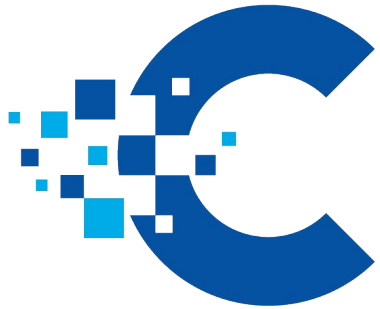
Powering the Hybrid Cloud

A Year in Review of RHEL and OpenShift on IBM Power



Common Europe Congress

June 15, 2026
Lyon, France

Red Hat | IBM

Who I am

- Alfonso Cancellara
- Technical Account Manager, OpenShift @ Red Hat
- Working on selected customers using OpenShift on IBM Power

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Red Hat Enterprise Linux 10

The platform for grand ambition

Innovate

Boost innovation across the hybrid cloud

Protect

Operate confidently with security in mind from the start

Simplify

Optimize your business with a singular platform

Trust

A foundation to transform technology together

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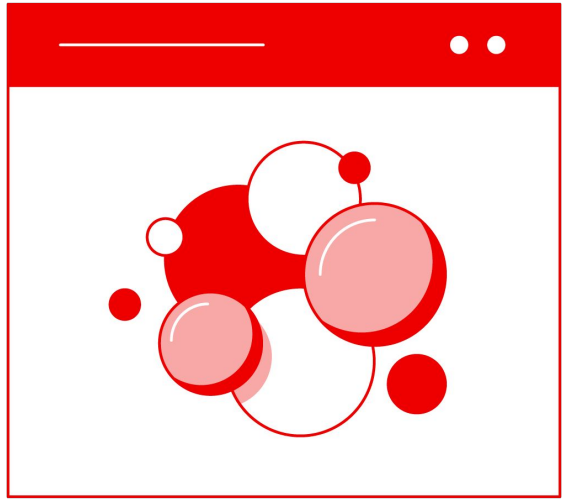
Red Hat Enterprise Linux Lightspeed

Addressing the Linux skills gap

Proactive guidance, knowledge, and recommendations



Command line assistant

Use plain language to simplify the way you interact with RHEL

Use GenAI to easily automate tasks, accelerate workflows, and troubleshoot RHEL systems, ultimately improving efficiency and reducing the skills gaps within IT organizations.

Red Hat Insights image builder package recommendations

Make better decisions with recommendations and actionable guidance

Discover packages that are likely to be relevant—improve the RHEL experience and provide more value.

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Post-quantum cryptography

Protect against attacks and fulfill future regulatory requirements

Adding quantum-resistant algorithms to RHEL

More planned for subsequent releases

Red Hat has already been working on the requirements to meet post-quantum cryptography challenges for some time now in order to help our customers protect their data against “harvest now: decrypt later” attacks and fulfill future regulatory requirements.

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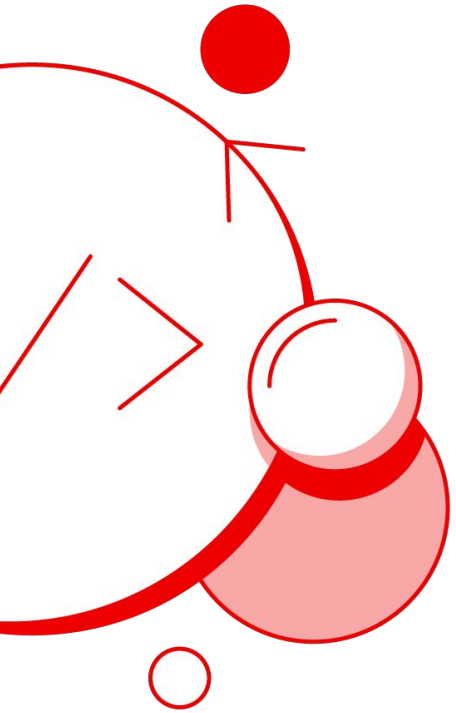
New developer features and enhancements

The following are now available



Go Toolset 1.26 - new default garbage collector

LLVM Toolset 21 - new ThinLTO backend

Rust Toolset 1.92 - expanded capabilities and safety improvements

Ruby 4.0 - reactor improvements, performance improvements, and better separation with “Ruby Box”

PHP 8.4 - improved debugging, object property hooks, and more

OpenJDK 25 - enhancements to java spec, multiple bug fixes and performance improvements

Git 2.51 - new stash export/import, path walk, more efficient storage, and more

PostgreSQL 18 - performance improvements, async I/O support, faster db upgrades, and more

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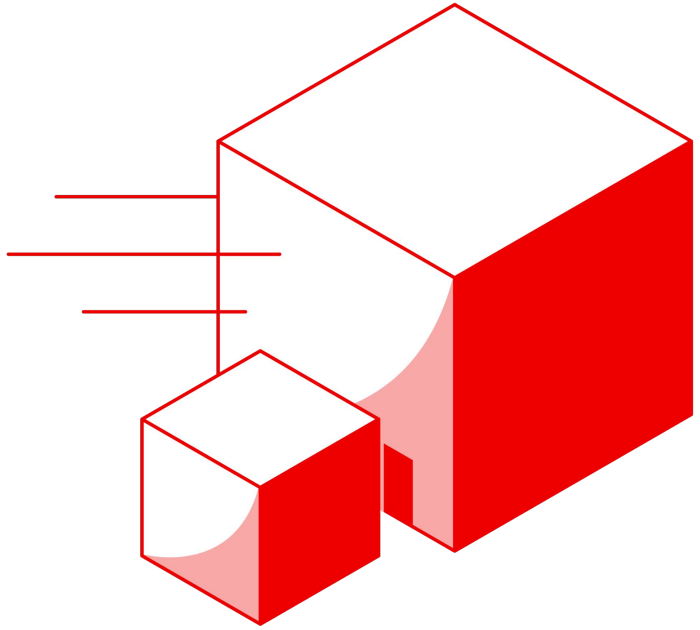
Image mode for Red Hat Enterprise Linux

A uniform and convenient method for deploying the operating system

Image mode for RHEL is a simple, consistent approach to build, deploy and manage the operating system using container technologies.



Bootc images from scratch

Gain full control over environments, enabling customized solutions for every need and ensuring precise control over included content.

Compliance hardening

Apply the same security hardening profiles across package and image modes for RHEL systems to simplify compliance requirements.

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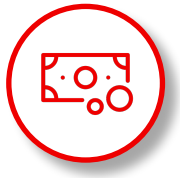
Realignment of Red Hat Enterprise Linux for IBM Z & IBM Power

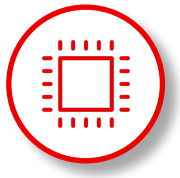


New Sales Model

- IBM becomes the primary sales and support engine for RHEL on Z and Power systems.
- New SKUs are restricted to new hardware sales and **new workloads** as determined by an agreed existing install base (renewals allowed thereafter).

Streamlined Support Structure

- **IBM provides L1/L2** support, acting as the first point of contact for customers.
- **Red Hat provides L3 support** to IBM, ensuring deep engineering backing for complex issues.
- Maintains a seamless "one-partner" experience for IBM hardware clients.



Architecture Agnostic Pricing

- **Price Flattening:** Aligns pricing across all architectures (x86, ARM, Z, Power)
- **New VDC Offering:** The new SKU offering will introduce unlimited VM pricing. Subscriptions allow for unlimited RHEL guest virtual machines on a 2-socket physical host.
- **New VDC for SAP:** The new SKU offering will introduce unlimited VM pricing. Subscriptions allow for unlimited RHEL guest virtual machines on a 2-socket physical host.

Existing Customer Continuity

- No forced migration for current installations; renewals follow the original purchase path.

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Red Hat OpenShift

Container Platform

Innovate

Boost innovation across the hybrid cloud

Protect

Operate confidently with security in mind from the start

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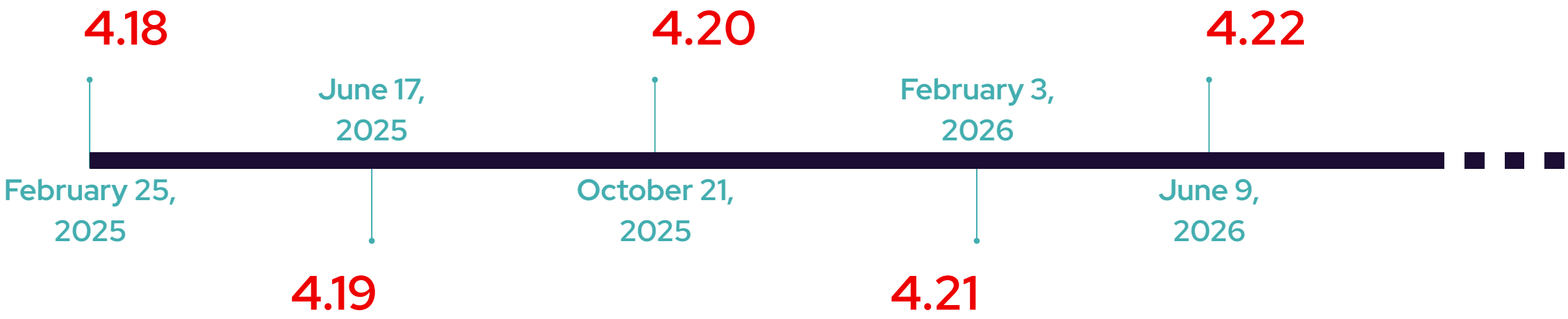
Past 18 months of OpenShift releases



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4.18	Kubernetes 1.31 “Elli”	
4.19	Kubernetes 1.32 “Penelope”	
4.20	Kubernetes 1.33 “Octarine”	
4.21	Kubernetes 1.34 “Of Wind & Will”	
4.22	Kubernetes 1.35 “Timbernetes”	

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Console: Unified Perspectives

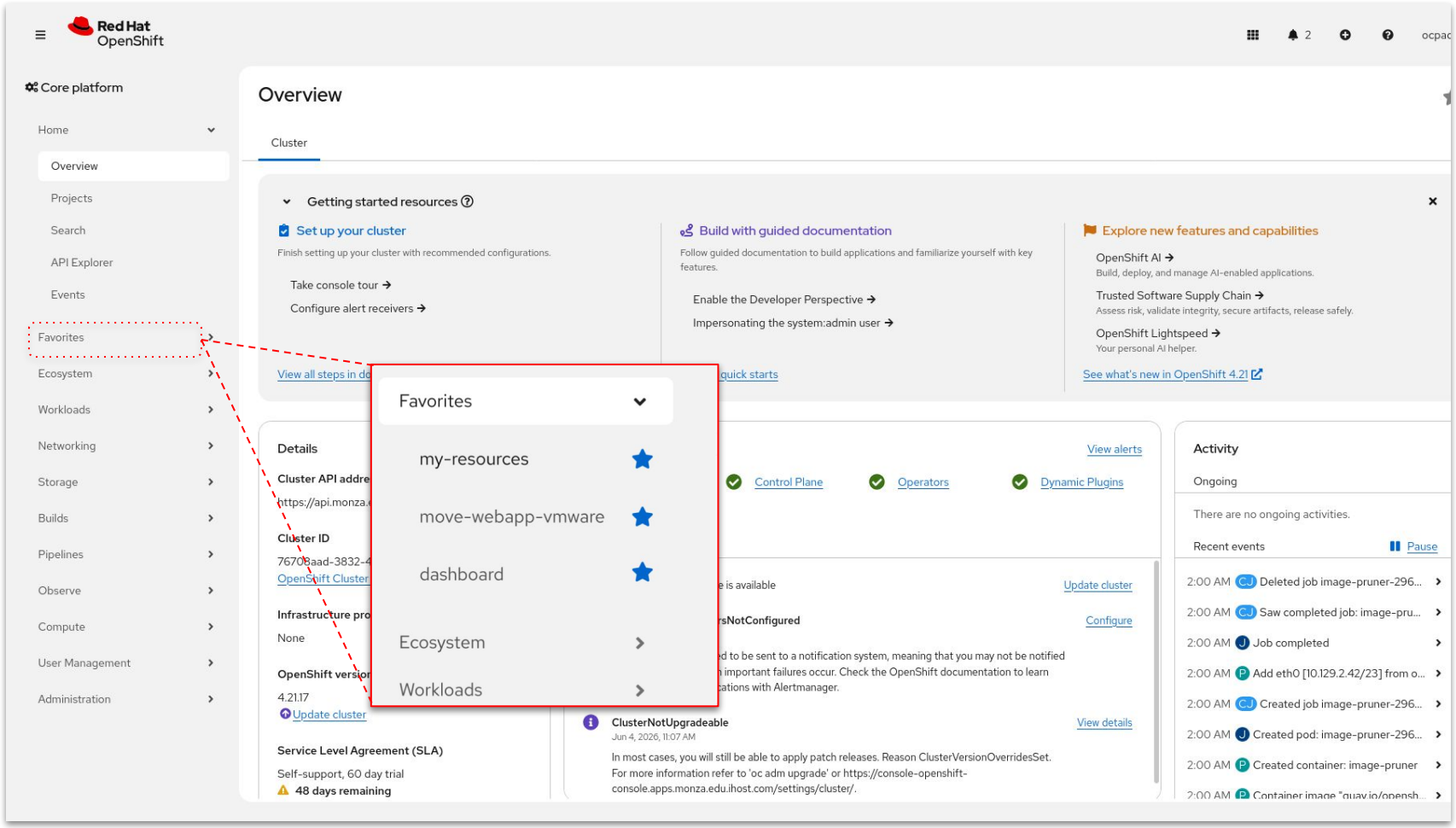
Admin & Dev views merged into a single view, streamlining the Openshift Console

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



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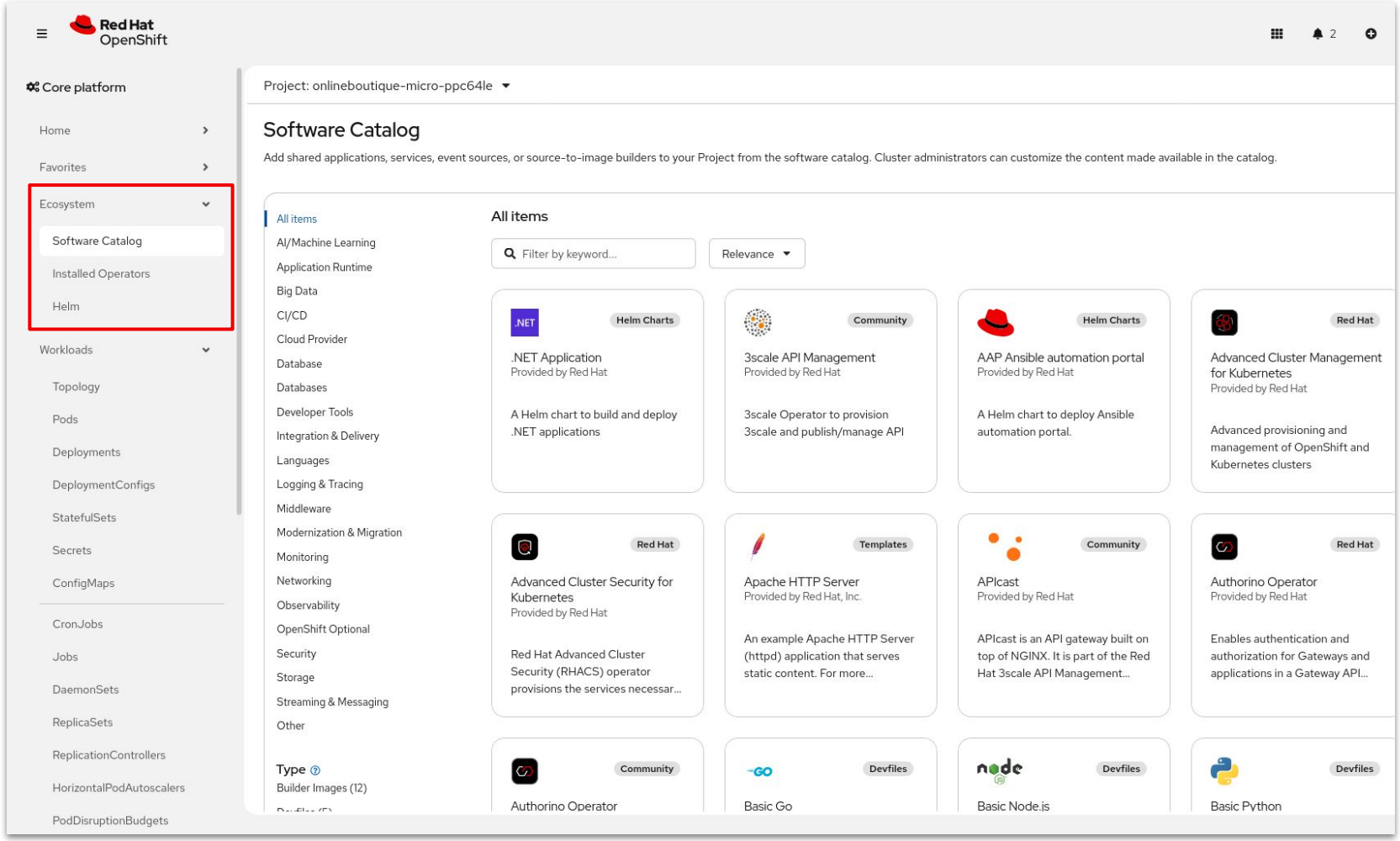
Console: Unified Software Catalog

One location to manage all software that runs on your cluster

Designed to Simplify!

- New Ecosystem Navigation Menu
- Merged Dev Catalog and Operator Hub
  - Previous Content merged into a Single Catalog for simplification
- Three Sub Menus
  - Software Catalog
  - Installed Operators
  - Helm



Find issues prior to Performing OpenShift Updates

Use ***oc adm upgrade recommend*** to show:

- The next version recommended to update
- Precheck feature: Important alerts which can affect updates

This allows users to check cluster before an update.

- Read-only command and does not alter the state of your cluster

```
$ oc adm upgrade recommend

Failing=True:

  Reason: ClusterOperatorNotAvailable
  Message: Cluster operator monitoring is not available

The following conditions found no cause for concern in updating this cluster to later releases:
recommended/NodeAlerts (AsExpected), recommended/PodImagePullAlerts (AsExpected)

The following conditions found cause for concern in updating this cluster to later releases:
recommended/PodDisruptionBudgetAlerts/PodDisruptionBudgetAtLimit/1

recommended/PodDisruptionBudgetAlerts/PodDisruptionBudgetAtLimit/1=False:

  Reason: Alert:firing
  Message: warning alert PodDisruptionBudgetAtLimit firing, which might slow node drains.
Namespace=openshift-monitoring, PodDisruptionBudget=prometheus-k8s. The pod disruption budget is
preventing further disruption to pods. The alert description is: The pod disruption budget is at the
minimum disruptions allowed level. The number of current healthy pods is equal to the desired healthy
pods.
https://github.com/openshift/runbooks/blob/master/alerts/cluster-kube-controller-manager-operator/PodDisr
uptionBudgetAtLimit.md

Upstream update service: https://api.integration.openshift.com/api/upgrades_info/graph
Channel: candidate-4.18 (available channels: candidate-4.18, candidate-4.19, candidate-4.18, eus-4.18,
fast-4.18, fast-4.19, stable-4.18, stable-4.19)

Updates to 4.18:
  VERSION     ISSUES
  4.18.32     no known issues relevant to this cluster
  4.18.30     no known issues relevant to this cluster
And 2 older 4.18 updates you can see with '--show-outdated-releases' or '--version VERSION'.
```

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Control Plane Security & Scalability

Post-Quantum Cryptography

PQC in Control Plane Components

Assessment and roadmap for migrating OpenShift control plane certificates and cryptography from quantum-vulnerable RSA/ECC to post-quantum algorithms, future-proofing clusters against quantum computing threats.

Network Policies

Network Policies Applied to Control Plane Components

Control plane components protected by default Network Policies preventing lateral movement, unauthorized access to etcd/API server, and achieving CIS Kubernetes benchmark compliance

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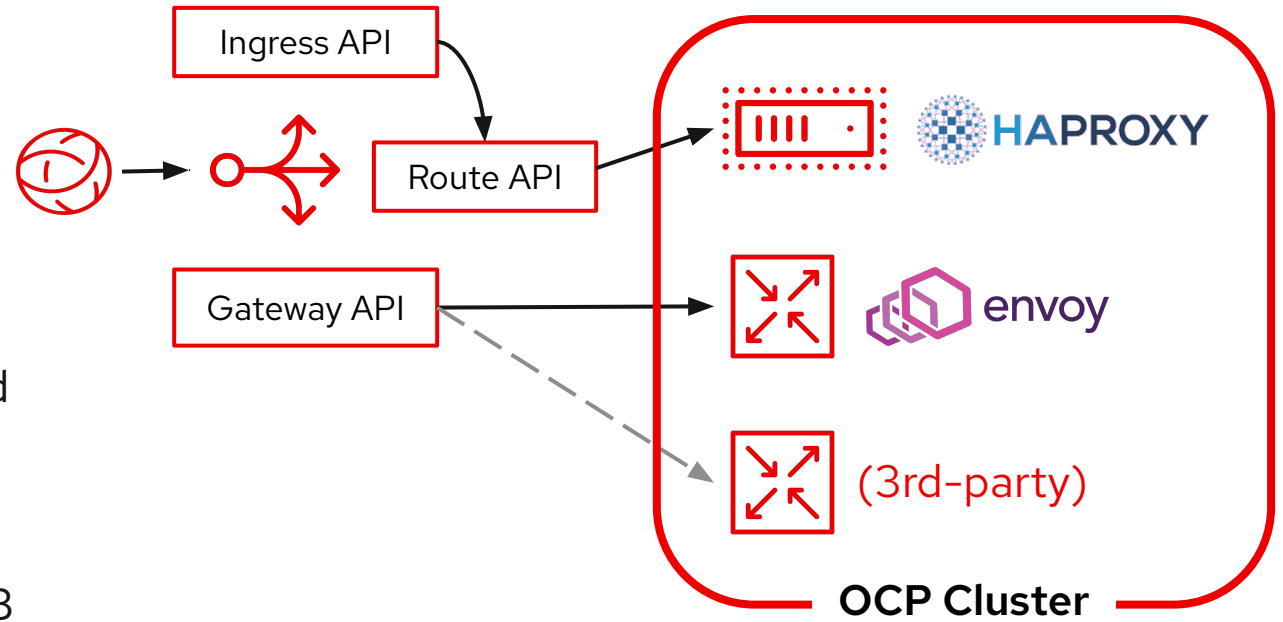
Gateway API on OpenShift

Kubernetes' next-generation standard for service networking

- 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

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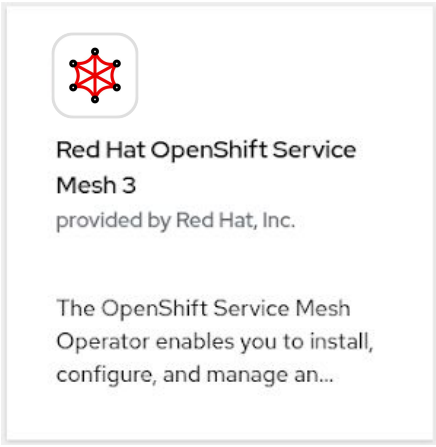
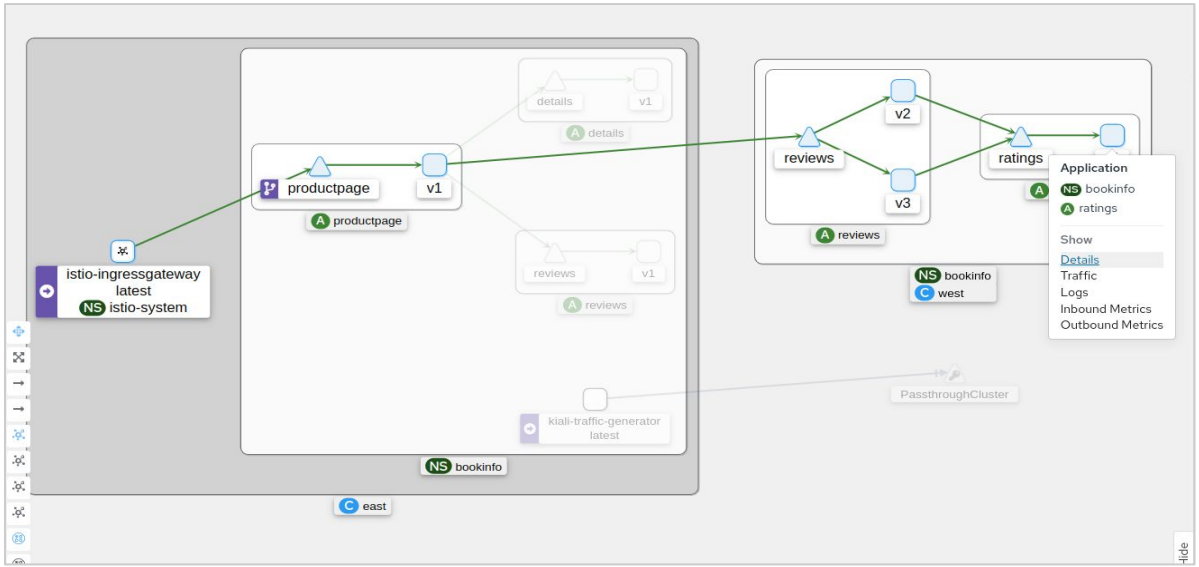
OpenShift Service Mesh

- OpenShift **Service Mesh 3.0 General Availability**:
  - Based Istio and Kiali
  - Managed by a **new Istio operator** based on community Istio - the "Sail Operator"
  - New Service Mesh 3.0 documentation
  - Supported migration paths from OpenShift Service Mesh 2.6
  - New included features:
    - Istio's multi-cluster topologies
    - Canary control plane upgrades
    - *Istioctl* command line utility
  - "sidecar-less" **ambient mode**





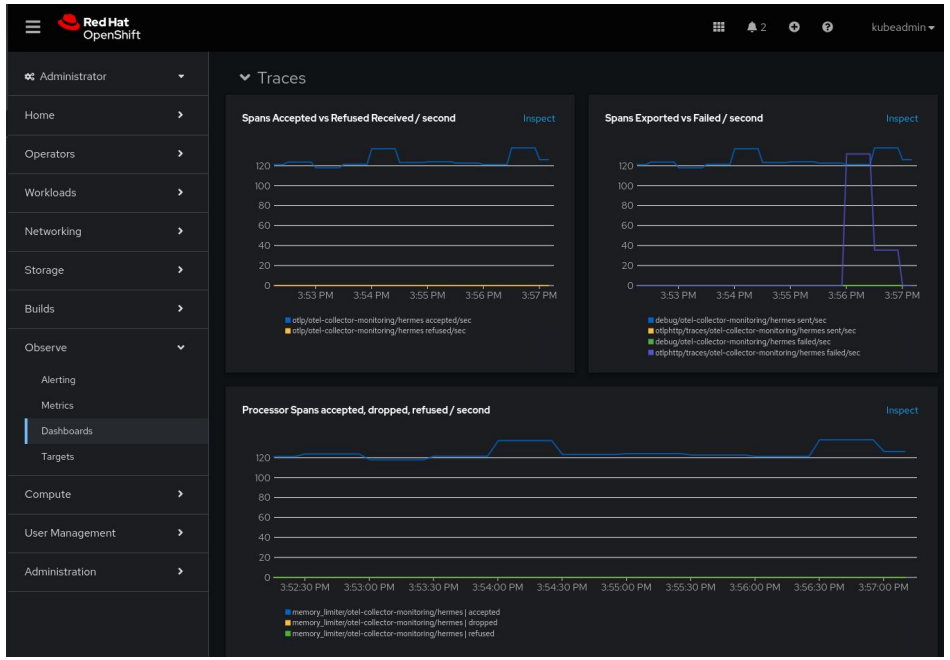
Observability

New stack based on Vetor, Loki, Tempo

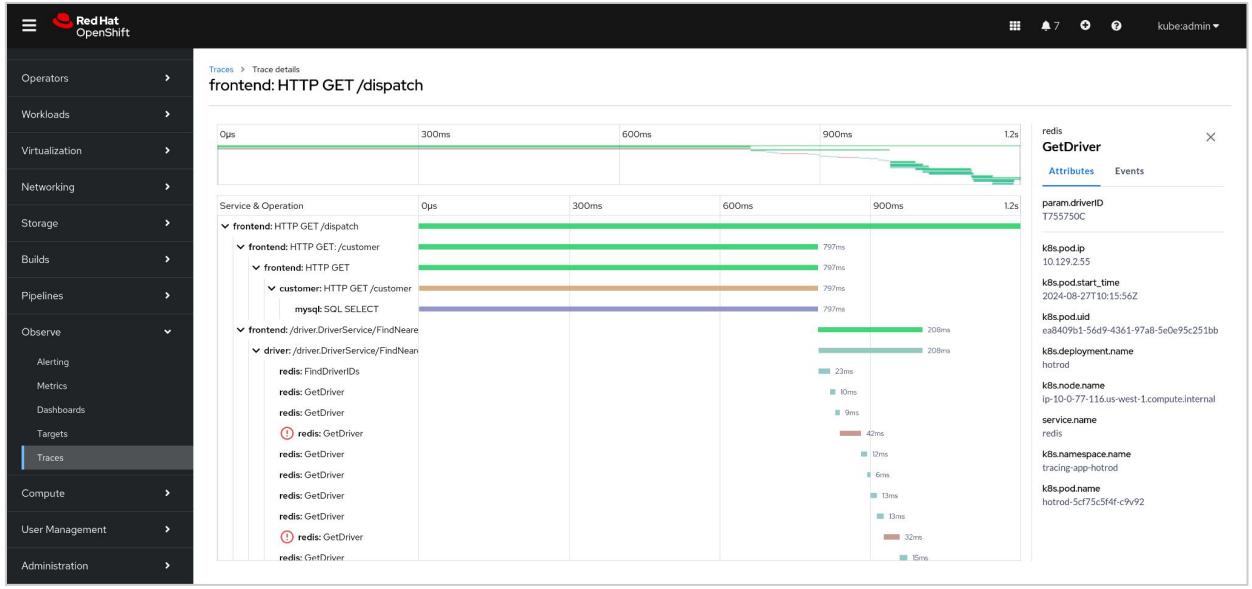
Observability

Red Hat build of OpenTelemetry

- Automated RBAC for **OpenTelemetry** components
- Export OpenShift Monitoring Metrics via **OTLP**
  - Kubestats
  - Hostmetrics



Distributed tracing



- **Fine Grained RBAC** for stored Tracing data
- Support for IBM Cloud Object Storage in **Tempo**
- **Tempo** monolithic memory handling improvements

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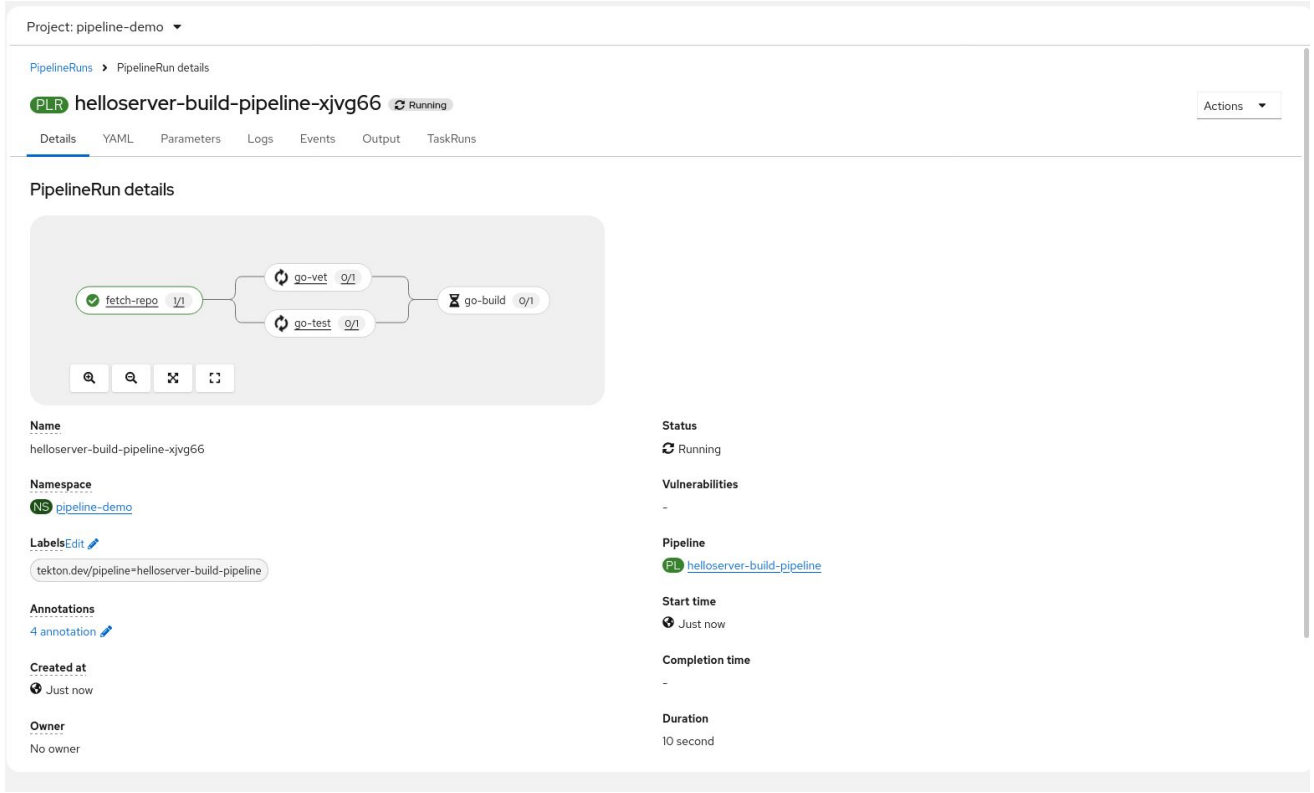
OpenShift Pipelines

Integrated CI (Continuous Integration)

Release Highlights:

- **Integration with OCP Console**
- **Event-driven Pruner and Tekton Cache**
- **Pipelines-as-Code (PaC) features**
- **Override individual TaskRun timeouts within a PipelineRun**
- **Support Kubernetes-native user namespace isolation**
- **Hardened controllers and webhook containers: readOnlyRootFilesystem set to true**
- **Better Prometheus Support**



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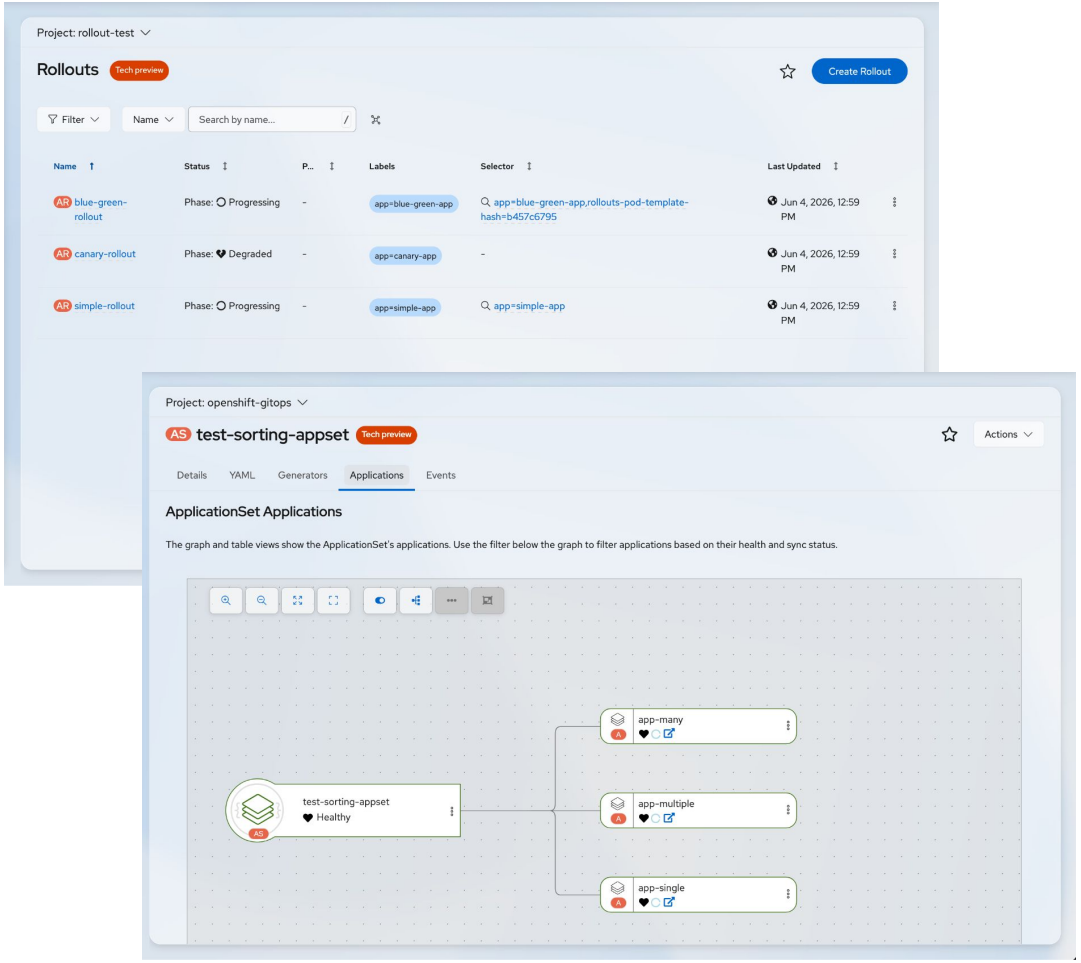
OpenShift GitOps

Integrated CD (Continuous Delivery)

Release Highlights:

- **Core Component Upgrades** - Argo CD 3.4, Argo Rollouts 1.9, and Argo CD Agent 0.9.
- **Argo CD Image Updater (GA)** - Automated generation of Pull/Merge Requests for container image updates.
- **Argo CD CLI (GA)** - Promoted to General Availability for full enterprise support stability.
- **OpenShift Console Plugin/UI (TP)** - New views include ApplicationSets topology, and pages for Argo Rollouts, and Image Updater.
- **Hybrid Architecture (TP)** - Enables push and pull-based architecture within the same Argo CD instance; simplifying the transition from Classic to Argo CD Agent.



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OpenShift features for IBM Power

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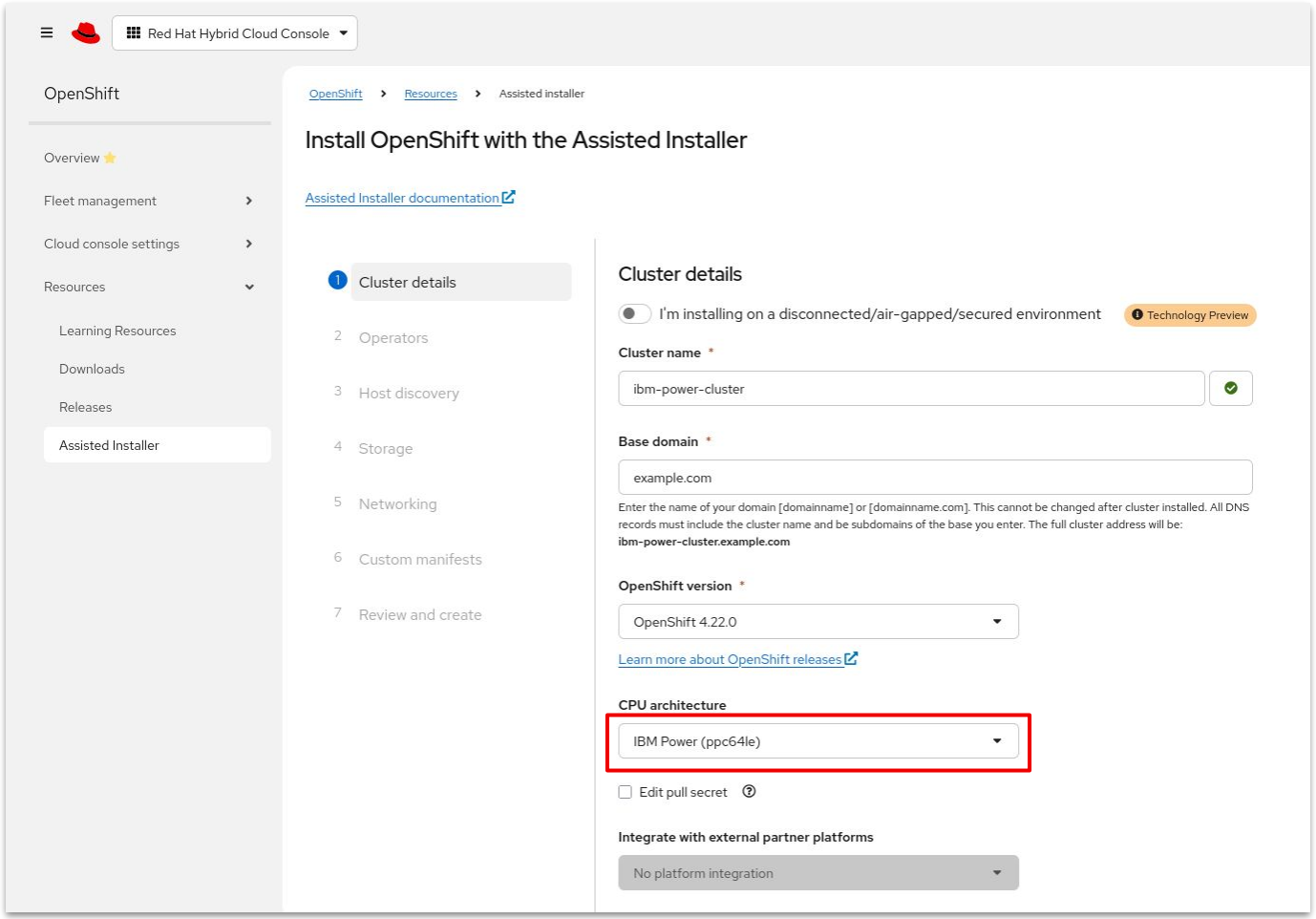
Installation



- Support for IBM Power 11
- Add compute nodes as a day 2 operation using Agent Based Installer
- Automated install (IPI) support for IBM PowerVC

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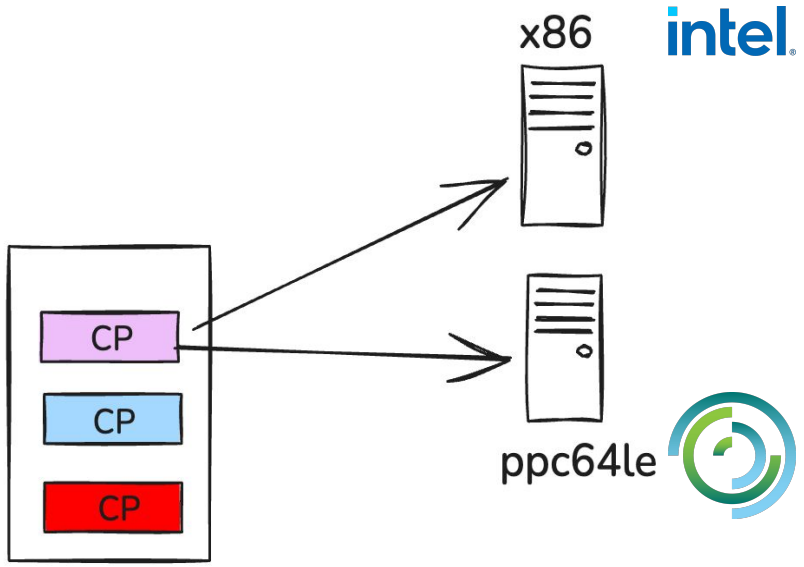
Hosted Control Plane

Heterogeneous NodePools with Agent

Support for heterogeneous NodePools via the Agent Platform including **IBM Power**.

E.g, Deploy an x86 Hosted control plane and to add at least one NodePool running with a ppc64le architecture.



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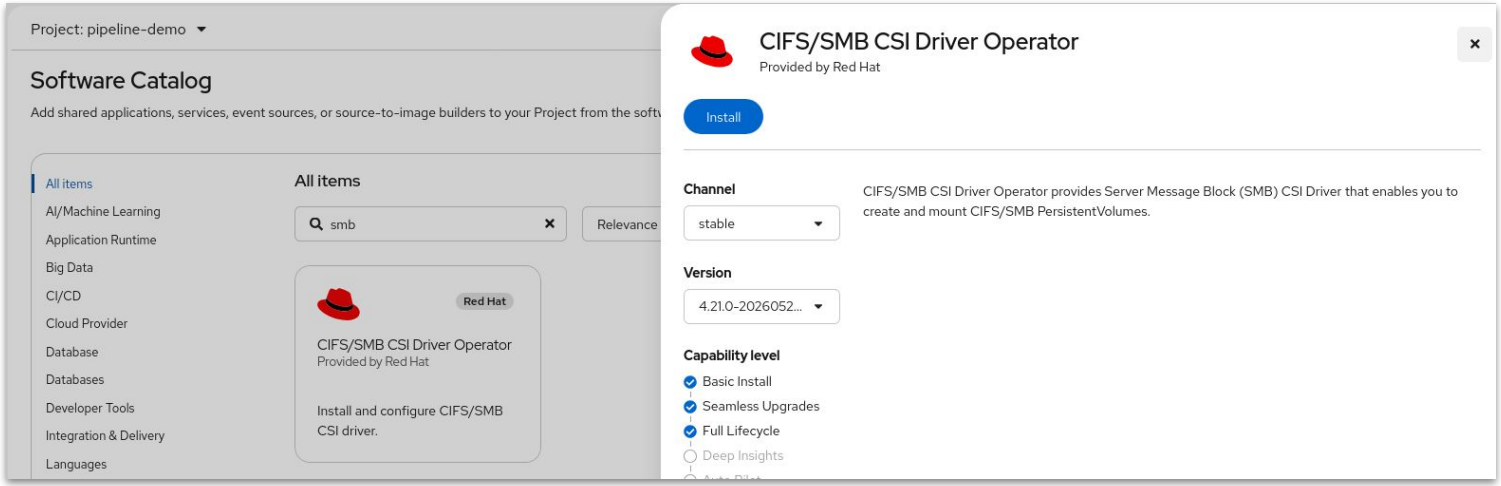
Additional features



CI/CD

- OCP Builds system on Arm, **IBM Power** and IBM Z

Operators & Drivers

- **IBM Power** support for SMB

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AI Accelerators

Spyre AI Accelerator supported in OpenShift with the AIU Operator

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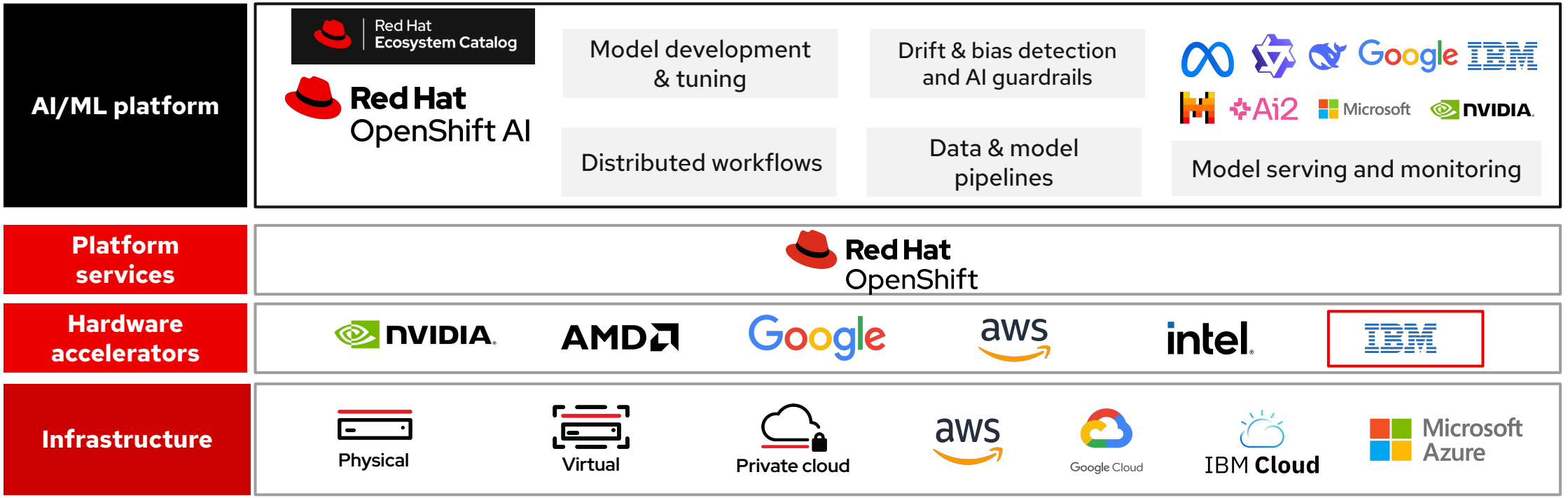
Red Hat OpenShift AI

One platform for generative and predictive AI



Single platform to run any model, on any accelerator, on any cloud

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OpenShift AI compatibility matrix with IBM Power

IBM Power (ppc64le) architecture

RHOAI Operator Version		3.3		3.4
OpenShift Supported Versions		4.19.9+, 4.20, 4.21		4.19.9+, 4.20, 4.21, 4.22
Chipset Architecture		ppc64le		ppc64le
Components	**Status**	**Version**	**Status**	**Version**
Dashboard	GA	2.0.0	GA	2.0.0
Data science pipelines	GA	2.5.0	GA	2.16.0
Argo Workflows	GA	v3.6.7	GA	v3.7.3
Distributed Inference with llm-d	-	-	-	-
Feature Store	TP	0.59.0	TP	0.62.0
KServe	GA	0.15	GA	0.17.0
Red Hat AI Inference (2)	-	-	GA	3.4.0
Kubeflow v1 Training Operator	Deprecated	1.9.0	Deprecated	1.9.0
Kubeflow Trainer v2	-	-	-	-
Kuberay	-	-	TP	1.4.2
Llama Stack Operator	-	-	TP	0.9.0
LMEval	GA	0.4.8	GA	0.4.8
MaaS	-	-	-	-
MLflow	-	-	-	-
AI Hub	GA	0.3.5	GA	0.3.9
TrustyAI	GA	1.37.0	GA	1.37.0
Workbenches	GA	1.10.0	GA	1.10.0

https://access.redhat.com/articles/rhoai-supported-configs-3.x

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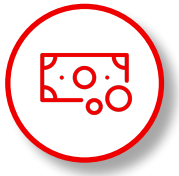
Realignment of OpenShift for IBM Z & IBM Power



New Sales Model

- IBM becomes the primary sales and support engine for OpenShift on IBM Z (s390x) and IBM Power (ppc64le) systems.
- New SKUs are restricted to **new workloads on z16/z17 - P10/P11** (renewals allowed thereafter).

Streamlined Support Structure

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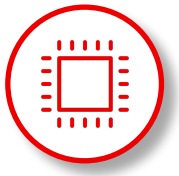
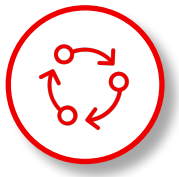


Architecture Agnostic Pricing

- **Price Flattening:** Aligns pricing across all architectures (x86, ARM, Z, Power) for advanced services like ACM and ACS.
- **New Bare Metal Offering:** Introduces node-level pricing for IBM systems, moving beyond the traditional core-only model.
- Expanded Portfolio: **OpenShift Kubernetes Engine (OKE)** is available on Z and Power for the first time



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Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.

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