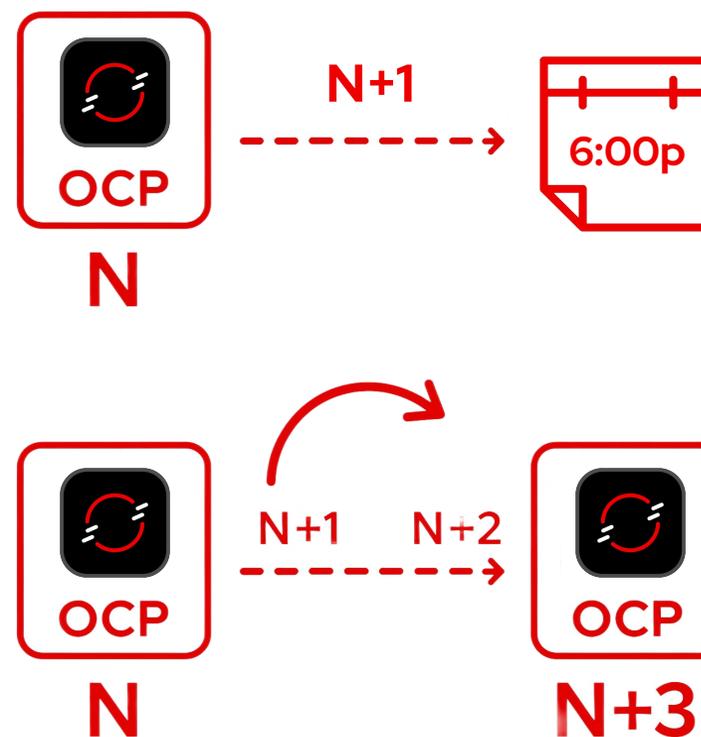
Inject your CoreOS customizations at installation time.

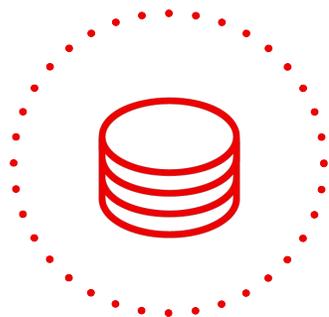


Minor and EUS-to-EUS Platform Updates

Prevent failed updates and allow larger EUS jumps

- ▶ **Prevent disruption:** Declaratively deferring updates and configuration changes into scheduled maintenance windows
- ▶ **Smoother updates:** Reduce false alarms during pre-checks and updates
- ▶ **Support new EUS strategy:** EUS jumps support from N to N+3 with a single worker reboot
- ▶ **Encourage frequent updates:** API server emulation offers minor version rollback capabilities before finalizing update and skip-level updates





Container Storage Interface

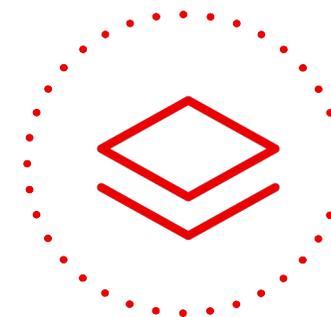
vSphere CSI - VCF 9 support

Azure File Snapshots (GA)

Azure File Cloning (GA)

LSO Symlink change resilience

SMB CSI DFS Support (TP)



Core Storage

VolumeAttributesClass (GA)

Disable force detach

Changed Block Tracking (TP)

SELinux context mounting for RWX (GA)

VolumeGroupSnapshot (GA)

Last volume mount timestamp (TP)

Near
term

Mid
term

Accelerate AI/ML Workloads in OpenShift: What's Planned

Optimizing Infrastructure for Enterprise AI/ML



Intelligent workload scheduling with **Red Hat build of Kueue**

- ▶ Deliver local queue defaulting and **multi-Kueue** user experience
- ▶ Dashboard and **observability** integration
- ▶ **ACM** and **Autoscaler** integration
- ▶ Dynamic Resource Allocation and **Job Set** integration
- ▶ **Fair-share cohorts** and **partial preemption** for serving up workloads
- ▶ **Dynamically-sized jobs, flavor strategies,** and structured DRA parameters for intelligent queueing



Dynamic Resource Allocation to manage and allocate specialized hardware devices

- ▶ Structured parameters and attribute-based GPU allocation with **NVIDIA GPU Operator**
- ▶ Expand to **device health, partitioning, flexible binding,** and **node/device taints**
- ▶ Enable extended resource requests and robust preemption for modern GPU scheduling

Red Hat Cloud Services

Managed OpenShift

Roadmap Themes

*Security Posture
& Hardening*

Virtualization

*Artificial
Intelligence*

Observability

*Architecture
refinement*

Managed OpenShift Services



Red Hat OpenShift Service on AWS (ROSA)

- ▶ *Win-LI* and *BYOL* for Virt Windows workloads
- ▶ *Control Plane Log Forwarding* for cluster observability
- ▶ *AutoNode/Karpenter* for scalability
- ▶ *Global Pull-Secret config* for registry mirroring
- ▶ *Enhanced Monitoring/Notification* for observability
- ▶ *Spot instances* for resource efficiency
- ▶ *Scale to/from zero* for resource efficiency
- ▶ *BGP* for Virtualization workload networking



Azure Red Hat OpenShift (ARO)

- ▶ *Confidential Containers GA* Enhanced security posture for container workloads with hardware-level isolation
- ▶ *Jumbo frame support* for more efficient network usage
- ▶ *Region expansion* for Mexico Central, New Zealand North, Indonesia Central, Malaysia West
- ▶ *Managed Identity GA* for supporting managed identity based clusters and workload identity
- ▶ *Single availability zone* for allowing single AZ clusters in multi zone regions
- ▶ *Hosted Control Planes* for for cost savings, operational efficiency and increased reliability



OpenShift Dedicated - Google Cloud

- ▶ *OpenShift Virtualization* for unifying all workloads on a single app platform
- ▶ *Integration with Google Managed Prometheus* for centralized, cloud-native observability
- ▶ *Reduce overly permissive permissions in the WIF config and Shared VPC* for improved security and compliance
- ▶ *SRE approved access* for operational transparency
- ▶ *Spot instances* for resource efficiency
- ▶ *Hosted Control Plane* for cost savings, operational efficiency and increased reliability

Near term

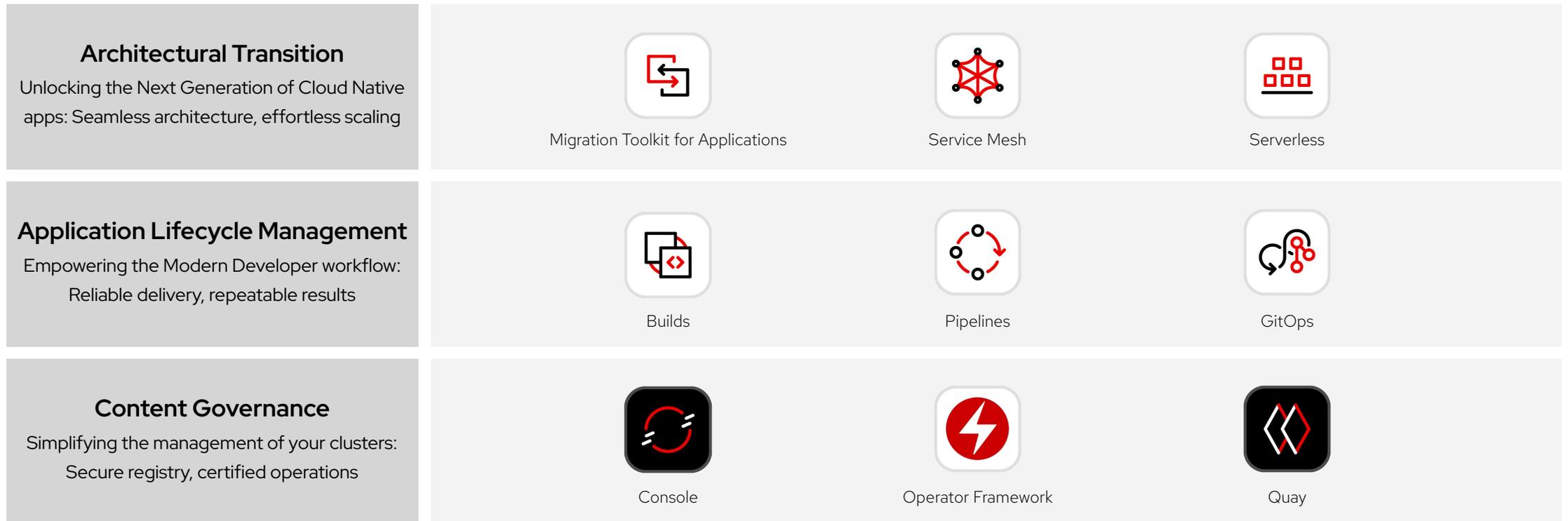
Long term

More than Kubernetes

(Workloads and Layered Offerings)

Workloads and layered offerings

Building blocks for an Enterprise Application Platform



Content Governance

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Console	Operator Framework	Quay
Near term (6 months)	<ul style="list-style-type: none"> OLM v1 Tech Preview: Creation Flows, Installed Operators Page Dynamic Plugin Framework: Upgrade React and ReactRouter 	<ul style="list-style-type: none"> OLM v1 GA support for Webhooks and Single/Own Namespace Support TLS cluster profile for PQC-safety Improve upgrade experience by fixing false alarms in ClusterOperator status 	<ul style="list-style-type: none"> Enable massive-scale content distribution with Organization Mirroring. Deliver “ubi9-minimal” base image for FIPS ready and images config as least-privilege.
Long term (9 + months)	<ul style="list-style-type: none"> OLM V1 GA: Enhanced Upgrade Operators Experience Improved Cluster Upgrade Experience 	<ul style="list-style-type: none"> OLMv1 remaining feature parity Boxcutter integration Refactor the Catalog schemas for improved performance, Upgrades and Disconnected experience 	<ul style="list-style-type: none"> Reduce bandwidth and storage space with Sparse Manifest Lists. A slim, go-based next-gen registry features small footprints and local storage.

Application Lifecycle Management

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Builds	Pipelines	GitOps
Near term (6 months)	<ul style="list-style-type: none"> ● Increase image build security with user namespaces ● BuildConfig to Shipwright migration guide and tooling 	<ul style="list-style-type: none"> ● Pipelines execution across the cluster fleet (TP) ● Manage Supply Chain artifacts via Results (TP) ● Pipeline analysis with OpenShift LightSpeed 	<ul style="list-style-type: none"> ● GitOps in Dev Sandbox ● Source Verification Policies ● Argo CD CLI (GA) ● OpenShift Lightspeed integration
Long term (9 + months)	<ul style="list-style-type: none"> ● Shipwright in Dev Sandbox ● Dependency caching in image builds ● Multi-arch image builds 	<ul style="list-style-type: none"> ● Conversational Pipeline Authoring with OpenShift LightSpeed (TP) ● TPA/TAS/ACS integration 	<ul style="list-style-type: none"> ● Progressive Sync (GA) ● Image Updater (GA) ● AppSets in any namespace (GA) ● Application promotion

Architectural Transition

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Migration Toolkit for Applications	Service Mesh	Serverless
Near term (6 months)	<ul style="list-style-type: none"> Centralized configuration management. Dev Spaces support. First class support for Golang, .NET, Python and Node.js. 	<ul style="list-style-type: none"> Post-quantum crypto support Ambient mode multicluster External VMs developer preview ZTWIM(SPIRE) integration 	<ul style="list-style-type: none"> KEDA HTTP add-on Kubernetes-deployer in Functions New Function views in OpenShift Console
Long term (9 + months)	<ul style="list-style-type: none"> OpenShift cross-cluster migrations (apps and data). MCP server. AI assisted rules generation. 	<ul style="list-style-type: none"> RH ACM integration for managing mesh at scale AI-driven service mesh support w/ Kiali MCP & Lightspeed 	<ul style="list-style-type: none"> Functions as MCP Server Migration guides and tooling for AWS Lambda

Networking

Product Managers: Marc Curry, Mark Schmitt

Red Hat OpenShift Networking

A highly-anticipated subset of the overall OpenShift Networking development efforts



- EVPN support (Tech Preview)
- No-overlay support backed by BGP (Tech Preview)
- VM Migration to OpenShift with persistent IPs (GA, w/ OCP Virt)
- Intracluster vRouter
- IPv6 single/dual stack support on public clouds
- Network Observability: korrel8r (correlation of Observability tools)
- Post-Quantum Cryptography
- Enable AI workload networking
- EgressIP feature re-factor & modernization



- EVPN support (GA)
- No-Overlay support backed by BGP (GA)
- SRv6 support
- VPC support
- Network QoS support
- Route to multiple external networks
- Multicluster User Defined Networks
- Multicluster Network Observability
- eBPF Manager GA
- Secure DPU support on OVN-Kubernetes using SFC
- OpenShift networking training



- DRANET/NRI integration & possible replacement for Kube CNI
- Layer 7 traffic firewall/filtering (WAF)
- Applied AI: Observability & Troubleshooting
- MCP Gateway GA
- 3Scale -> RHCL migrations
- Zero-trust networking
- Continue to drive migrations from o-sdn to ovn-k to focus efforts on our modern, default implementation of OpenShift networking

Near Term

Longer Term

*Tech Preview [Scope of Support](#)

**This slide contains forward-looking roadmap information and as such should not be taken as an absolute implementation plan or outcome.

Product Managers: Marc Curry, Mark Schmitt:

Network Observability

Mid Term

Mid Term

- Network Observability operator installed as a Day0 capability or a bundled option (Assisted Installer)
- BGP Observability
- Network Health and Alerting view (in console) GA
- Revamp deployment models
 - kafka/loki less
- Improved visualization of HTTP traffic
- MCP server for Network Observability

Long Term

Long Term

- Gateway API observability and metrics
- Egress IP metrics & alerts
- EVPN observability
- More innovations in visualisation
- Developer-specific view
- AI enhancements
- Dynamic alerting
- Feedback loop
- Network automation

Observability

Product Managers: Roger Floren, Vanessa Martini, Jamie Parker, Simon Herlofsson & Eric Evans

Red Hat Observability Strategy

2026 focus areas

▶ AI-Driven Observability

- Reduce the Mean Time to Detect (MTTD) and Mean Time to Resolve (MTTR) via:
 - **OpenShift Lightspeed** troubleshooting integration
 - **GPU/Accelerator metrics**, GenAI observability capabilities and partner integrations
 - **OTEL Data standardization** - Using the preferred AI data format

▶ Multi-Cluster Capabilities

- Easily handle multiple clusters via:
 - **Intelligent ACM** with right sizing (namespace/VM), incident detection & more (GA target)
 - **Unified/centralized** observability experience with Multi-Cluster Observability Add-On (MCOA), including Virtualization use cases
 - **Solid multi-cluster alerting** experience with enhanced Alert Management UI capabilities
 - Customizable dashboards in ACM console with **Perses**



AI-Driven Observability



- An **AI Trace Summarizer** will use natural language processing to create a summary of a trace, and display it on top of the Gantt Chart in the Traces UI



- **OpenShift Lightspeed** troubleshooting integration with observability **MCP servers**: single- and multi-cluster enhancements



- Adding **MCP servers for OpenTelemetry and Tempo** will give additional context to observability signals

Near Term

Long Term

Multi-Cluster Capabilities



- **Native and custom dashboards** for multi-cluster observability in ACM with **Perses** - TP
- **Workload efficiency** with **ACM Rightsizing** recommendations at the cluster, namespace & VM level - GA



- **Native and custom dashboards** for multi-cluster observability in ACM with **Perses** - GA
- **Post-GA** enhancements: **Rightsizing** recommendations at the cluster, namespace & VM level in ACM



- Improved **Alert Management UI** experience: multi-cluster - TP
- **Incident Detection**: multi-cluster - TP

Near Term

Long Term

Observability Foundation



Monitoring

Tracing

Logging



- **Optional, lightweight monitoring** for reduced footprint
- **Prometheus Remote-Write v2** support for more reliable, efficient metric export
- **APM Dashboards** for displaying RED (Request, Error, and Duration) metrics derived from spans and traces - DP



Monitoring

- **Improved metrics profiles** for signal clarity



Logging

- Integrate **Cluster Logging Operator** with Cluster Observability Operator

Near Term

Long Term

Developer Experience

Product Managers: Ben Wilcock, Christophe Fargette, Mokhtar Alarhabi, Stevan Le Meur, Matthew Demyttenaere, Marcos Entenza, JP Jung

Red Hat Developer Hub

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Core	Plugins	AI
Near term (6 months)	<ul style="list-style-type: none">● Multi Login Screen● More Localization● More Scorecards● More Docs!● Homepage Customization	<ul style="list-style-type: none">● Default Dynamic Plugins● Removal of Wrappers● Learning Path 2.0	<ul style="list-style-type: none">● Lightspeed GA● More MCP Services● Llama Stack Template
Long term (9 + months)	<ul style="list-style-type: none">● New Frontend System● Feature Flags	<ul style="list-style-type: none">● News! Plugin● Other plugins TBD	<ul style="list-style-type: none">● Lightspeed Notebooks● Model Evaluation

Dev Spaces

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Core	Scalability	IDEs
Near term (6 months)	<ul style="list-style-type: none"> • Nested Containers - Native Podman run support • SSH Local to Remote Extension 	<ul style="list-style-type: none"> • Multi-Cluster support • Workspace Backups and Restore 	<ul style="list-style-type: none"> • Cursor and Kiro IDEs - support via remote ssh
Long term (9 + months)	<ul style="list-style-type: none"> • Visual DevFile Wizard/Editor • Backstage/RHDH Plugin 	<ul style="list-style-type: none"> • Improve Workspace Startup Speed 	<ul style="list-style-type: none"> • Rstudio support • Explore adding Cursor and Kiro as native web IDEs



Podman Desktop

Roadmap Highlights

Near term
(6 months)



Long term
(9 + months)

	Containers & Kubernetes	UX & Configuration	Red Hat Tooling
Near term (6 months)	<ul style="list-style-type: none"> Automatic certificates syncing into Podman Machine 	<ul style="list-style-type: none"> Managed Configuration Default registries Search through containers, images, and documentation Docker Context Creation 	<ul style="list-style-type: none"> Air Gapped installation of extensions
Long term (9 + months)	<ul style="list-style-type: none"> Podman 6 Support RHEL Podman Machine Move from Compose to Kube 	<ul style="list-style-type: none"> Filter to specific container environments 	<ul style="list-style-type: none"> Quay integration

Red Hat Trusted Artifact Signer (RHTAS)

Enables cryptographic signing, verification of software and provenance metadata

Near Term

- **Model Transparency Library** - support private Sigstore instances
- **Model Validation Operator** - runtime model verification
- **High-availability Sigstore** deployment options
- **Scalable Transparency Log** with cloud storage support
- **Transparency Log Monitoring**
- **Conforma** support for OPA 1.0
- **Conforma** - handle multiple transparency logs within single policy execution

Mid Term

- **PostgreSQL** - backend database for Trillian
- **PQC** implement algorithms in upstream Sigstore
- **FIPS** compliance
- **RHTAS Console**
- **Certificate Log Monitoring**
- **AWS EKS** support RHTAS deployment (minimal)
- **Sigstore CLI** binaries publish on developer portal

Long Term

- **PQC** signature hosting and serving in RHTAS
- **PQC** client-side verification tool
- **RHEL 10** support RHTAS deployment
- **Model Validation Operator** integration into Red Hat internal products
- **RHTAS** Observability using OpenTelemetry

Advanced Developer Suite - Software Supply Chain (RHADS - SSC)

Near Term

- **Upgrade products version** - DevHub 1.8, TAS 1.3, TPA 2.2, GitOps 1.18, Pipeline 1.20
- **Model Signature Verification** - support in promotion phase template
- **Agentic MCP Interface** for tssc CLI
- **Templates** automate changes to tssc-sample-jenkins and tssc-sample-templates

Mid Term

- **Upgrade products version** - DevHub, TAS, TPA, ACS, GitOps and Pipelines
- **Installer** - create a reusable installer framework to support deployment of new products
- **Templates** use runner image scripts in tekton pipeline tasks, standardize lifecycle of CI vars and secrets

Long Term

- **Konflux** full alignment of konflux and RHADS
- **Installer** support deployment of community version of Konflux

Red Hat Trusted Profile Analyzer (RHTPA)

Analysis of SBOMs for vulnerabilities, on demand, at code-time, or over lifetime



Improved License Management Experience

Browse unique license expressions, package counts, and SBOM associations across the SBOM inventory.

Automated SBOM type labeling (AIBOM)

Machine-learning component indicators now auto-label SBOMs, helping teams quickly understand content and risk profiles.

Generate SBOMs directly from Quay container images

Select container images stored in Quay and automatically generate SBOMs using Syft, making it easier to analyze images missing SBOMs.

Red Hat Dependency Analytics (RHDA)



AI Model Safety Scanning

The [Red Hat Dependency Analytics plugin](#) now supports AI model evaluation. Powered by the Imeval framework, it provides detailed model cards, safety metrics, and guardrail insights directly within your IDE to help verify model integrity.

Support for Cursor IDE

The Red Hat Dependency Analytics [plugin](#) is now fully compatible with Cursor IDE, bringing advanced dependency scanning and AI safety insights to this popular AI-powered code editor.

Security

Platform Security and Red Hat Advanced Cluster Security

Product Managers: Maria Simon Marcos, Marcos Entenza Garcia, JP Jung, Nick Png, Anjali Telang, Boaz Michaely, Sabina Aledort, Ramon Acedo Rodriguez, Shubha Badve and Doron Caspin

RHACS

Security across the lifecycle



Security Policy Guardrails

- ▶ Splunk Integration
- ▶ Drift Prevention
- ▶ System policies as code
- ▶ Alignment with ACM policy
- ▶ ServiceNow Integration
- ▶ Developer Hub Policy workflows
- ▶ Seamless AuthN/Z between OCP, ACS, ACM



Network & Runtime

- ▶ File Activity Monitoring
- ▶ Advanced Process baseline
- ▶ Console Plugin for runtime



Vulnerability Management

- ▶ Base Image separation
- ▶ Console Plugin
- ▶ Enriched Vulnerability Data with CISA maintained KEV
- ▶ RHDH workflows (GA)
- ▶ SBOMs Imports
- ▶ Image Mode for RHEL support
- ▶ AI Based CVE prioritization
- ▶ Z-stream remediation guidance



Virtualization

- ▶ Vulnerability reporting for Linux VMs
- ▶ Virt Compliance Profile
- ▶ Workload identity Virt support
- ▶ Vulnerability reporting for Windows VMs



Compliance

- ▶ OCPVirt Compliance Profile
- ▶ Visualize and schedule tailored profiles
- ▶ Multi-cluster compliance remediation



AI focused Security

- ▶ Risk prioritization & explainability using AI against runtime data
- ▶ MCP Server assisted Vulnerability information
- ▶ AI BOM import and scans
- ▶ ACS insights in OCP Lightspeed
- ▶ AI artifact Signature validation
- ▶ Runtime threat detection for AI Workloads

Near term

Long term

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OpenShift Platform Security

Security Built-into the Platform



Confidential Computing

- ▶ Confidential Containers on ARO
- ▶ Confidential Nodes on AWS
- ▶ Confidential Containers on baremetal (GA)
- ▶ Confidential Clusters on Azure
- ▶ Confidential Containers for NVIDIA GPUs on bare metal (GA)
- ▶ Confidential Cluster on AWS and GCP



Quantum Safe-Cryptography

- ▶ Control Plane with ML-KEM
- ▶ Openshift Core with MK-KEM
- ▶ Service Mesh with quantum-safe key encapsulation, including GatewayAPI
- ▶ All OCP products support ML-KEM
- ▶ OpenShift Core with ML-DSA



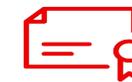
Cert-management for User workloads

- ▶ Trust bundle distribution
- ▶ Policies for cert-approval s and denys with CertificateRequest
- ▶ Gateway API full support
- ▶ ACME challenges



Secrets management

- ▶ ESO Custom annotations. SSSCI auto-rotation and polling interval params
- ▶ ESO AWS Auth, SSSCI Filesystem permissions
- ▶ ESO Sync-secrets, SSSCI improved secret rotation
- ▶ ESO with network policies
- ▶ Unified Secret Console Plugin



Zero Trust Workload Identity

- ▶ Zero trust workload identity manager (ZTWIM) Integration with OSSM
- ▶ Nested SPIRE, ZTWIM ACM integration
- ▶ ZTWIM with OCP Virtualization - identities for VMs and Containers
- ▶ ZTWIM in Agentic AI Trust Fabric
- ▶ ZTWIM for Edge
- ▶ ZTWIM with Trusted Supply chain
- ▶ ZTWIM confidential compute integration

Near term

Long term



What's Next in Multicluster Management

With Red Hat Advanced Cluster Management

Product Managers:

Scott Berens, Sho Weimer, Christian Stark, Bradd Weidenbenner, Shawn Purtell, August Simonelli

Presenter: Luiz Bernardo Levenhagen

acm-contact@redhat.com

Red Hat Advanced Cluster Management

Roadmap Highlights

Virtualization

Governance

IAM

NEXT

Fine-grained RBAC for OpenShift Virtualization (GA)

Virtualization cross cluster live migration (GA)

Linting for policy templating

Expanded policy templating functions

Fine-Grained RBAC for Hubs

Fine-Grained RBAC for Virt

LATER

Automatic enablement of virtualization across fleet

Dashboards for cross cluster live migration

Customizable Governance dashboards

Deeper integration with Validating Admission Policies

IAM for Multiclustler Fleets

Red Hat Advanced Cluster Management

Roadmap Highlights

Applications

Observability

AI & More

NEXT

Progressive Sync of Argo CD ApplicationSets (GA)

ACM Addon with ArgoCD Agent Integration (GA)

ACM Right Sizing for VMs, namespaces & clusters (GA)

T-Shirt sizing for Observability Stack (GA)

Integration with OpenShift LightSpeed

Search MCP server (TP)

LATER

ACM ApplicationSets in any namespace (GA)

Customize multicluster dashboards directly in OpenShift Console

Thanos operator

LightSpeed (Insights) on-premises

Multicluster capabilities in OpenShift MCP Server

MultiKueue add-on

Fleet-Wide Federated Learning

OpenShift for Telco and Edge

Product Managers:

Daniel Froehlich, Syed Khadeer Ahmed, Hari Rakotoranto, Robert Love, Dmitry Muznikas, Deepak Sreenivas

Presenter: Franck Baudin

Device Edge , MicroShift, Two Nodes

Near term
(6 months)



Long term
(9 + months)

	Device Edge	MicroShift	OpenShift Edge
Near term (6 months)	<ul style="list-style-type: none"> Red Hat Edge Manager General Availability - Comprehensive edge device fleet management: Intuitive edge operations, police-driven deployments using pull mode and hardened communications. 	<ul style="list-style-type: none"> Simplify SR-IOV MicroShift on RHEL 10 TP Generic Device Plugin GA Last Level Cache locality (align-cpus-by-uncorecache) Hosts file for CoreDNS 	<ul style="list-style-type: none"> Support adding worker nodes to Two-Node OpenShift with Arbiter (TNA) Tech Preview of Two-Node OpenShift with Fencing (TNF)
Long term (9 + months)	<ul style="list-style-type: none"> Edge Manager Image Builder, Log Analysis, Predictive Planning 	<ul style="list-style-type: none"> MicroShift on RHEL 10 GA Security Profile for ISA 62443 Secure cluster-to-cluster communications 	<ul style="list-style-type: none"> General Availability of Two-Node OpenShift with Fencing (TNF) Reduce bandwidth requirements during installation and updates Investigate possibilities of topology transitions on day two, e.g. switch from Single Node OpenShift to a Compact Cluster.

Telco exploratory features

PoC and upstream collaboration to validate choices and address technical risks

Host Networking

Use cases

- ▶ PE Router (5G Core)
- ▶ vCSR (5G RAN, vDU)

Upstream projects

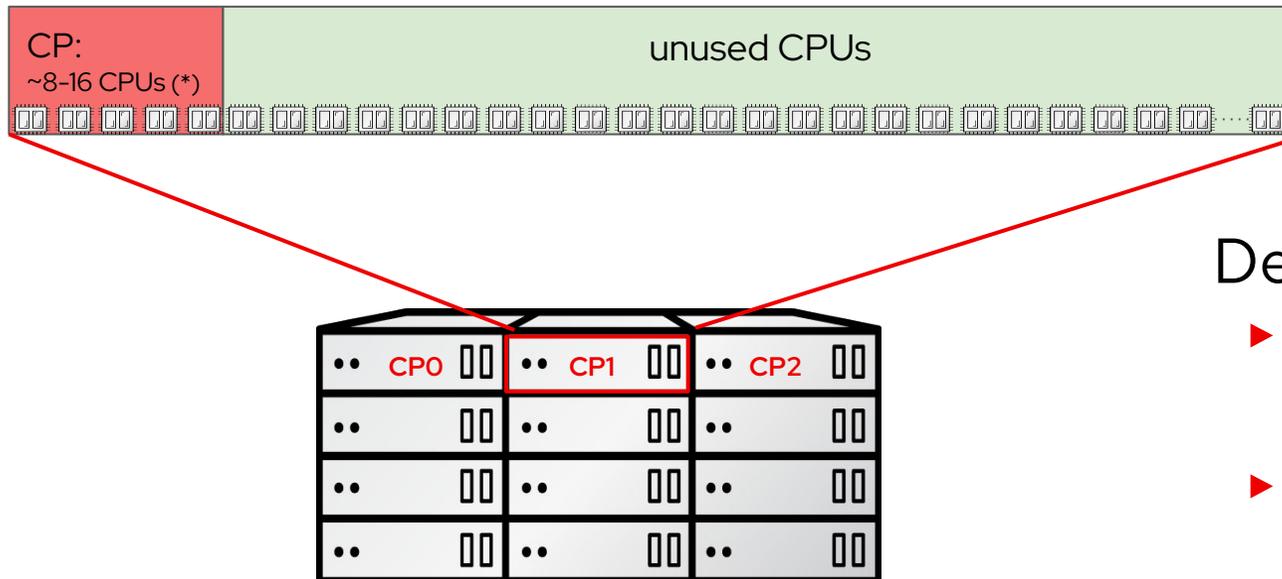
- ▶ <https://openrouter.github.io/>
- ▶ <https://github.com/DPDK/grout>

Nodes resources

Kubernetes resource management changes driven by AI use cases: the DRA project *could* permit to re-implement our CPU/Memory/Devices current stack and provide the granular flexibility of allocation that is required by CNF use cases

Control Plane nodes & CAPEX

Servers with 100+ CPUs are already common, 512 CPUs per server already supported, 1024 coming in 2026



Depending on your requirements

- ▶ Schedulable Control Plane: 4.20 GA
 - Workload partitioning required
- ▶ Hosted Control Plane: 4.20 DP
 - 4.23+GA
- ▶ Virtualized Control Plane
 - RDS addition: 4.21
 - Redfish support: GA 4.22

(*) Exact dimensioning depends on the use case, see [Chapter 2. Recommended performance and scalability practices | Red Hat Product Documentation](#)

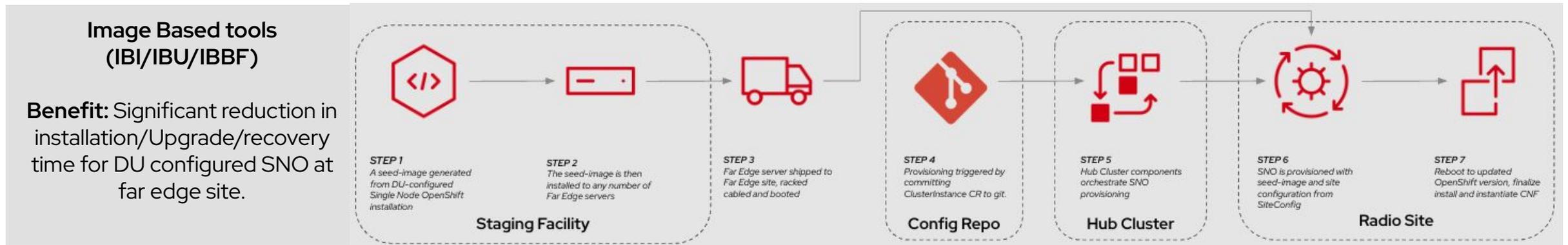
New Hardware Support - Validated for Telco Use cases

Near term
(6 months)

Long term
(9 + months)

		 	
Near term (6 months)	<ul style="list-style-type: none"> ● GNR-D full support (RAN use-case): CPU Integrated NIC / Carter Flat SR-IOV, FDP PTP: OC/BC T-BC, T-GM Microchip M.2 Advanced Timing Ublox M.2 GNSS Acceleration: VRB2 (3rd party support) OEM Certifications (HW & RT) ● GNR-SP 	<ul style="list-style-type: none"> ● nvidia GPU enablement for Telco RAN + AI use cases with nvidia Grace Hopper 	
Long term (9 + months)	<ul style="list-style-type: none"> ● Pine Channel ● ClearWater Forest ● Intel next generation RAN CPU 	<ul style="list-style-type: none"> ● nvidia Grace Blackwell ● nvidia Vera CPU 	<ul style="list-style-type: none"> ● Venice CPU

Telco RAN/SNO operational improvements



- ▶ IPv4 / IPv6 dual stack for IBI, IBU
- ▶ SNO IP address change: Capability to seamlessly change IP address of the Node
 - Disaster recovery in case of earthquake, wildfire: 5G end user Service remediation e.g. switch from terrestrial fiber to satellite
 - Cell on Wheels
 - vDU rehomeing to new location

Thank you for joining!

What's New and
What's Next

red.ht/whatsnew

Guided demos of
new features
on a real cluster

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documentation
and more

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