Red Hat OpenShift

What's New in Red Hat OpenShift

Anwendertreffen 25.09.25

Robert Baumgartner

Senior Solution Architect, Red Hat Austria

Red Hat

Red Hat OpenShift Life Cycle Dates

Version	General availability	Full support ends	Maintenance support ends	Extended Update Support Add-On - Term 1 ends	Extended Update Support Add-On - Term 2 ends	Extended life phase ends
Full Support						
4.19	June 17, 2025	GA of 4.20 + 3 Months	December 17, 2026	N/A	N/A	N/A
Maintenance Support						
4.18	February 25, 2025	September 17, 2025	August 25, 2026	February 25, 2027	February 25, 2028	N/A
4.17	October 1, 2024	May 25, 2025	April 1, 2026	N/A	N/A	N/A
4.16	June 27, 2024	January 1, 2025	December 27, 2025	June 27, 2026	June 27, 2027	N/A
Extended Support						
4.14	October 31, 2023	May 27, 2024	May 1, 2025	October 31, 2025	October 31, 2026	N/A
4.12	January 17, 2023	August 17, 2023	July 17, 2024	January 17, 2025	January 17, 2026	N/A

Extended Update Support Add-On - Term 2 is an optional Add-On subscription available to Red Hat OpenShift customers
https://access.redhat.com/support/policy/updates/openshift

Red Hat

OpenShift What's New and Next

Red Hat Austria Community Days Events

OpenShift What's New and Next: https://www.redhat.com/en/whats-new-red-hat-openshift

OCP 4.19 Recording: https://www.youtube.com/watch?v=_Hrhmj707ok

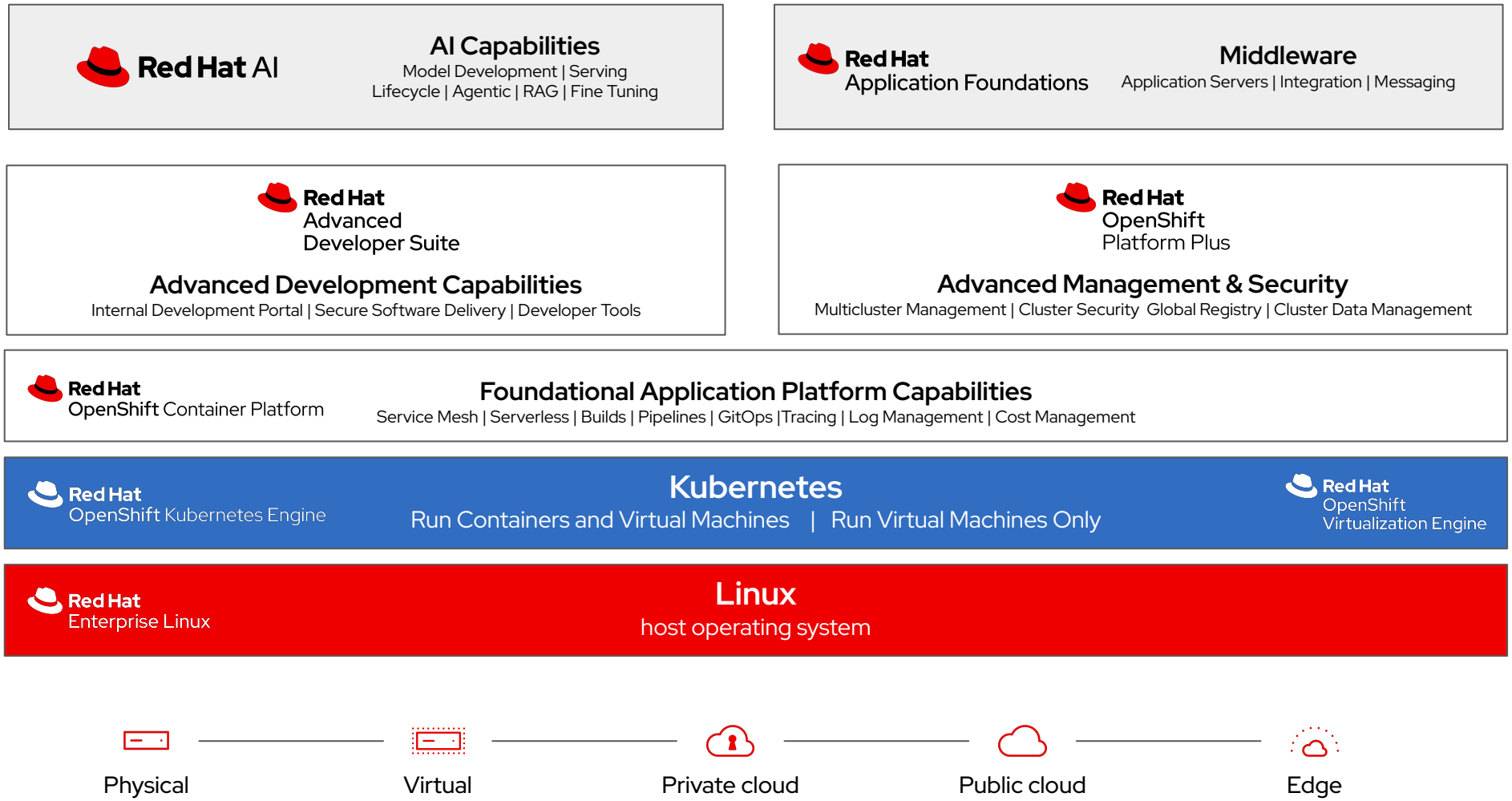
OCP 4.18 Slides:
https://speakerdeck.com/redhatlivestreaming/whats-new-in-openshift-4-dot-19

OCP 4.18 Recording: https://www.youtube.com/watch?v=yqBaxC7bmcc

OCP 4.18 Slides:
https://speakerdeck.com/redhatlivestreaming/whats-new-in-openshift-4-dot-18

Red Hat Austria Community Days und Events: https://www.redhat.com/austria-events

Red Hat OpenShift and Open Hybrid Cloud



Red Hat OpenShift Cloud Services

- Red Hat OpenShift Service on AWS
- Azure Red Hat OpenShift
- OpenShift Dedicated
- Red Hat OpenShift on IBM Cloud

Kubernetes 1.32

"Penelope"

Notable Stable Features

- Custom Resource field selectors
- Dynamic sizing of memory-backed volumes
- StatefulSet PVC Cleanup
- Bound service account token improvements
- Structured authorization configuration
- Job creation timestamp added to CronJob annotations

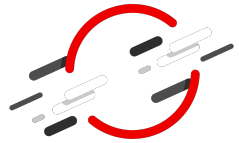
Notable Beta Features

- Restrict anonymous auth for configured endpoints
- ManagedBy field for Jobs
- Label and field selector authorization
- Volume expansion failure recovery
- Dynamic resource allocation enhancements (Alpha)

CRI-O 1.32

Kubernetes 1.32

OpenShift 4.19



Product Manager: Nick Png

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OpenShift 4.19 Spotlight Features

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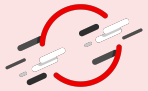
Red Hat OpenShift 4.19 Highlights

Core



- Gateway API via OpenShift Service Mesh 3 for cluster ingress (GA)
- OVN-Kubernetes BGP support
- OpenShift Lightspeed (GA)
- Dynamic accelerator slicer (TP)
- Red Hat build of Kueue
- On-cluster image mode for OpenShift

Security

- Cert-manager support for routes certificates
- OpenShift on Confidential Nodes on Google Cloud (Intel TDX and AMD SEV-SNP)
- OpenShift on Confidential Nodes on Azure (AMD SEV-SNP)
- Confidential containers for IBM Z via IBM Hyper Protect Services

Virtualization

- Storage class migration
- OpenShift Virtualization on ARO (Preview) and OSD (Preview)
- Simplified installer for OpenShift Virtualization Engine
- OpenShift Virtualization hardening guide

OpenShift Platform Plus

- RHACS 4.8: policy as code, compliance scanning and external IPs
- RHACM 2.14 on-demand from AWS Marketplace
- Regional DR support multiple ODF storage classes

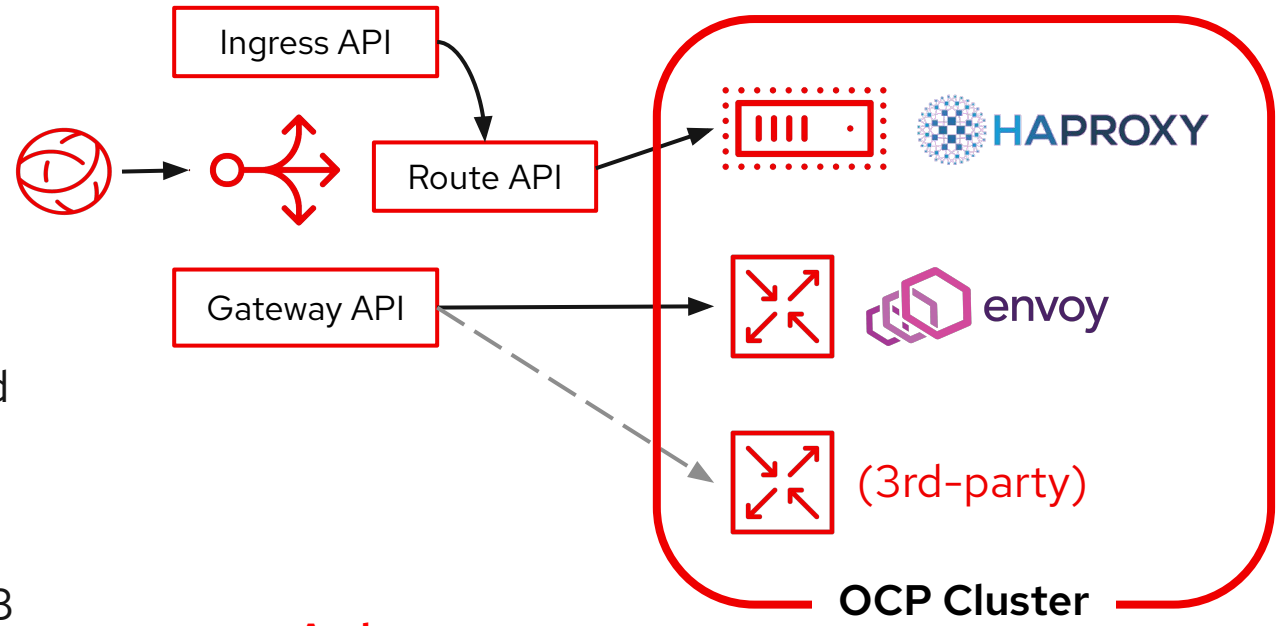
GA: Generally Available
TP: Technology Preview
VM: virtual machines

red.ht/whatsnew

Gateway API on OpenShift

Kubernetes' next-generation standard for service networking

- **GA of Gateway API at OCP 4.19 with OSSM 3.0**
- Installed side-by-side with HAProxy
  - 10+ years of proven stability, performance
- OCP will support all methods of K8s ingress:
  - Route API
  - Ingress API
  - Gateway API
- OpenShift Ingress operator will support installation and management of Gateway API via OSSM
- Enabling Service Mesh is not required
- OCP platform will provide out-of-the-box DNS and LB support



Analogs:
Istio : OpenShift router
Envoy : HAProxy
Gateway : IngressController
HTTPRoute : Route

Product Managers: Marc Curry, Deepthi Dharwar

BGP Support in OVN-Kubernetes

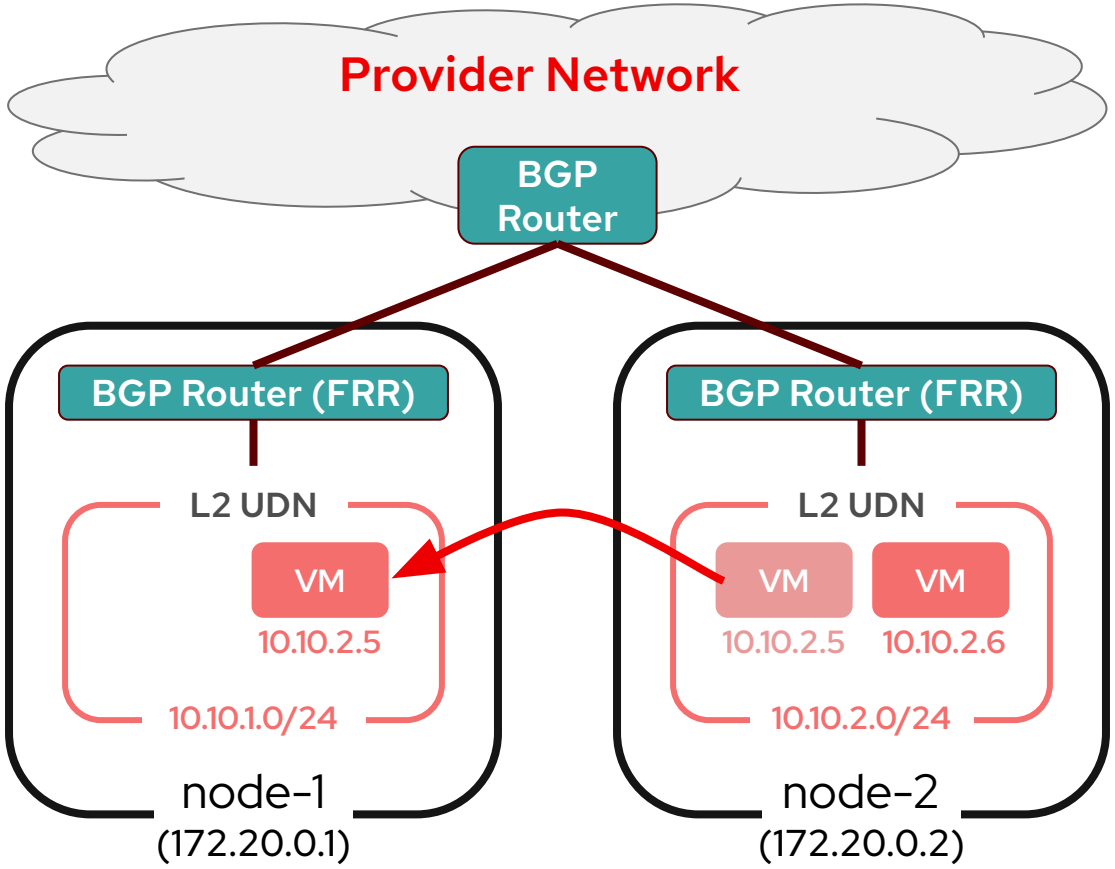
Generally Available in an early 4.19.z-stream release

BGP with OVN-Kubernetes (KEP)

- Adds to MetalLB BGP support already available today
- Cluster Admin privileged Primary UDN advertisements
- Import/Export of routes enabled independently
- BFD is supported
- Expose pod networks directly in the provider network, supports both default and UDN networks
- EgressIP supports L3 topology for node network
- Import routes from the provider network to default pod network or designated UDN (VRF)
- VRF-Lite extends UDN tenant isolation via VPN integration with the provider network

ROADMAP

- No-overlay support
- EVPN support



Product Managers: Marc Curry, Deepthi Dharwar

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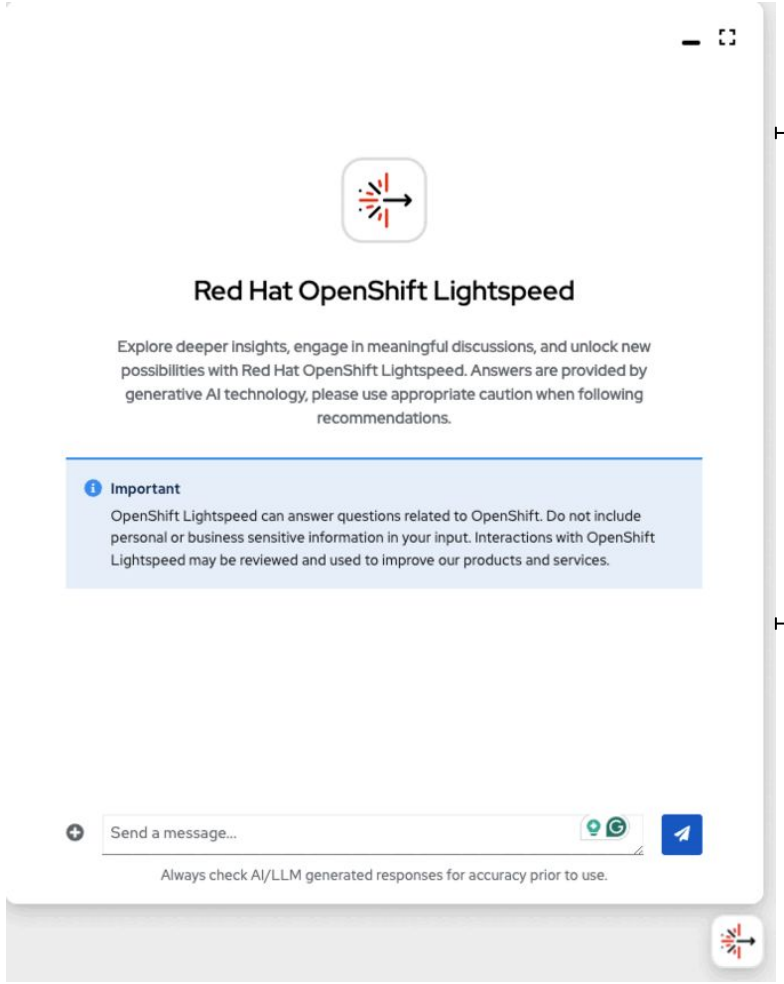
What's next

OpenShift Lightspeed

Generative AI based chat assistant



Available Now (GA)

- Operator install Chat UI in OCP console
- Interactive OpenShift documentation/help
- Attach feature to explain pod yaml, and debug log and alerts
- Flexible LLM architecture
  - Watsonx, Azure AI, OpenAI, Red Hat OpenShift AI, RHEL AI
- Disconnected deployment supported

What's Next

- Cluster-interaction (Tech Preview)
- BYO knowledge (Tech Preview)

Subscriptions

- OKE (VM only) ,OVE ,OCP ,OPP

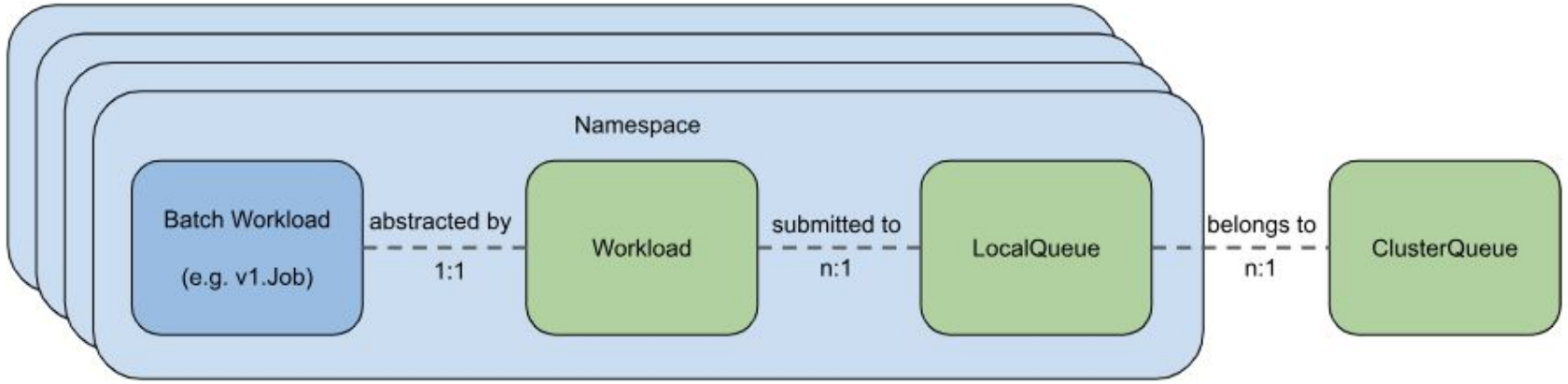
Product Managers: Gaurav Singh

Red Hat

Red Hat Build of Kueue

General Availability coming soon

Job queue management system that creates queues where group of jobs wait until resources to run those jobs are available in the cluster



Common Use Cases

- **ML training pipelines:** GPU scheduling optimization
- **Data processing:** process large datasets
- **Multi-tenant clusters:** fair resource allocation
- **Cost optimization:** efficient resource sharing

Key Benefits

- **Fair Resource Sharing**
- **Optimal Job Placement**
- **Gang Scheduling**

Product Managers: Duncan Hardie, Gaurav Singh

OpenShift Virtualization Highlights

Modernize your operations with comprehensive lifecycle and infrastructure management

Flexible Infrastructure

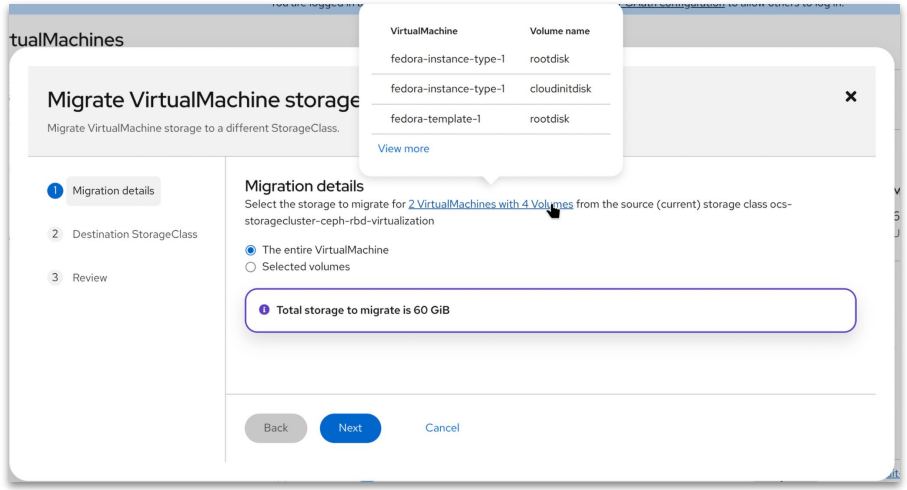
- Support additional public clouds ARO (TP), GCP and OSD (TP), OCI (TP)
- Single stack IPv6 (TP)
- Connect your VMs to the underlay network using OVN-K localnet
- Dynamically reconfigure VM storage with Storage LiveMigration

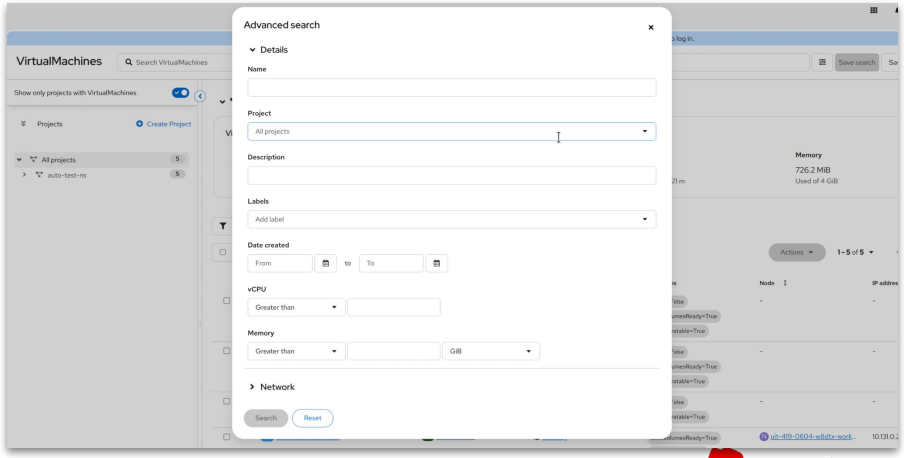
Improved infrastructure optimization

- Automatic VM workload balancing based on CPU resource utilization [TP]

Simplified VM Management

- Tree-view GA - enhanced with right-click for VM operations
- Advanced VMs search [TP]
- Protect VM from accidental deletion
- Multi-language support





Product Manager: Ronen Sde-Or

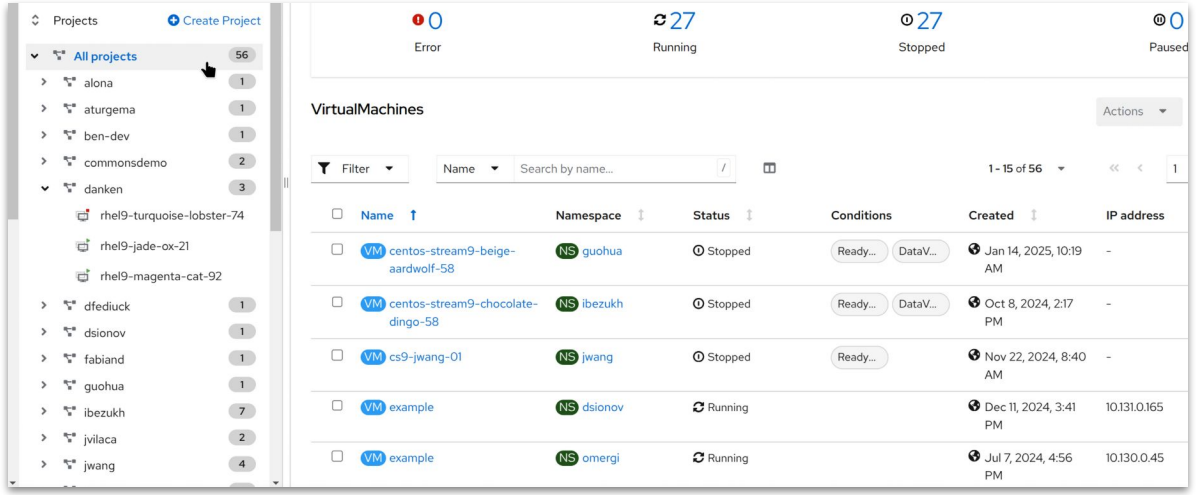
Red Hat

OpenShift Virtualization Highlights

Modernize your operations with comprehensive lifecycle and infrastructure management

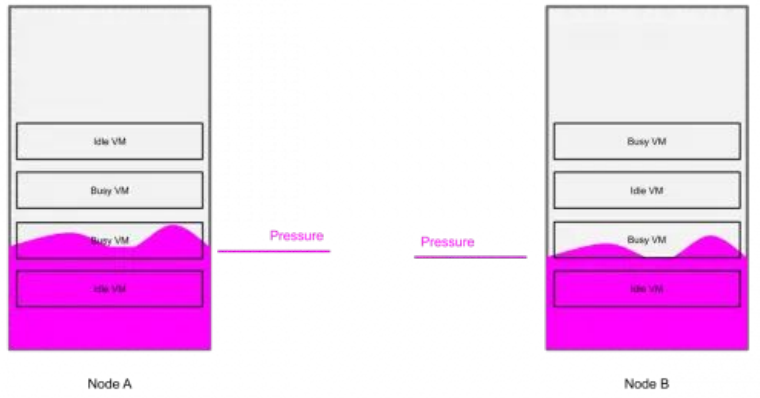
Flexible Infrastructure

- Native network isolation for VMs with User-defined primary network
- Easier to configure VM networking for AWS and ROSA
- Dynamically reconfigure VM storage with Storage Live Migration in production environments
- Wider public cloud support (TP)
  - Google Cloud Platform
  - Oracle Cloud Infrastructure



Improved infrastructure optimization

- Automatic VM workload balancing based on actuals
- Easier golden image provisions across multiple clusters



Simplified VM Management

- Virtualization Admin inventory tree view
- Fast reliable migration [MTV performance recommendations]

Product Manager: Peter Lauterbach

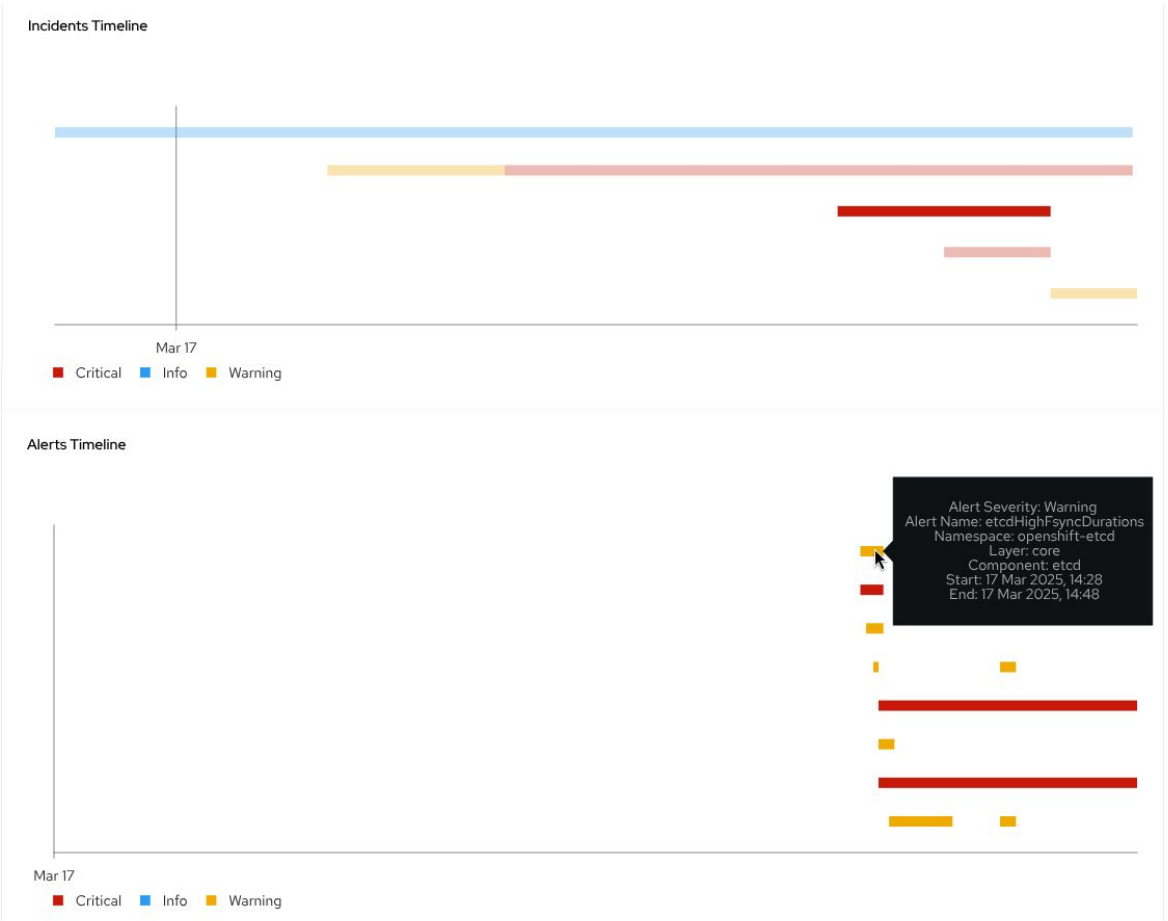
Red Hat

Intelligent OpenShift

Incident Detection

Enhanced Technology Preview with **COO 1.2**

- **Manage alert noise effectively**
  Incident detection groups related alerts into incidents
- **Alert groupings**
  Currently based on the temporal correlation between events
- **Cluster observability operator (COO)**
  Install COO 1.1+ to make use of a dedicated Observe>Incidents UI in the OpenShift web console
- **Use it together with (Observability) Signal Correlation** to find the root cause of issues faster!
- Incident detection is also available as **developer preview with ACM 2.14** ('Incidents' in Grafana)
- **Curious to learn more?**
  A dedicated blog is available



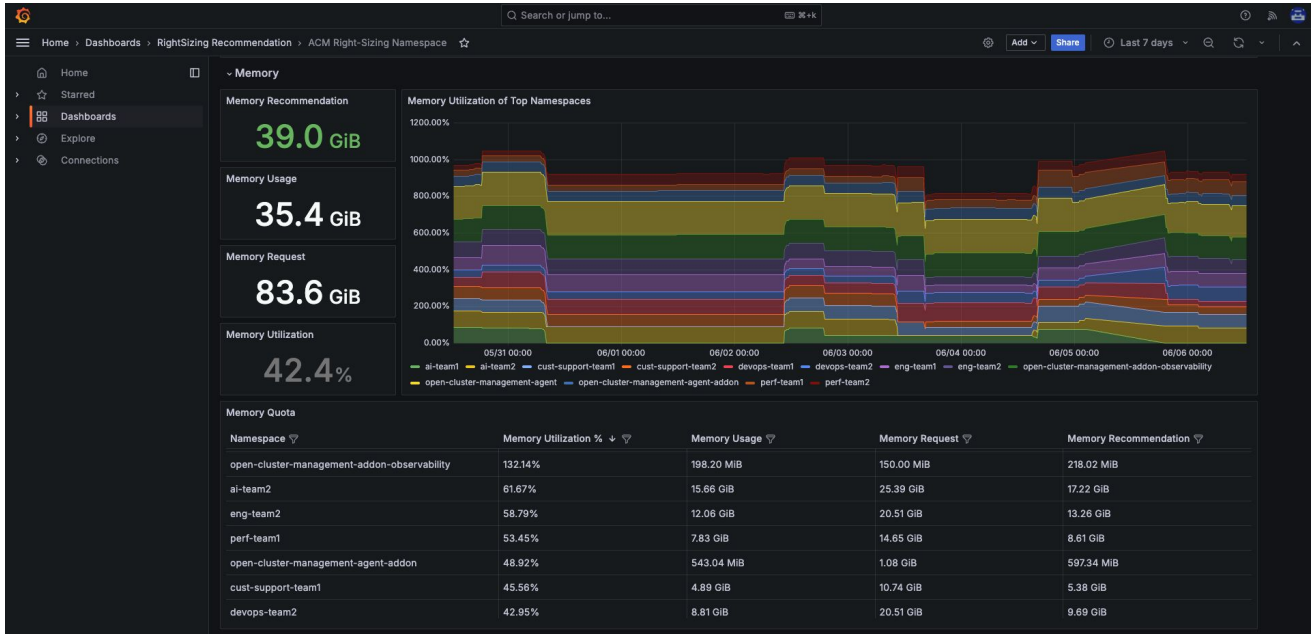
	Component	Severity	State
›	etcd	1 2	
›	kube-apiserver	1	
›	kube-controller-manager	1	
⌄	compute	2	

Product Managers: Vanessa Martini, Tomas Dosek

Right Sizing Recommendations / namespace & cluster

Technology Preview with **Red Hat Advanced Cluster Management 2.14**

- **Right sizing recommendations at the namespace & cluster level**
  Policy-driven architecture using **PrometheusRule**
  Customizable data filtering via **ConfigMap**
  Feature works with OpenShift **labels** & **namespace** filters
- **Optimize workloads effectively**
  Identify underutilized and/or overprovisioned resources across managed clusters (CPU & Memory)
- **Multicluster observability operator (MCO) required**
  Make use of a dedicated Grafana dashboard in RHACM console



Product Managers: Vanessa Martini, Christian Stark

AI Accelerator Ecosystem

- **NVIDIA Blackwell GPU support**
  NVIDIA **B200** and NVIDIA **RTX PRO 6000 Blackwell** Server Edition are supported with the NVIDIA GPU Operator 25.3.0. And OpenShift 4.19.
- **NVIDIA DGX H200 and DGX B200**
  HGX B200 and **DGX B200** systems are certified in the Red Hat catalog.
- **NVIDIA Multi-node, Multi-GPU**
  Red Hat has documented the full end-to-end configuration for **GPUDirect RDMA**.

- **OpenShift support for AMD MI325X GPUs**
  AMD supports the newly announced **MI325X GPU** with OpenShift and containers.
- **AMD GPU Health Monitoring**
  The AMD GPU Operator performs real-time health checks using a metrics exporter. It also integrates with the Kubernetes Device Plugin to automatically remove unhealthy GPUs from the schedulable resources of compute nodes.

All supported AI Accelerators

- **Unified AI accelerator telemetry dashboard**
  The **dashboard** in the OpenShift web console is providing built-in visibility into GPUs/AI accelerators performance and power usage.

Product Manager: Erwan Gallen

Red Hat

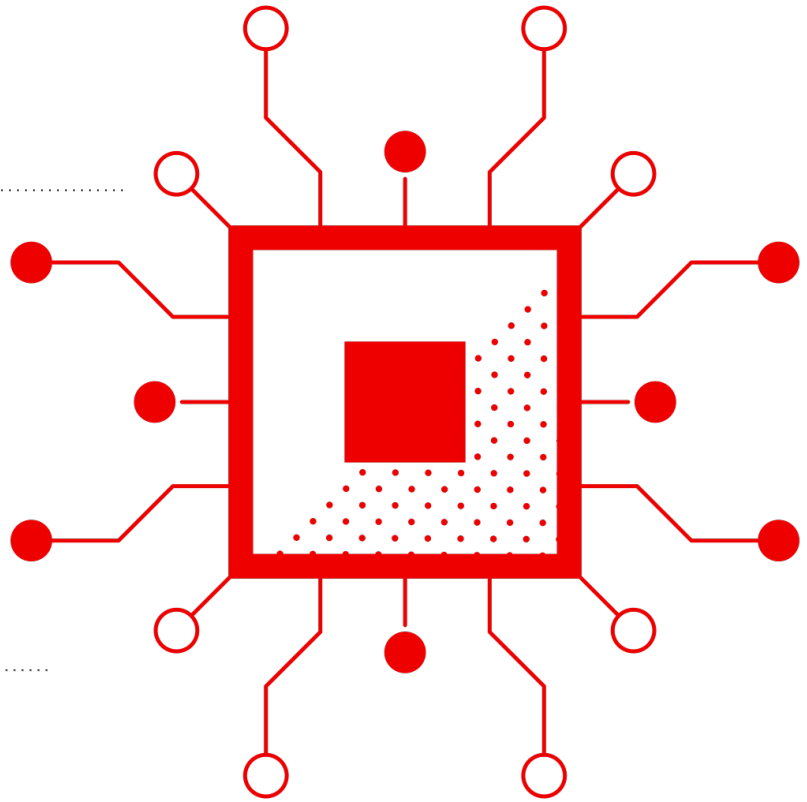
AI Accelerators

- NVIDIA GPU Operator support for the H200 NVL GPU
- OpenShift Virtualization with vGPU time-sliced for AI (GA)
- Oracle Cloud Infrastructure support for bare-metal compute shapes A100/H100
- Grace Hopper GH200 NVL2 systems certified (HPE DL384 Gen12)

- AMD GPU Operator (GA)
- Support for AMD Instinct MI210 and MI300X

- Intel Gaudi 3 supported with the Intel Gaudi Base Operator

- Spyre AI Accelerator supported in OpenShift with the AIU Operator



Manage at Scale

Red Hat Advanced Cluster Management for Kubernetes

Fleetwide OpenShift Virtualization Management Made Easy

Fine-grained RBAC for virtual machines (TP).

Secure

OCPV

Control

New Advanced VM Actions: Snapshot, restore, & more.

OCPV

RHACM

OCPV

Enhanced Observability for OpenShift Virtualization.

Observe

OCPV

Scale

True cloud native multicluster virtualization management **at scale**.

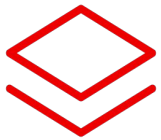
Product Managers: Shawn Purtell (speaking on behalf of August Simonelli, Scott Berens, Christian Stark, Bradd Weidenbenner, Sho Weimer)

Red Hat

Red Hat Advanced Cluster Security for Kubernetes

4.8 highlights

KEY UPDATES



Policy as Code
Manage RHACS policies as Kubernetes Customer Resources

External IP Visibility
Understand outbound connections

Keyless Sigstore Integration
Policy dryrun command line flag makes policy rollouts safer

MORE FEATURES

Scanner v4 becomes default

OpenShift Infrastructure Compliance
Stay current with community updates and provide support for the latest in 3.19

Red Hat

Product Manager: Maria Simon

Red Hat Quay

Red Hat Quay 3.15

Important improvements and fixes for AI and Supply Chain Security

Improved Google Cloud Storage Support

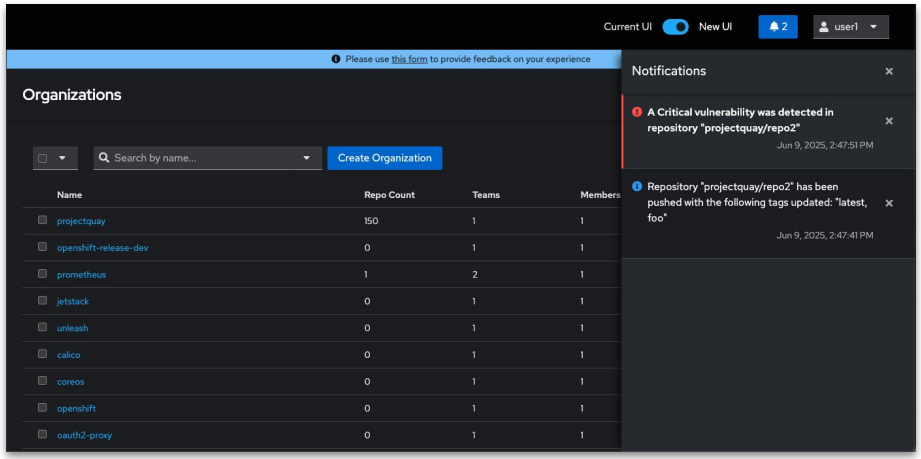
Uploads with layers larger than 4 GiB (e.g. LLMs as OCI artifacts) no longer time-out or consume excessive memory thanks to multi-part upload support

Reliable Vulnerability Scans for images partially pulled through a cache

Upon pull-through Quay now pulls all layers of the requested regardless to enable Clair vulnerability scanning

UI Improvements

We are adding UI notification support and improve the performance of listing all repositories available to a user



Product Manager: Daniel Messer

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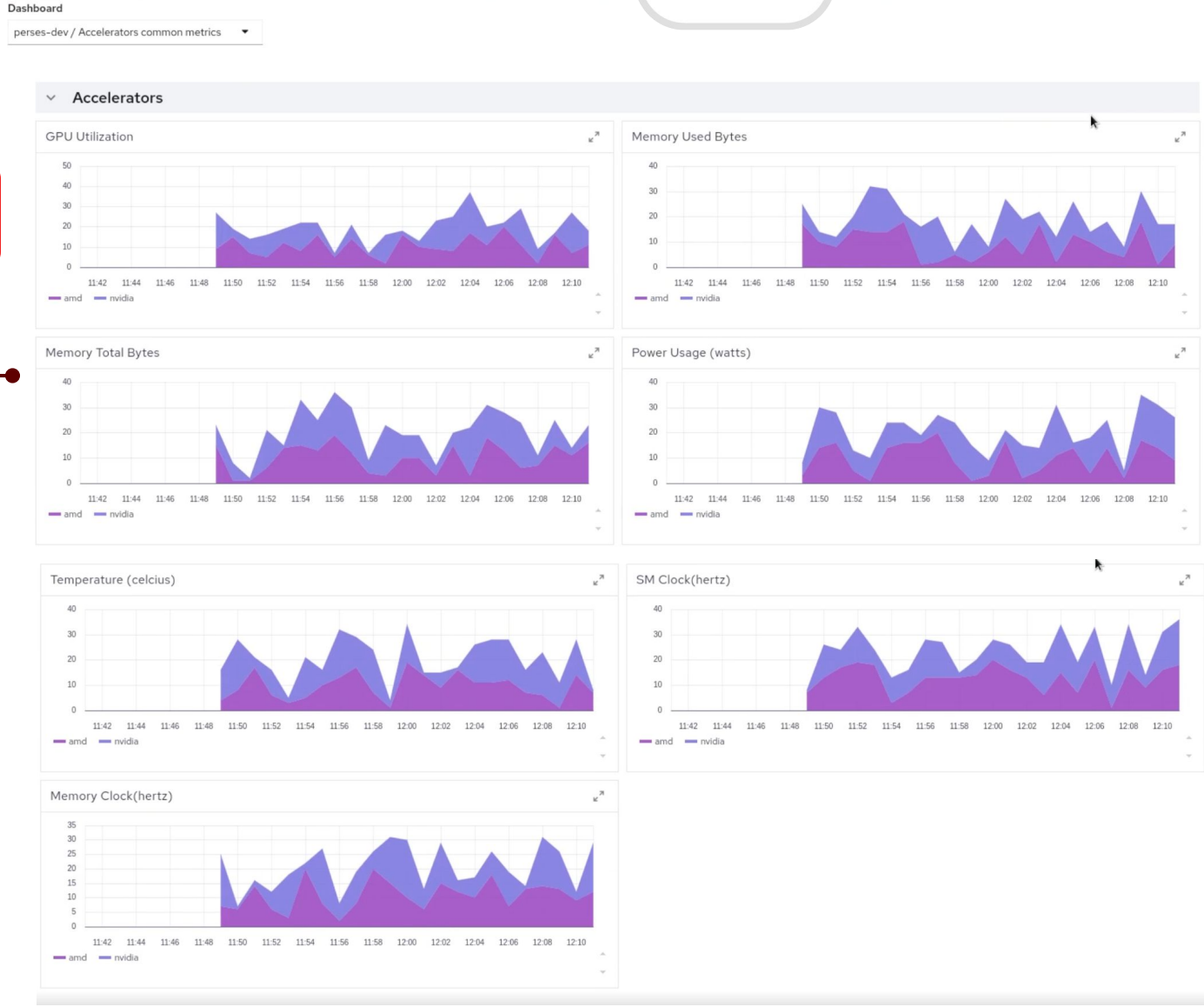
Observability & Sustainability

Red Hat

Observability

COO 1.2

Cluster Observability Operator



New Features

- Dashboards UI: **Accelerators** Dashboard
- Traces UI **GA**: Scatter Plot, Trace Table & Gantt Chart
- Traces UI: **Advanced** Filtering
- Logging UI: **OTEL** Support
- Enhancements in **Incident Detection** (TP)
- Enhancements in **Signal Correlation** (TP)

Product Managers: Vanessa Martini, Roger Floren

Observability

OpenShift Monitoring

OpenShift 4.19

New Features

- Prometheus **3.x** integration
- Promoted scrape profiles to GA
- Configuring external Alertmangers with proxy_url

Improvements

- **Alert** updates
  - Minor improvements, more runbooks
- Monitoring stack **components** updated
  - Alertmanager: 0.28.1
  - Prometheus Operator: 0.81.0
  - Prometheus: 3.2.1
  - kube-state-metrics: 2.15.0
  - node-exporter: 1.9.1
  - thanos: 0.37.2

Product Manager: Roger Floren

Red Hat

Observability

OpenShift Logging

Logging 6.3

Log Collection

- Cluster Logging Operator will expand the available Splunk metadata keys for easier log management
- Cluster Logging will support multiple CloudWatch outputs with STS authentication

Log Storage

- Loki will allow virtual host style configuration
- [Tech Preview] Loki will introduce resource limits

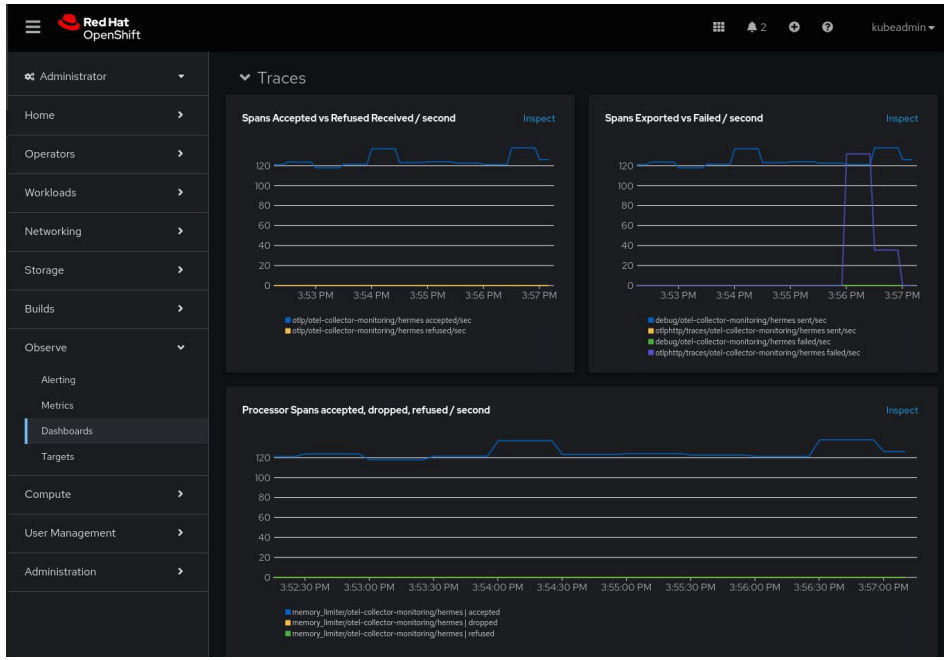
Product Manager: Jamie Parker

Observability

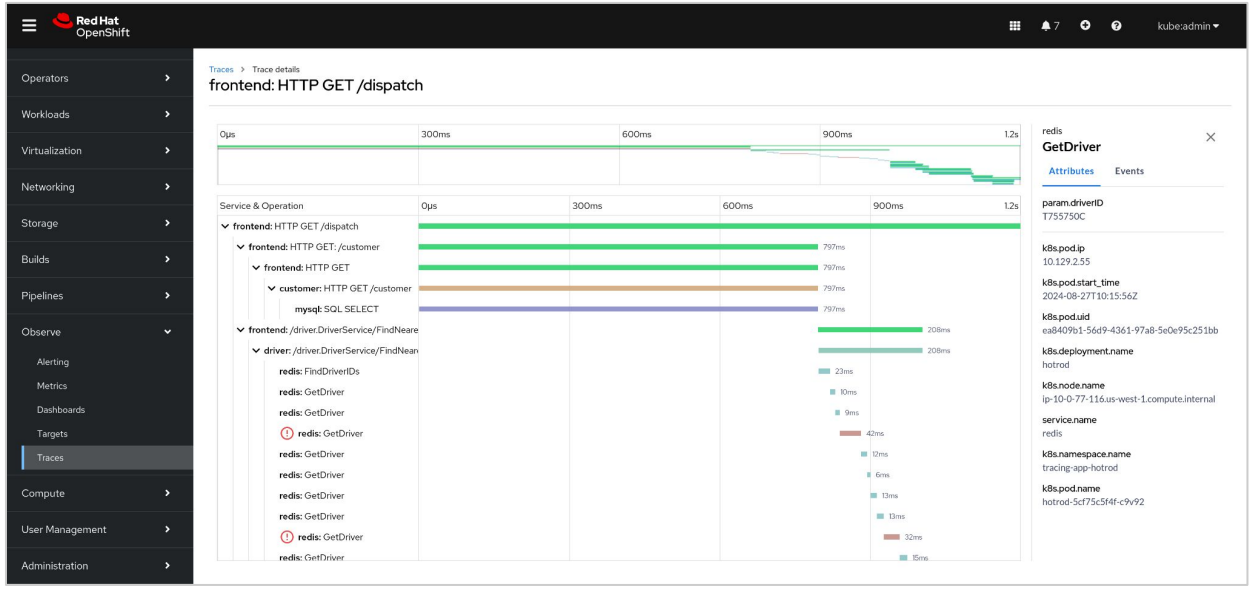
Application Observability & Integrations

Red Hat build of OpenTelemetry

- Components going **GA** in this release:
  - Prometheus Receiver
  - Attributes/ResourceAttributes Processor
  - Kafka Exporter
- [Tech Preview] **Tail Based Sampling** Processor



Distributed tracing



- **Fine Grained RBAC** for stored Tracing data
- Short Lived Token support for **Tempo** in **GCP** and **Azure**

Product Manager: Jamie Parker

Red Hat

Observability

Power Monitoring

Upcoming - Power monitoring 0.5 (2nd half July) - TP

Supports 4.17 → 4.19

Re-written core
Modular

- **Kepler** 0.10.0
  - Modular design
  - Improved accuracy
  - kepler-operator 0.17.0
- GA planned for Q4 2025

- **Supports (Bare-metal)**
  - Node
  - Pods
  - Containers
  - VM (Consuming)
  - Process

Product Manager: Roger Floren

Red Hat

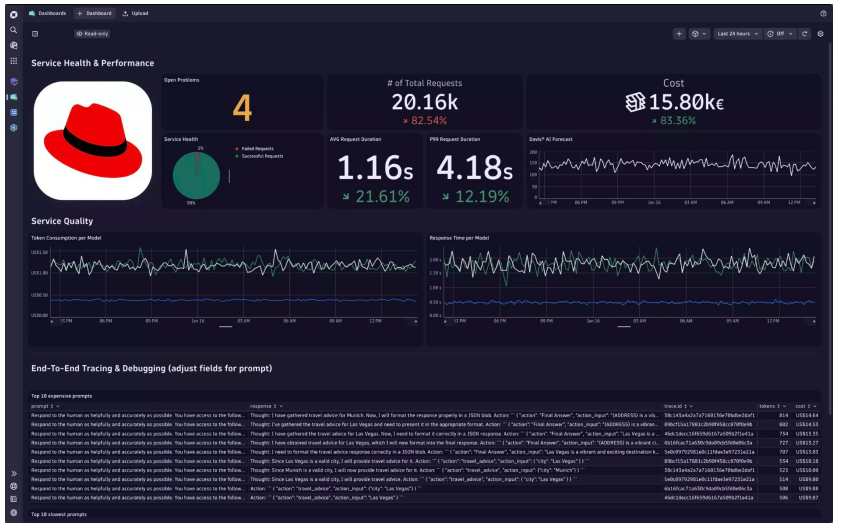
Observability

OpenShift Observability

AI ready

OpenTelemetry support for Large Language Models + integration with Dynatrace

- Uncover insights to optimize and refine performance of **generative AI** (gen AI) and **large language models** (LLM) workloads with **Red Hat OpenShift AI.**
- Enhance cloud operations and **ensure security posture compliance** for Center for Internet Security (CIS), Digital Operational Resilience Act (DORA), National Institute of Standards and Technology (NIST), and other standards
- **Assess, manage, and take action** on misconfigurations and compliance violations for regulatory compliance standards.



https://www.dynatrace.com/hub/detail/red-hat-openshift-ai/

https://developers.redhat.com/articles/2025/05/21/implement-llm-observability-dynatrace-openshift-ai

Console

Console

Console: Unified Perspectives

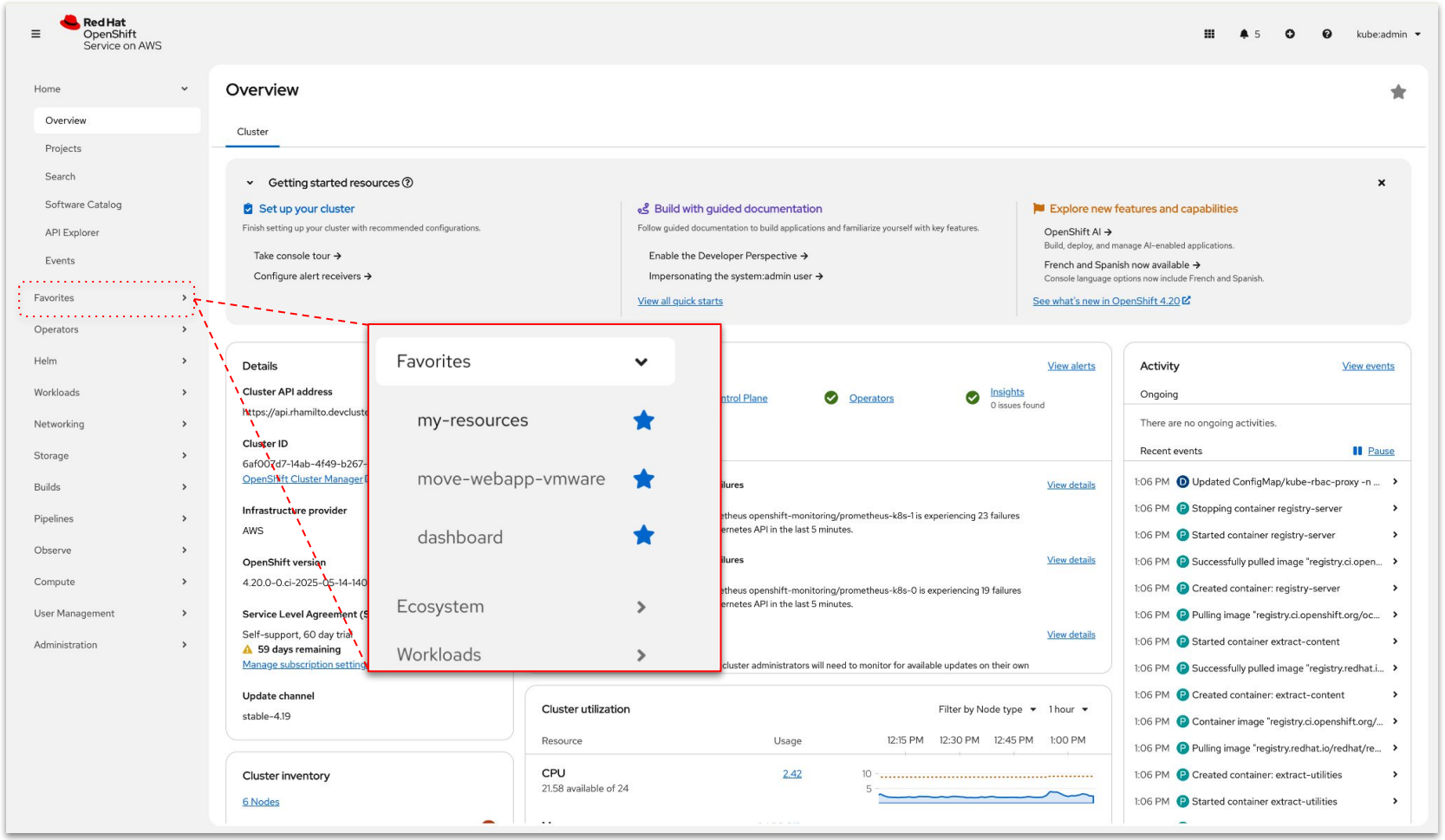
Admin & Dev views merged into a single view, streamlining the Openshift Console

Designed to...

- Reduce context switching, allowing users to complete end-to-end workflows without toggling views.
- Support hybrid roles, like Platform engineers, and reduce redundant workflows.

Comes with...

- New Guided Tour
- New favoriting Feature
- Improved Navigation
- Updated Design(Pattern Fly 6)
- Ability to re-enable Dev-only View



Product Manager: Ali Mobrem

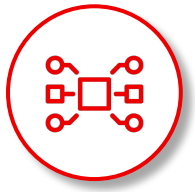
Red Hat

Developer Experience

OpenShift Dev Spaces

Version 3.21 is now available

Red Hat OpenShift Dev Spaces 3.21 is based on Eclipse Che 7.102



Connect Your Local JetBrains IDEs via JetBrains Gateway (Tech Preview)

You can now use JetBrains Gateway to connect your local JetBrains IDE (IDEA Ultimate, PyCharm, WebStorm, RubyMine, and CLion) to a remote Dev Spaces instance.

Customize settings, extensions, and product.json through a configmap

Administrators can now customize the settings.json, extensions.json, and product.json for VS Code using a configmap making editor customizations quicker and easier.

Configure two GitLab OAuth providers simultaneously

You can now configure two Gitlab OAuth providers on a single Dev Spaces instance which is especially useful for developers working on codebases hosted on both GitLab SaaS and on-premises

Configure user namespaces with an OpenShift Template

Admins can now leverage the OpenShift Template object and replicate the resources defined in it across the namespaces of all users such as: LimitRange, ResourceQuota ,NetworkPolicy, Role, and RoleBinding

Podman Desktop

5.9k !

Accepted as a Sandbox Cloud Native Computing Foundation (CNCF) project.

- **NEW:** Simpler registry mirroring configuration
- **NEW:** Improved Kubernetes Support - more objects are supported (pods, maps, secrets, etc.), new namespace switching and better performance!
- **NEW:** Search in Logs
- **NEW:** Prune only untagged images
- **NEW:** experimental features: status bar, tasks manager, and Kubernetes context monitoring

Extensions! Extensions! Extensions!

- **BootC**: Experiment with bootable containers on your desktop! Allows build, test and deployment of bootable containers.
- **Minc**: Start *MicroShift* in a container for development purposes.
- **RHEL VMs**: Run RHEL in VMs directly from Podman Desktop
- Podman Desktop is now available on RHEL 10

Release Notes

Red Hat

Podman AI Lab

Providing an easy way for application developers to get started with AI

Local Inferencing

- GPU Acceleration Support
- Now leveraging **Ramalama**
- Support for OpenVino

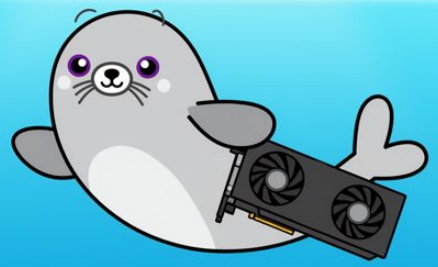
Experimentation Playground

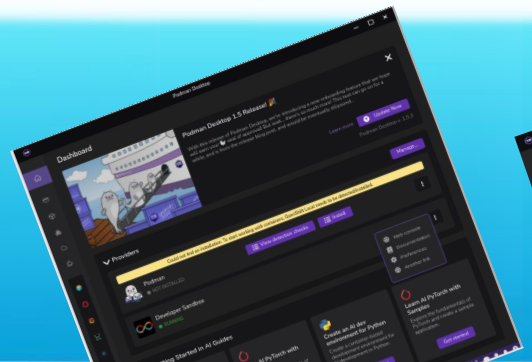
- Expanded Catalog of Recipes
- Access to Open AI API
- **Ollama** API compatibility
- MCP Support in Playground

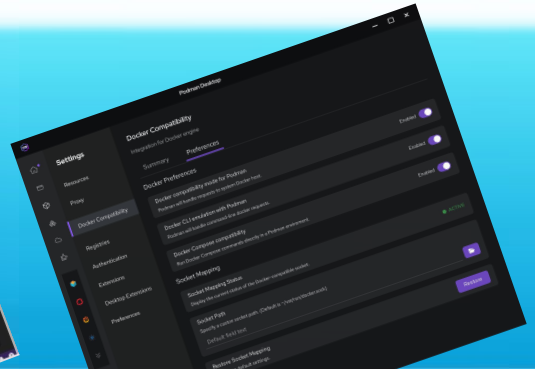
Agentic

- Easy start of **LLama Stack**
- Explore Llama Stack API
- Agents Recipes
- MCP Server Support
- **Podman MCP Server**

Try Podman NOW: podman-desktop.io





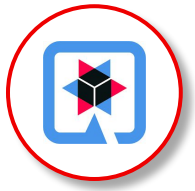


OpenShift Developer Experience

IDE Extensions and Cloud Developer Environment

OpenShift Toolkit for VS Code - 1.19.0

- IntelliJ OpenShift is no longer supported and has been removed from the JetBrains Marketplace
- OpenShift Pipeline Tasks in Cluster View has been added to the Application explorer
- Multiple K8s configuration files are supported when configured in KUBECONFIG environment variable



Quarkus Tools for VS Code and IntelliJ - 1.21.0

- Performance improvements in the Qute language server
- Support for Integer operators in Qute files
- Bug fixes/stability enhancements

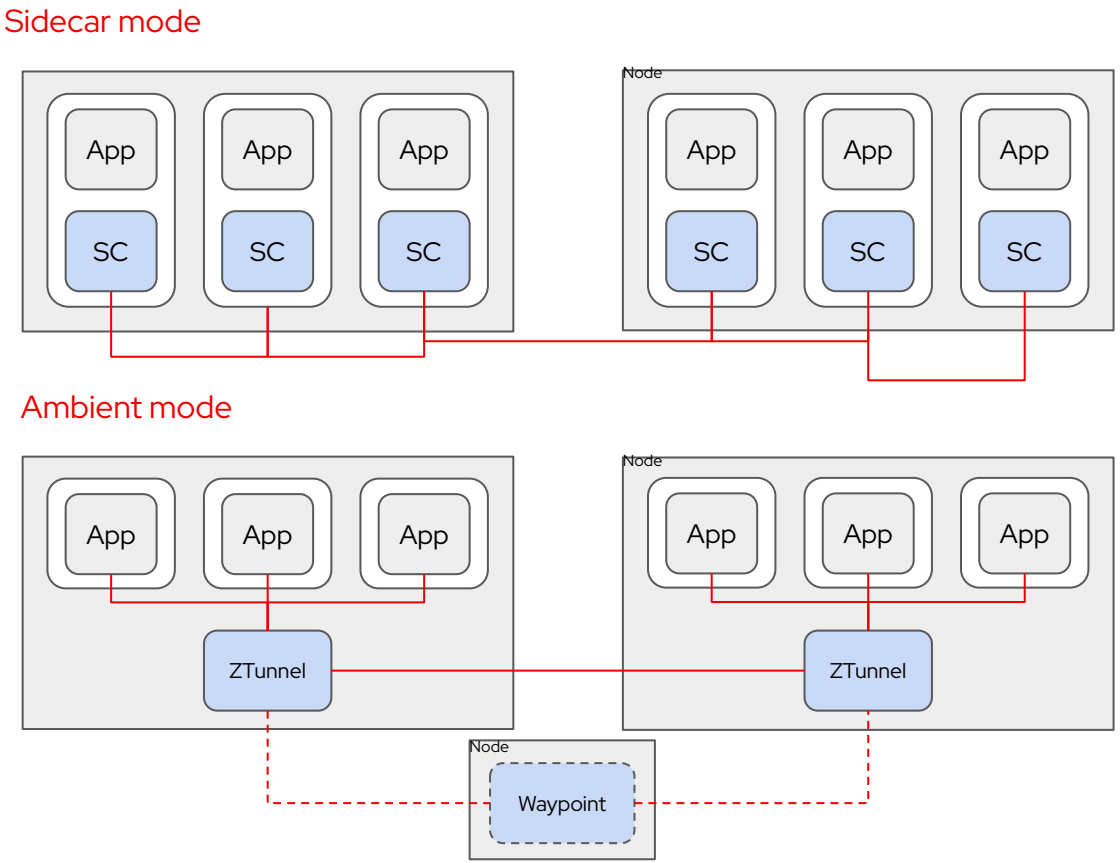
Language Server Protocol Plugin - 0.13.0

- Many performance improvements
- Language Server Installer API
- Debug Adapter Protocol (DAP) support
- Various LSP implementations

Platform Services

OpenShift Service Mesh

- OpenShift **Service Mesh 3.1** is coming soon:
  - Based Istio 1.26 and Kiali 2.11
  - End to end Kubernetes Gateway API support with OCP 4.19+
  - **Istio Ambient mode - Technology Preview**
    - **Easier to adopt - no sidecars!**
    - **Significantly less resource usage**
    - ZTunnel for **lightweight pod to pod mTLS encryption**
    - Independently scalable Waypoints for L7 mesh features.
- OpenShift Service Mesh 3.1 will be supported on OCP 4.16+.



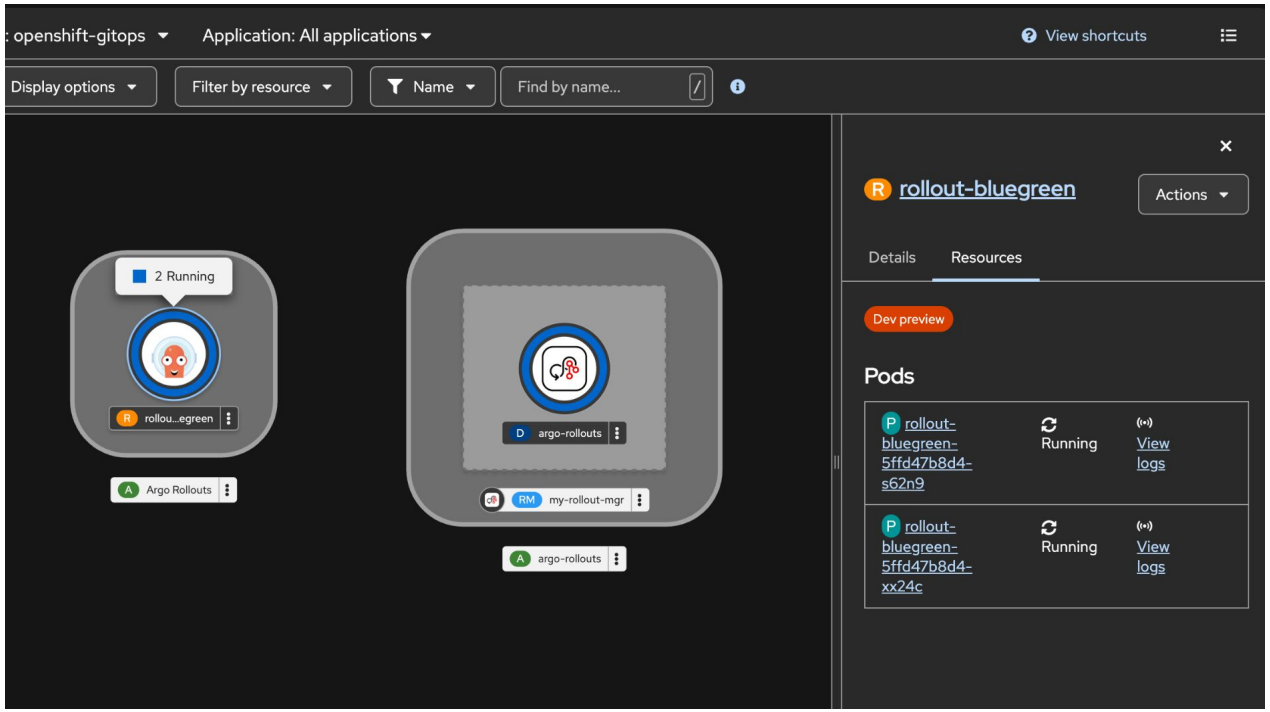
OpenShift GitOps

OpenShift GitOps **1.17** release

- Argo CD 3.0 and Argo Rollouts 1.8.0
- Argo CD Agent Tech Preview
- Argo Rollouts in the OpenShift Console

Customer requests:

- RFE-4607 JSON logging for all components



Product Manager: Harriet Lawrence

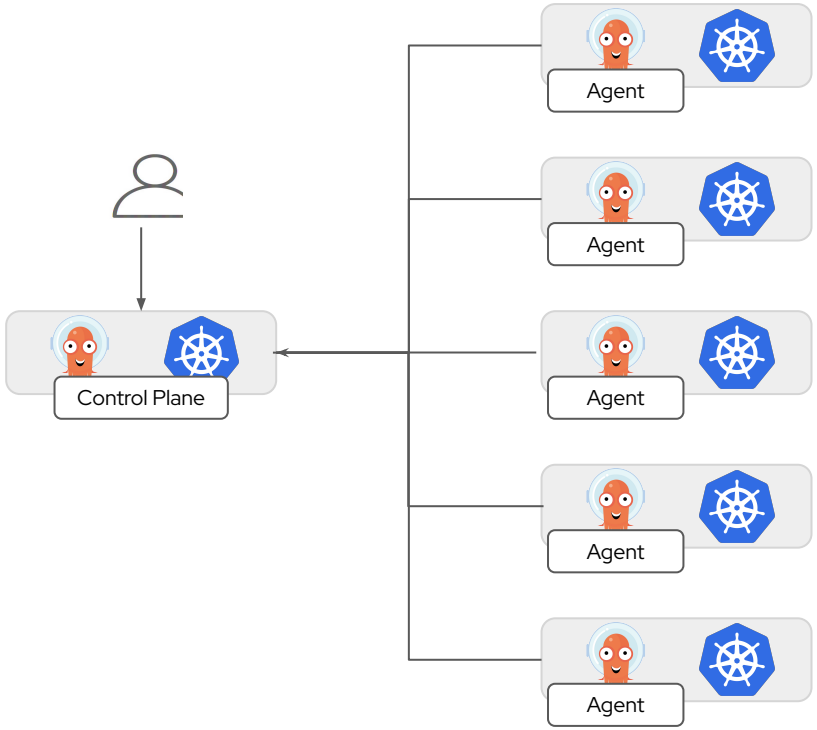
Red Hat

Multi-cluster GitOps with Argo CD Agent

Tech Preview

- Available in OpenShift GitOps 1.17.0
- Soon available as an RHACM Add-On

- One way communication Agent -> Control plane
- Reduce the footprint of hub and spoke clusters
- Resilient and flexible network connectivity



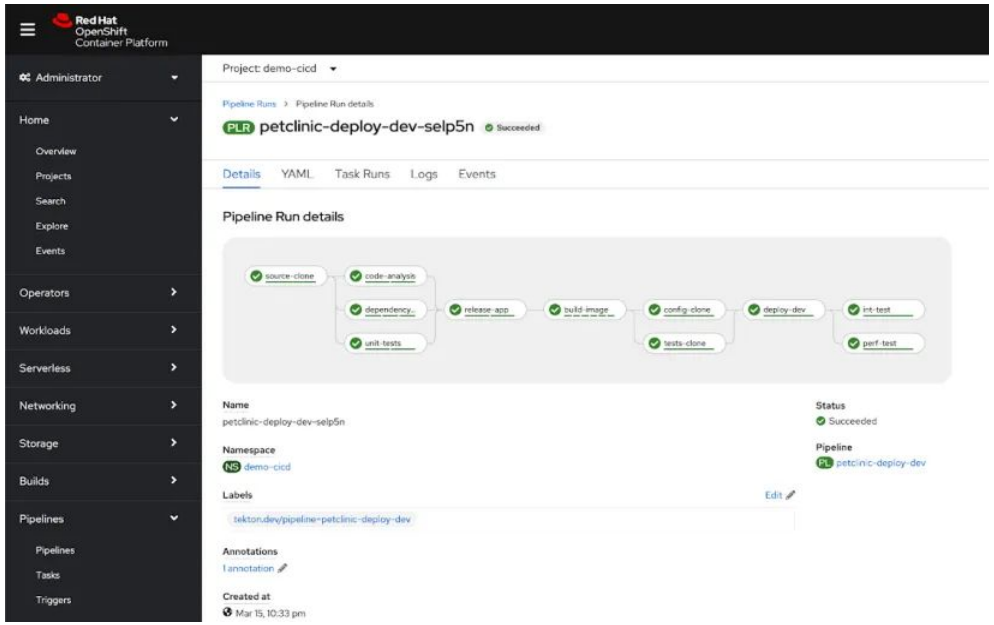
Product manager: Harriet Lawrence

Red Hat

Builds & Pipelines

OpenShift Pipelines 1.18

- Higher control on HA by adding StatefulSet Ordinals (Tech Preview)
- Introduce Tekton cache to optimize the image build time (Tech Preview)
- Pipelines-as-Code (PaC) features:
  - Automatic PipelineRun Cancellation (Tech Preview)
  - Trigger Pipelines by file changes, commit comments and labels
  - Pattern Testing Command (tkn pac info globbing)
- Tekton Results is General Availability (GA)



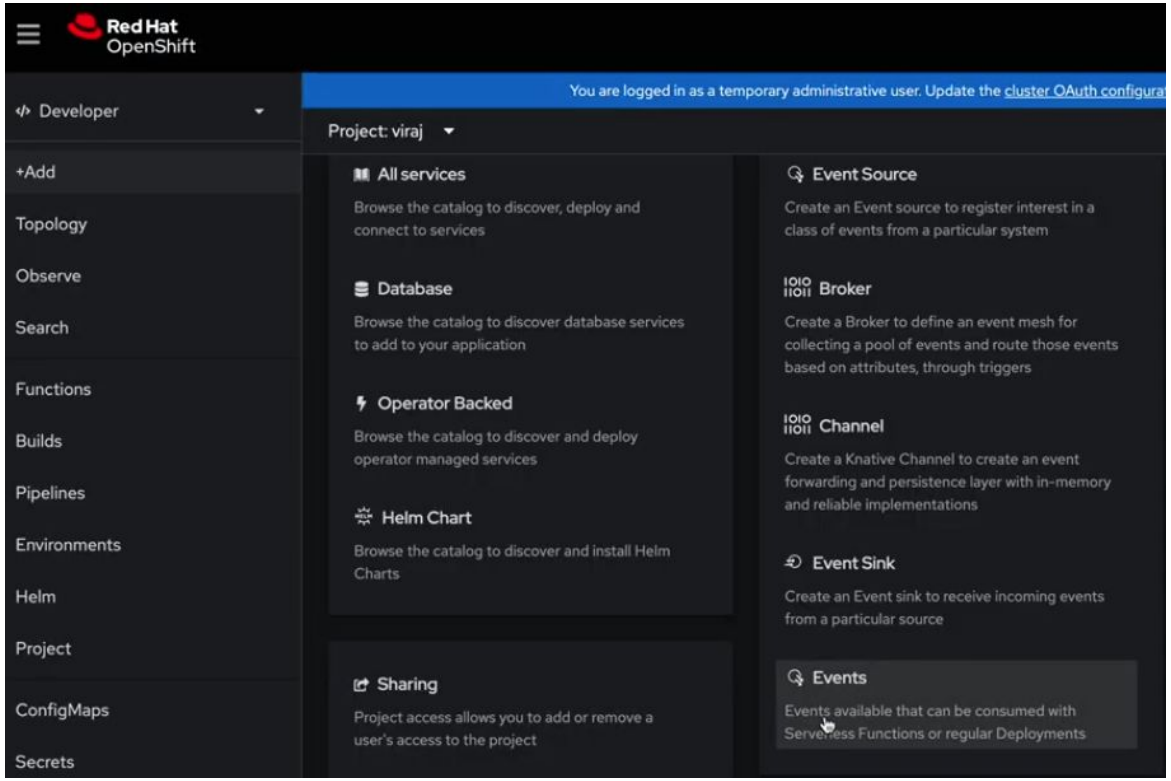
Builds for OpenShift 1.5

- Buildpacks build strategy (Tech Preview)
- BuildConfigs to Shipwright migration guide

Product Manager: Carlos Salinas

OpenShift Serverless

- Serverless 1.36 release based on Knative 1.16
- Functions Python middleware v2 is now TP
- Integration- Source and Sink is now TP
  - AWS-Connectors (S3, SQS, SNS & DynamoDB)
- EventTransform API is now TP
- Automatic EvenType registration is now TP
- Eventing Transport encryption is now GA
- Eventing AuthN and AuthZ is now DP
- Kn event plugin is now GA
- Long running requests for AI/ML use cases



Product Manager: Siamak Sadeghianfar

Red Hat

Red Hat Build of Keycloak

What's New

RHBK 26.0 (GA: Nov 13th, 2024) ; **RH-SSO ELS-1** (2 years)

Key Highlights of the new version:

- Multi-Organizations for a multi-tenancy concept for SaaS platforms, enabling support for B2B, B2C, and B2B2C use cases.
- Multi-Site HA active-active deployment support on AWS (see FAQ for more details)
- Persistent user sessions (or Durable Sessions across restarts)
- New Hostname options
- New Password hashing (Argon2)
- Java 21 support
- Improved Lifecycle Support Policies (see Notes)

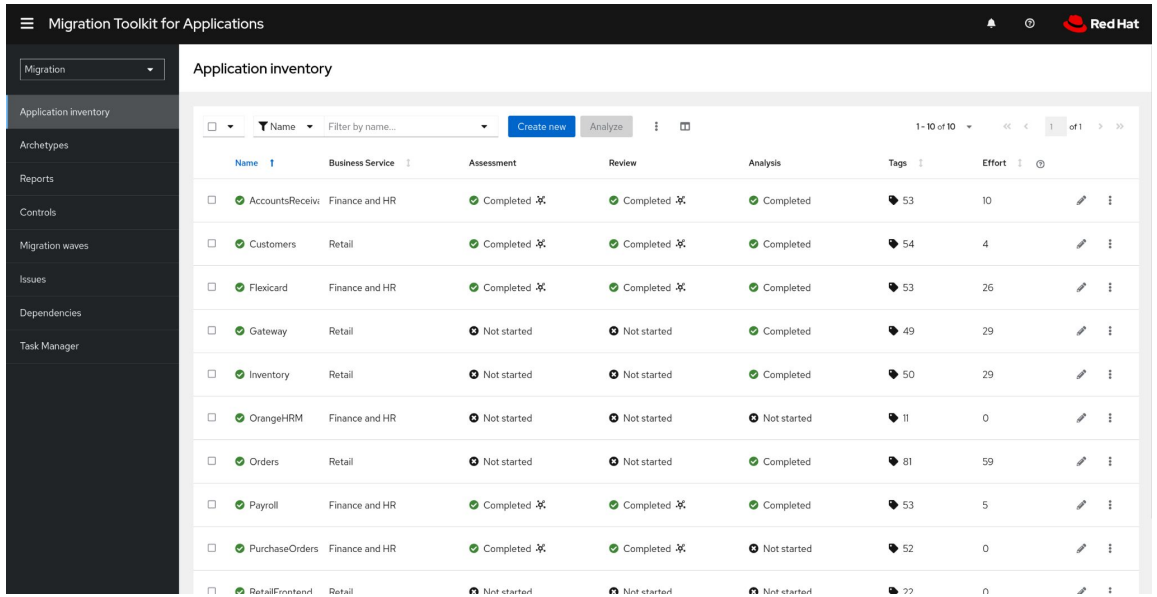
RH-SSO ELS-1 Availability (Jun 2025 - 2027) - more in KB Article

PMM: Jeff Beck

Migration Toolkit for Applications

Migration Toolkit for Applications 7.3

- New Migration Paths: Spring Boot 2 to 3 and Spring Framework 5 to 6.
- Support for Node.js and Python analysis (Tech Preview)
- Assets Generation in the MTA CLI (Dev Preview)
  - Enable MTA to generate all assets required to deploy an application on OpenShift.
  - Integrated with the Helm templating engine
- Upgrade from Red Hat Single Sign On to the Red Hat Build of Keycloak



Product Manager: Siamak Sadeghianfar (on behalf of Ramón Román Nissen)

Red Hat

Installation & Updates

OpenShift 4.19 Supported Providers

Installation Experiences

aws
Outposts
Wavelength
Local Zones

Azure
Azure Stack Hub
Alibaba Cloud (Tech Preview)

IBM Cloud
IBM Power Systems
IBM Z and
IBM LinuxONE

Bare Metal

Google Cloud

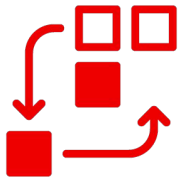
vmware vSphere

ORACLE Cloud Infrastructure

NUTANIX

Red Hat OpenStack Services on OpenShift

RED HAT OPENSTACK PLATFORM



Automated

Installer Provisioned Infrastructure

- Auto-provisions infrastructure
- *KS like
- Enables self-service

Full Control

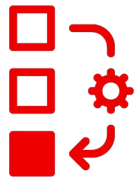
User Provisioned Infrastructure

- Bring your own hosts
- You choose infrastructure automation
- Full flexibility
- Integrate ISV solutions

Interactive – Connected

Assisted Installer

- Hosted web-based guided experience
- Agnostic, bare metal, vSphere and Nutanix
- ISO driven



Local – Disconnected

Agent-based Installer

- Restricted network (disconnected / air -gapped)
- Automatable installations via CLI
- Bare metal, vSphere, SNO
- ISO driven

Red Hat

Product Managers: Marcos Entenza (AWS, Azure, GCP, IBM Cloud, Oracle Cloud), Ju Lim (Alibaba), Ramon Acedo (BM, Nutanix, VMware), Linh Nguyen (BM), Peter Lauterbach (OCP Virtualization), Gil Rosenberg (OpenStack), Duncan Hardie (IBM Z & Power), Adel Zaalouk (HCP)

On-premises

Installation Highlights for On-premises Providers

Bare Metal

- Bare Metal as a Service Support for OpenShift (TP)
- Metal3 Support for Network Controller Sideband Interface (NC-SI)
- Bare Metal Cluster API Provider (CAPI) (TP)

vmware vSphere

- OpenShift Zones support for vSphere Host Groups (TP)
- Provide API to disable vSphere CSI (GA)
- vSphere multi-NIC VM creation support in the IPI installer (TP)
- Support vsphere in-tree migrated volume resize (GA)
- MachineSet - Support of more than one disk (TP)

NUTANIX

- Support Nutanix in Agent-based Installer (GA)

IBM Power Systems IBM Z and IBM LinuxONE

- Support for new IBM Systems
- Differentiate between bare metal and VM nodes
- IBM Z root volume LUKS encryption

Multi- Arch

- Support for Multi-arch in Builds

Product Managers: Michael ZasepaRamon Acedo Rodriguez, Linh Nguyen, Duncan Hardie

Red Hat

OpenShift oc-mirror **v2**

Phase 1: Cosign tag-based discovery for SigStore-style signature support

Secure your offline content: oc-mirror v2 now mirrors *SigStore signatures*

- **Expanded security**: oc-mirror v2 in OpenShift 4.19 introduces the ability to **mirror** container images along with their **associated Cosign tag-based SigStore signatures**.
- **Offline verification ready**: This enhancement is crucial for enabling **scalable** and **flexible validation** in disconnected environments, ensuring the integrity and authenticity of your mirrored Red Hat content.
- **Default behavior & control in this 4.19 release**:
  - Signature mirroring is **disabled by default**. Enable it with `--remove-signatures=false`
  - **Granular control** over signature mirroring is available via `registries.d` configuration (**e.g., per registry**, **namespace**, or **image**).

Product Manager: Tony Wu

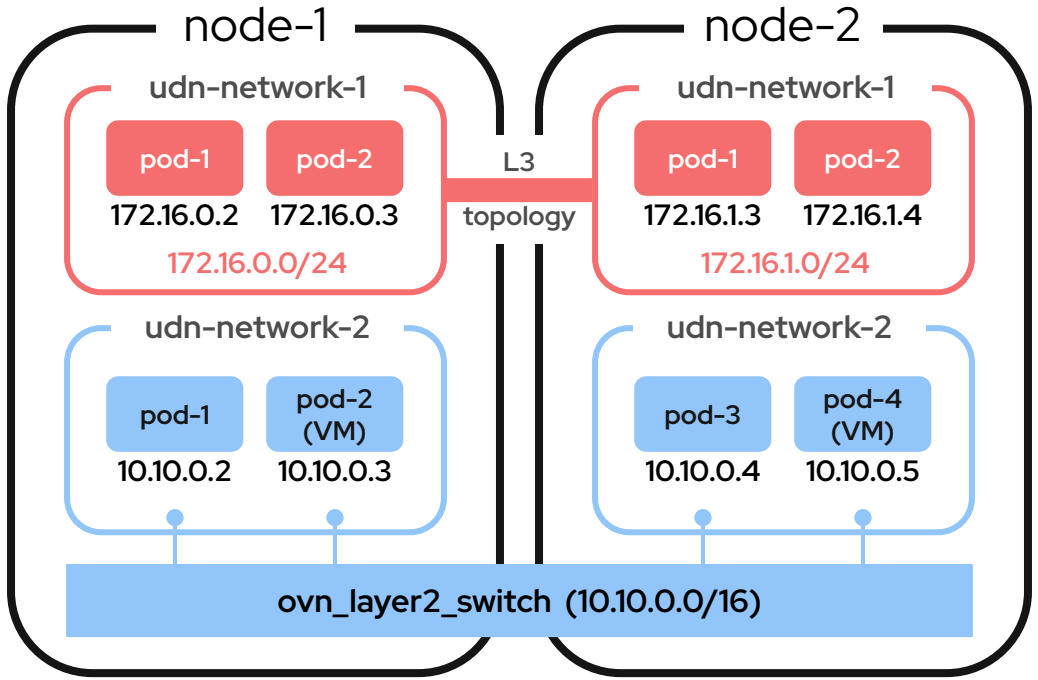
Red Hat

Networking & Routing

Native Network Isolation for Namespaces

A better solution for the monolithic layer 3 Kubernetes pod network

- **User Defined Network (UDN)** support in OVN-Kubernetes
- A default network for OVN-Kubernetes components + VRF support for additional **isolated-by-default** UDNs
- One or more namespaces in each UDN (tenant)
- A namespace can be connected to different UDNs, each meant for a specific purpose
- Support for:
  - OpenShift Virtualization
  - static IP assignments for the life of VMs (for OCP Virt)
  - L2, L3 & localnet UDN topologies
  - overlapping pod IPs across UDNs
  - Kubernetes Network Policy
  - clusterIP services and external services
  - BGP (GAs in a 4.18.z, EVPN integration targeting 4.19)



- Extend UDN into provider networks, so a VM can be directly referenced by its (static) L2 network address, rather than requiring NAT translation at the cluster edge
- Existing secondary networks (Multus) are not impacted

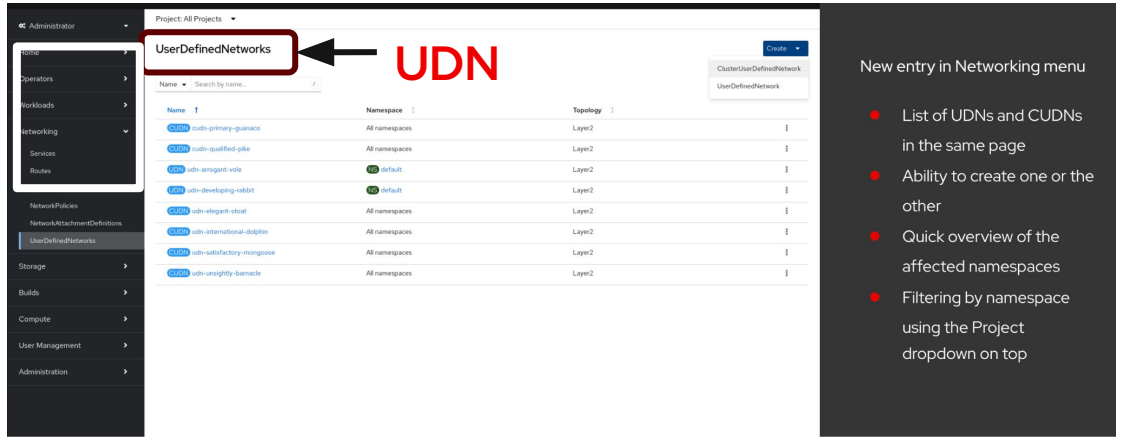
Red Hat

Product Managers: Marc Curry, Deepthi Dharwar

Network Observability

Network Observability Operator

- **New release: v1.9**
- **User Defined Networks Support**
- **IPsec tracking**
- Net Observ CLI improvements
- Improved agent and Flow Processing filtering
- Migrate to Patternfly 5
- OVN Observability Sampling [Tech Preview]
- Network Observability integration with eBPF Manager [Tech Preview]



Syntax: netobserv [flows|packets|metrics|follow|stop|copy|cleanup|version] [options]

CLI

commands:

flows	Capture flows information in JSON format using collector pod.
packets	Capture packets information in pcap format using collector pod.
metrics	Capture metrics information in Prometheus using a ServiceMonitor (OCP cluster only).
follow	Follow collector logs when running in background.
stop	Stop collection by removing agent daemonset.
copy	Copy collector generated files locally.
cleanup	Remove net observ components and configurations.
version	Print software version.

Product Managers: Marc Curry, Deepthi Dharwar

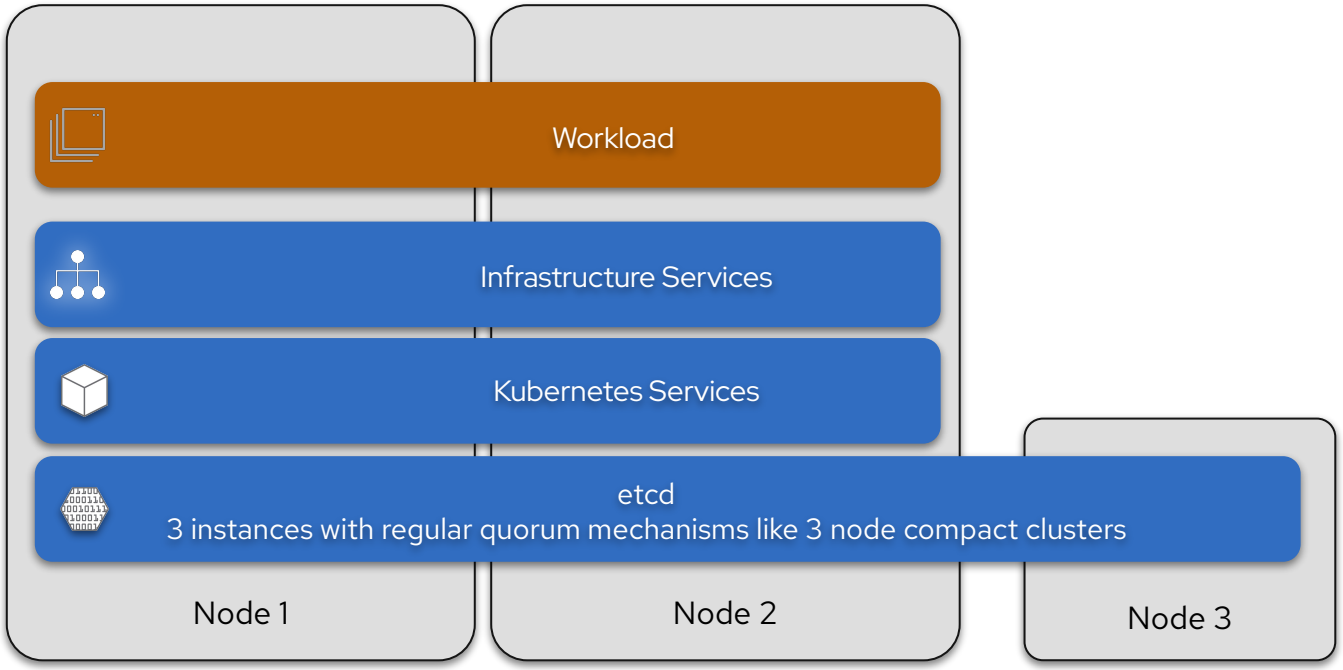
Red Hat

Edge

Two Node OpenShift with Arbiter – Tech Preview

What it is:

- Two node solution for cost sensitive customers
- Small arbiter node, running only 3d etcd instance
- Technically a three node cluster
- Arbiter Node is a regular node and could be used to run additional components/workload
- Arbiter node can be co-located (e.g Dell PowerEdge XR4000 with witness sled)
- Arbiter node has to be within <500msec max effective end to end latency (incl. Disc io)
- OCP Virtualization fully supported
- Hyperconverged Storage / SDS via Partners
- X86 and Arm, bare metal only



Tech Preview Scope:

- IPI Bare Metal install only - Agent Based and Assisted Install planned for V4.20
- Arbiter Min Sys Reqs: 4C / 16G / 120G SSD - likely to drop in V4.20

Red Hat Device Edge and MicroShift

Red Hat Device Edge with MicroShift is a Kubernetes distribution derived from OpenShift designed for small form factor devices and edge computing.

OpenShift AI Model Serving (TechPreview)

- Uses RHOAI RawDeployment mode based on kserve
- Deploy kserve manifests / models
- Use RHOAI supported ServingRuntimes also on MicroShift

Observability with OpenTelemetry (TechPreview)

- Send observability data like monitoring, events, logs from edge to central core
- Lightweight OTel collector - no local prometheus
- Use any OTLP compatible endpoint
- Allows for local persistent data buffering during dark network periods
- Pre-Defined baseline profiles for small/medium/large data collection

RHEL image mode (General Available)

- Simplify CI/CD by leveraging container tools for workload and the operating system (e.g. an OCI container registry, bootc etc.)
- base image with MicroShift already included available

Enhanced config options

- Use custom certificates
- TLS Security Profiles / Cipher Configuration
- Support Client TLS / mTLS at ingress

Product Manager: Daniel Fröhlich

Red Hat OpenShift

Thank you

Guided demos of new features on a real cluster
learn.openshift.com

OpenShift info, documentation and more
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