# Red Hat Summit 2023

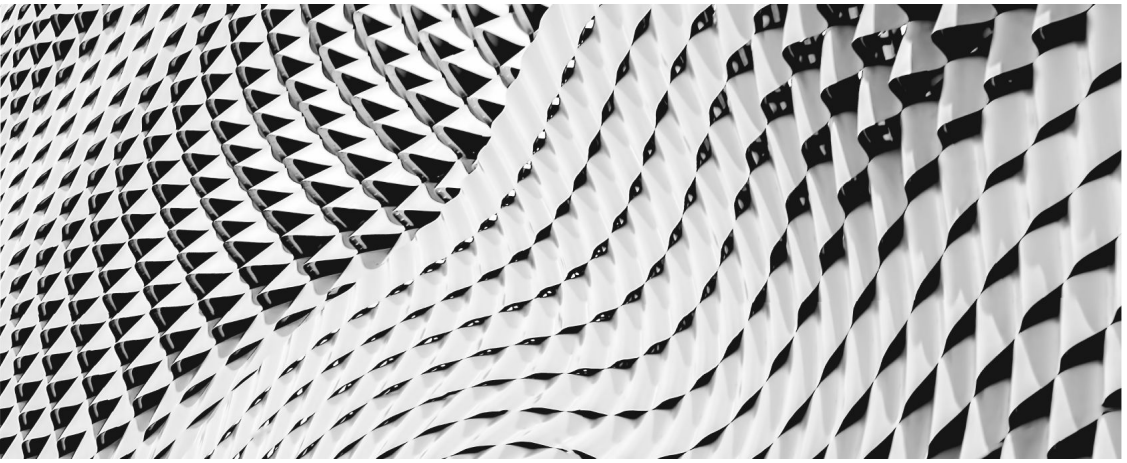
## Recap of Major Announcements

Richard Hofmeister
APAPSSA



Red Hat

# Red Hat Advanced Cluster Security Service

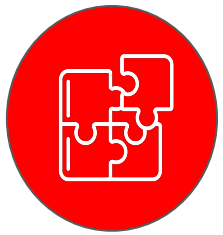


Achieve faster time to value by quickly deploying Red Hat Advanced Cluster Security for Kubernetes as a fully managed Software as a Service (SaaS) solution that reduces costly maintenance and management activity. With no infrastructure to manage, security operators can instead focus on risk reduction and incident triage.



Red Hat

# What is ACS?



**Advanced Security Uses**

**Self-service workflows**

**Platform Support**

1. **Enhanced protections for the Kubernetes API server** allow teams to detect and alert on actions against their organizations most sensitive secrets and configmaps.

2. Help organizations **improve cybersecurity gap analysis and incident response prioritization** by aligning security policies & alerts with the MITRE ATT&CK Framework

3. **Shorten feedback loops** by allowing teams to target workflows for security alert distribution with namespace annotations.

4. **Enable self-service security** among application delivery organizations at scale with scoped access control annotations and labels

5. **Accelerates security use case adoption** in the cloud with certified testing and support for ROSA and ARO

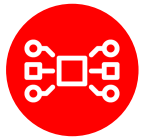
6. **Enhance OpenShift security** with DeploymentConfig configuration checks for CI security testing

# Red Hat Advanced Cluster Security: Use Cases

## Security across the entire application lifecycle

### Vulnerability Management

Protect yourself against known vulnerabilities in images and running containers



### Network Segmentation

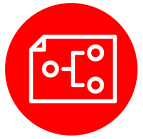
Apply and manage network isolation and access controls for each application

### Security Configuration Management

Ensure your deployments are configured according to security best practices

### Compliance

Meet contractual and regulatory requirements and easily audit against them



### Risk Profiling

Gain context to prioritize security issues throughout OpenShift and Kubernetes clusters

### Detection and Response

Carry out incident response to address active threats in your environment



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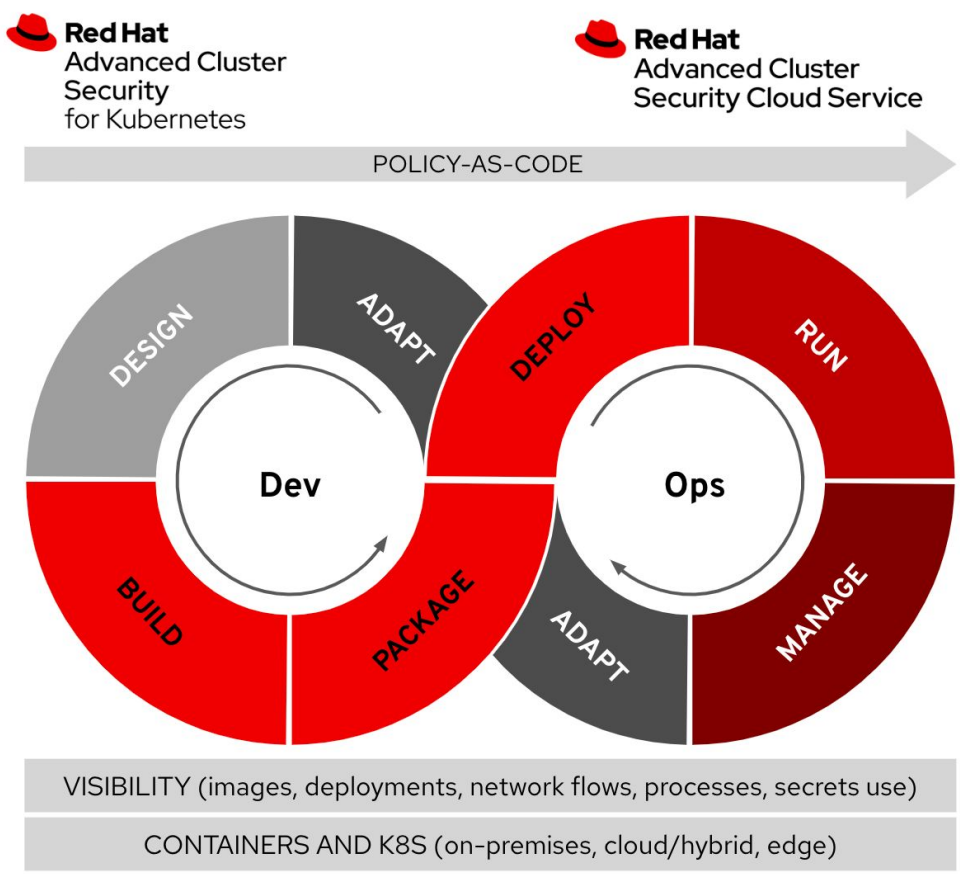
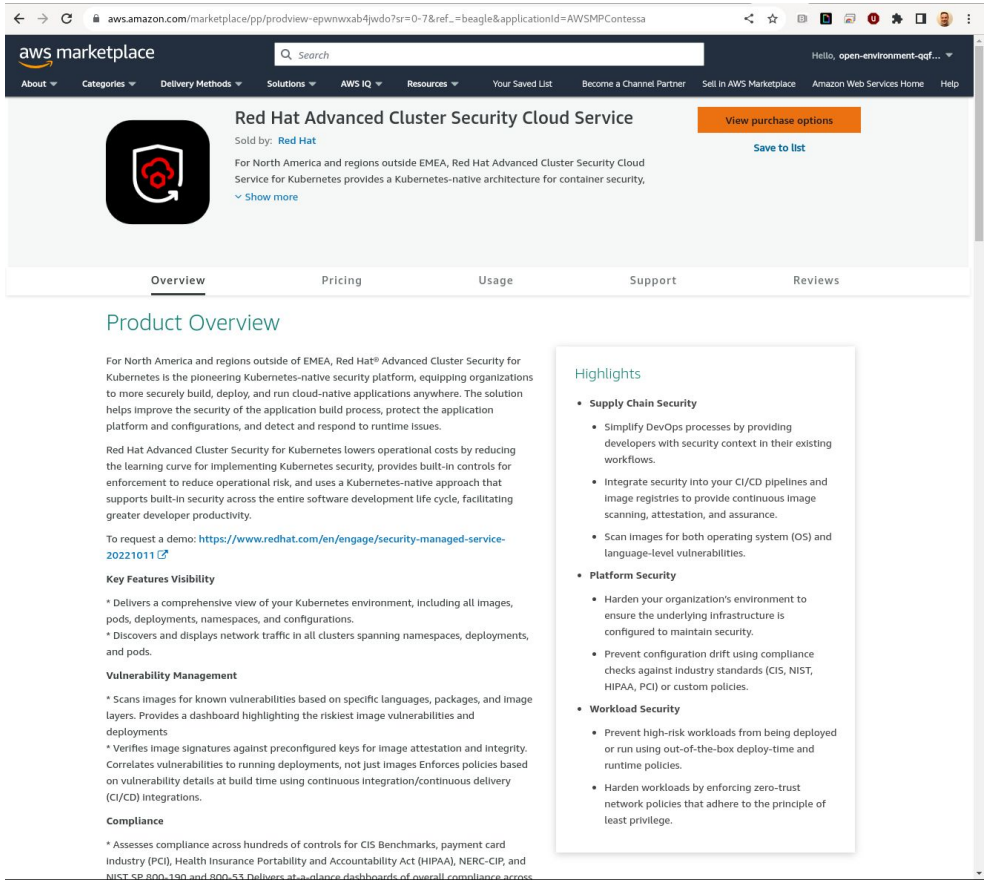
# Red Hat Advanced Cluster Security Cloud Service



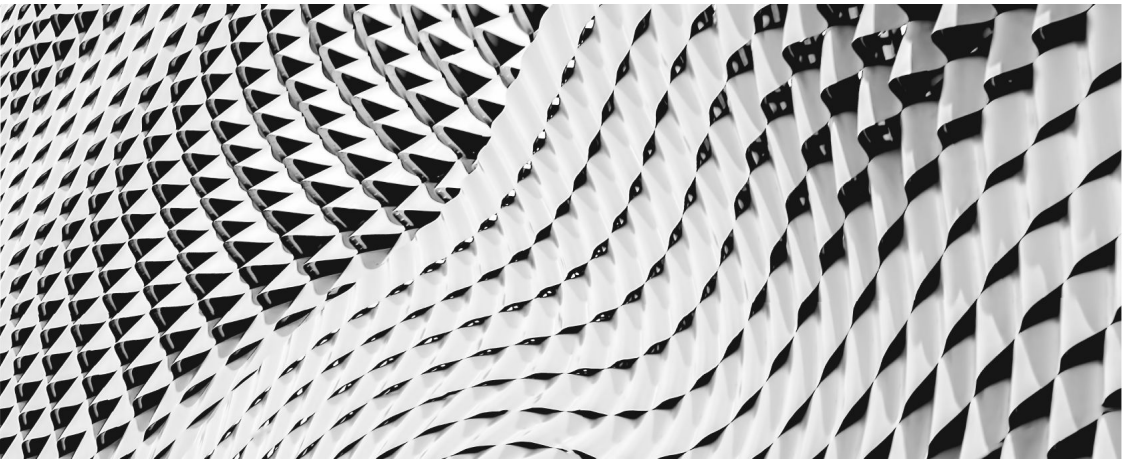



# Red Hat Advanced Cluster Security Service

## Resources

- RHACSS Press Release
- Limited Availability Announcement
- AWS & Red Hat explanation of ACS
- ACS Deep Dive Video
- Get Started with RHACS Cloud Service

# Red Hat Trusted Software Supply Chain



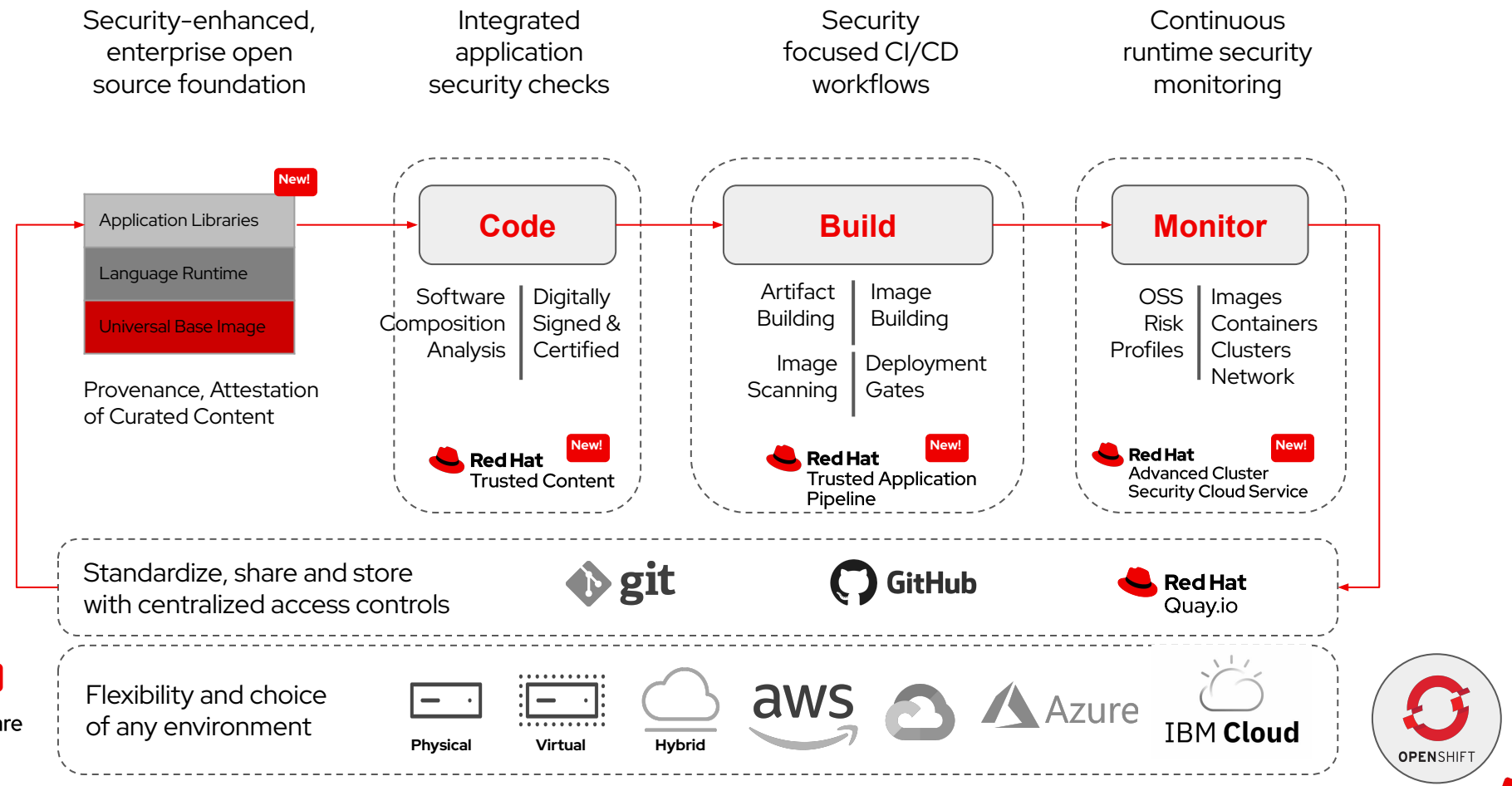
Consistently code, build, and monitor for a trusted software supply chain across any environment, for faster time to value with automated security guardrails.



Red Hat

# Code, Build and Monitor to a Trusted Software Supply Chain

Delivered as a cloud service with integrated security guardrails at every phase of the software development lifecycle



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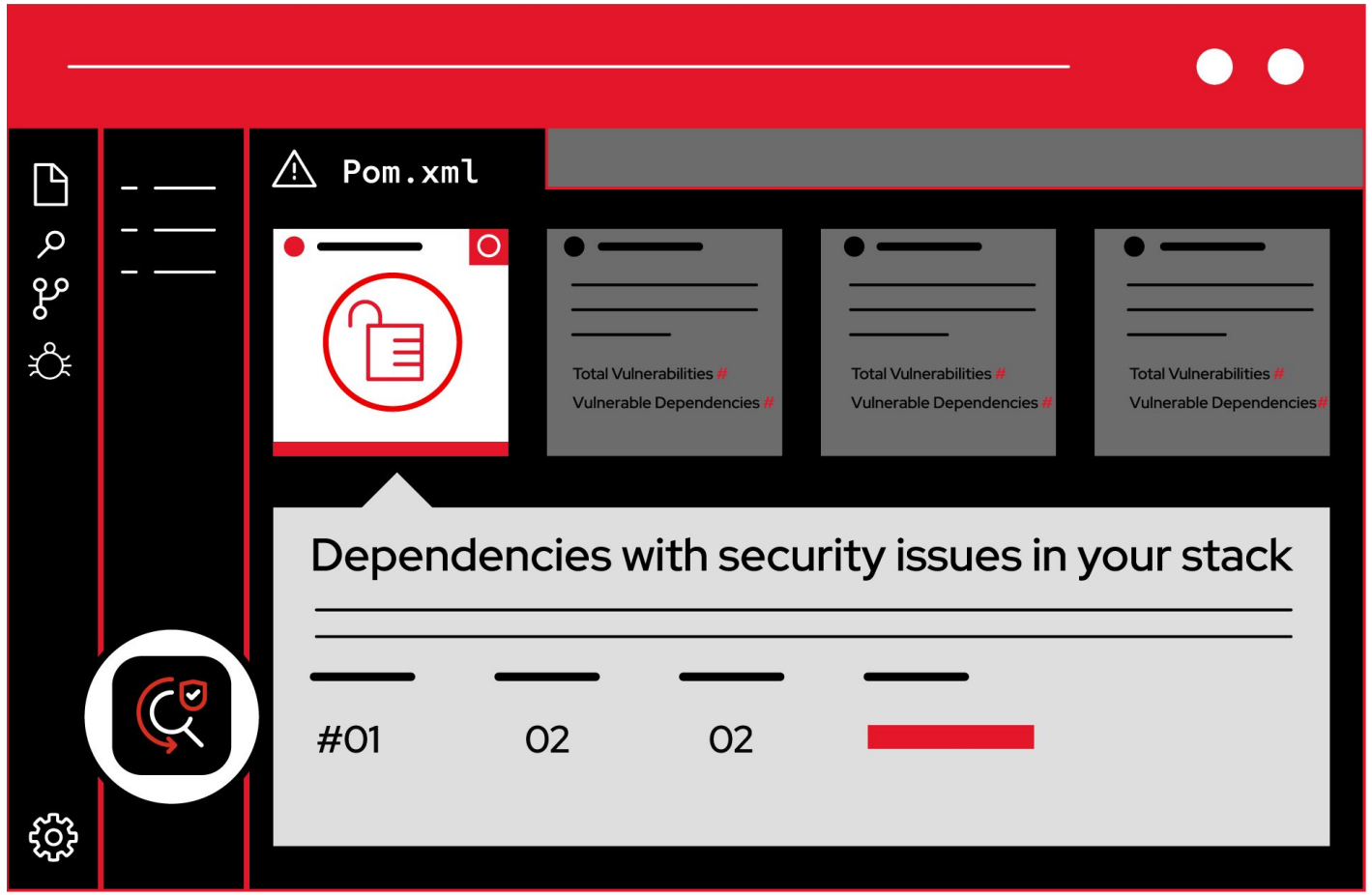
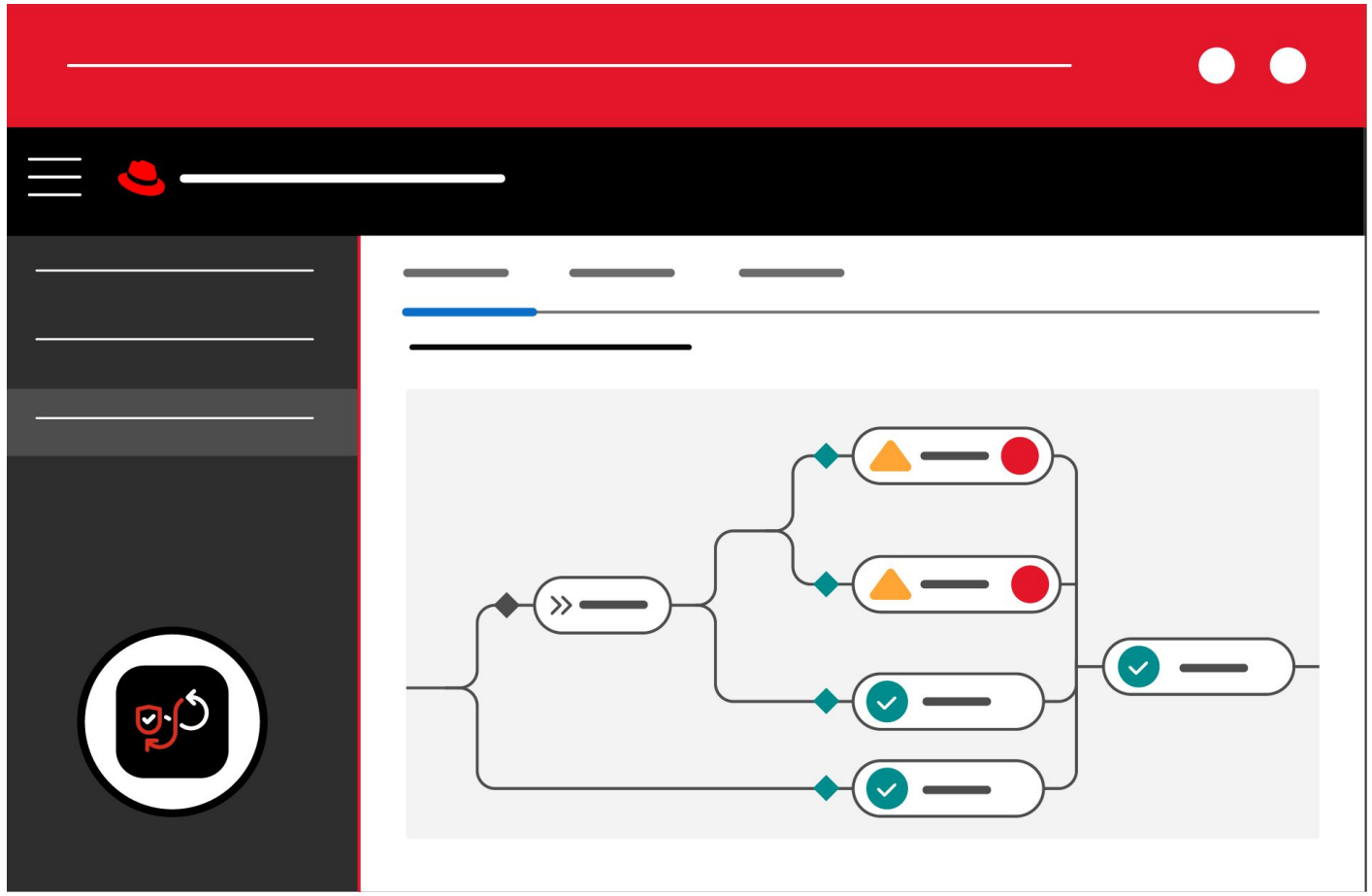
# Code with Integrated Application Security Checks






Red Hat

# Build with Security-Focused CI/CD Workflows





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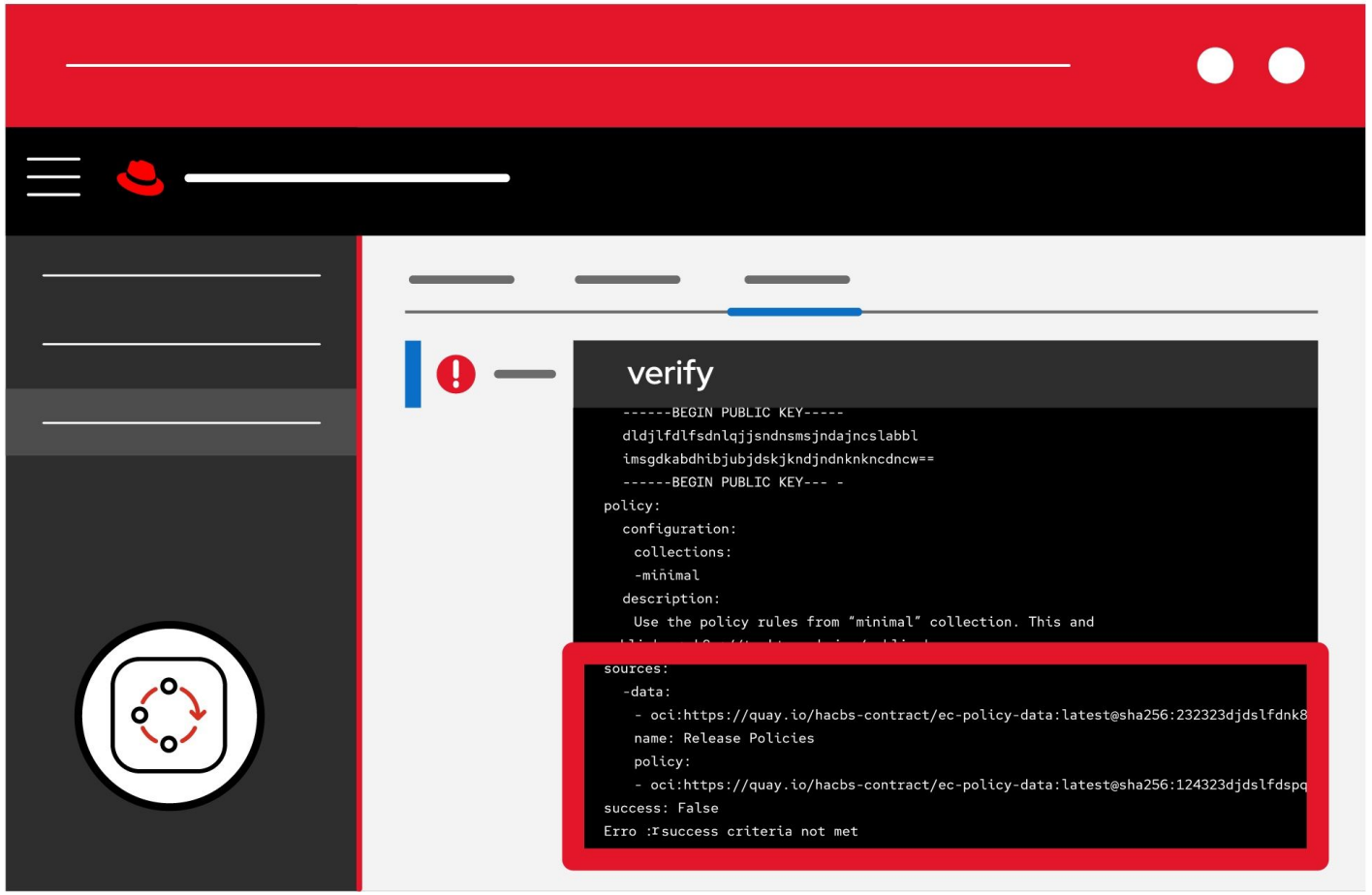
# Deploy Continuously with Release Policies As-Code



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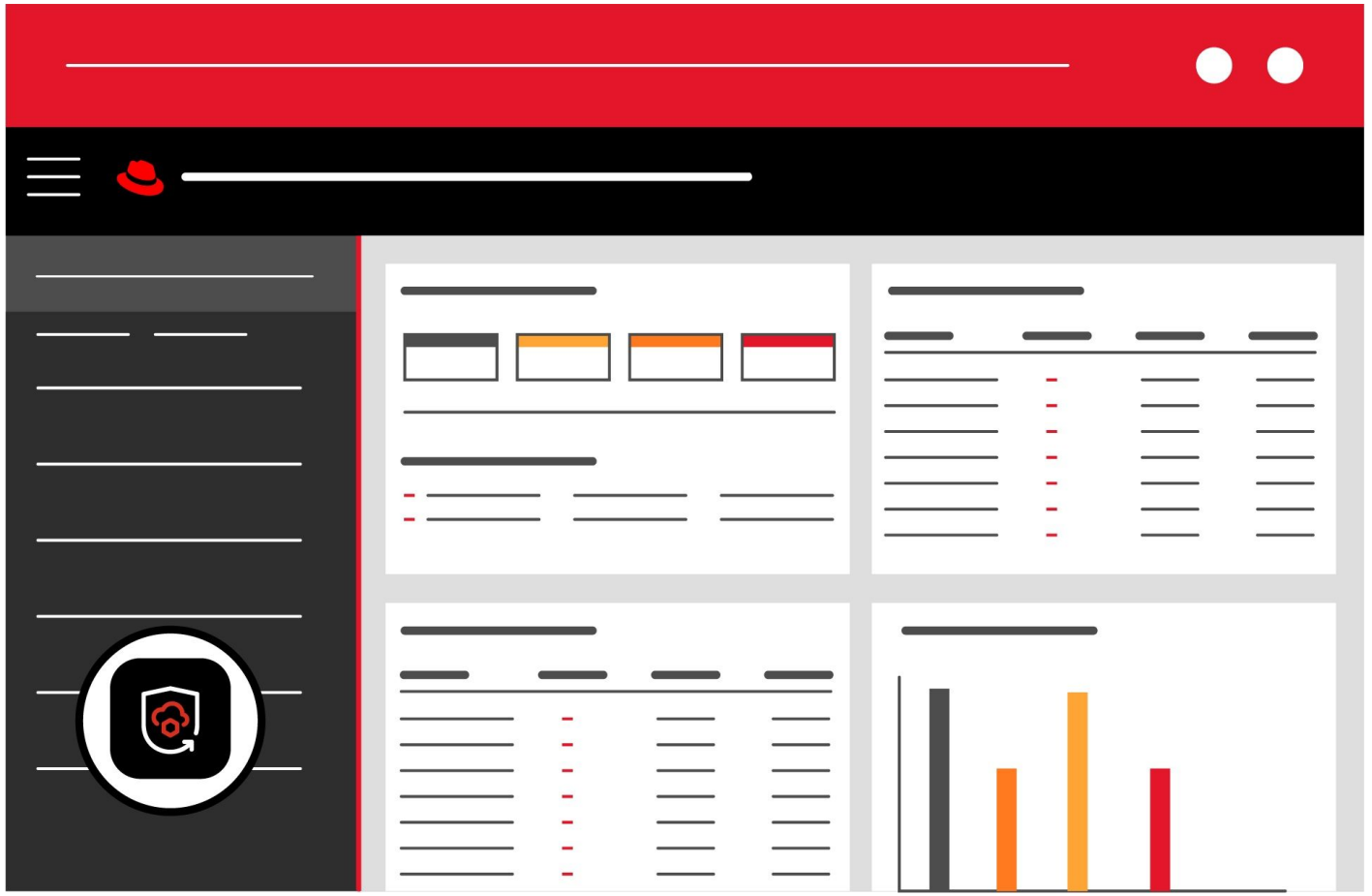
# Monitor and Identify Runtime Security Incidents





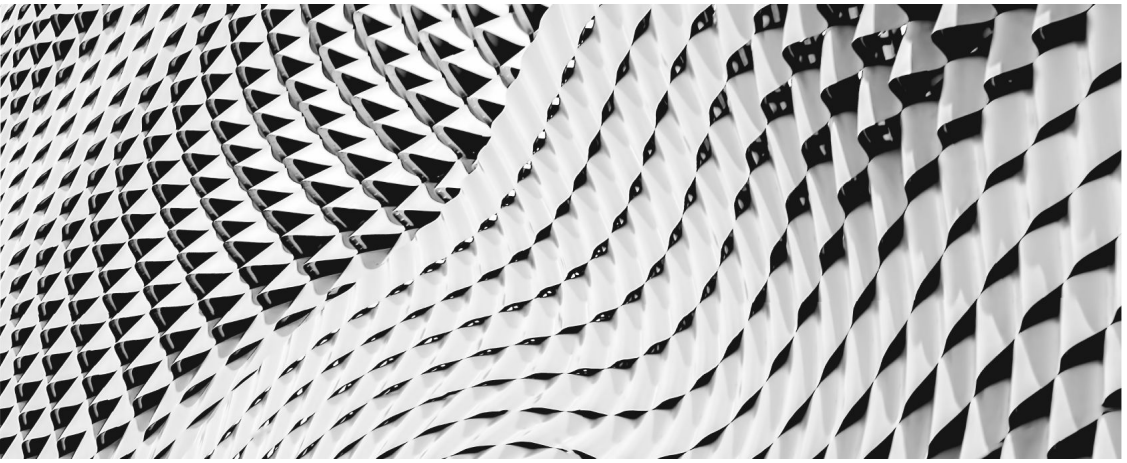
Red Hat

# Red Hat Trusted Software Supply Chain

## Resources

- Product Overview
- Burr Sutter Blog
- Developer's Guide to Setting Supply Chain Security in DevSecOps
- 5 Ways to Boost Software Supply Chain Security
- A Blueprint for Supply Chain Security

# Red Hat OpenShift AI



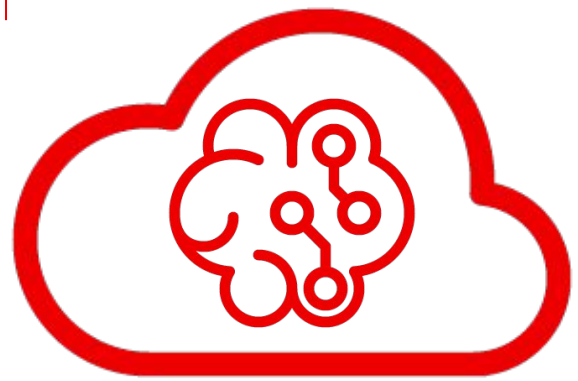
Red Hat OpenShift AI provides IT operations leaders, data scientists and developers with a unified solution to train, serve, monitor and manage the lifecycle of AI/ML models and applications, from experiments to production.



Red Hat

# AI for the Open Hybrid Cloud

## Enterprise grade hybrid AI and MLOps platform



Train, serve, monitor and manage the lifecycle of AI/ML models and applications, from experiments to production

Red Hat OpenShift

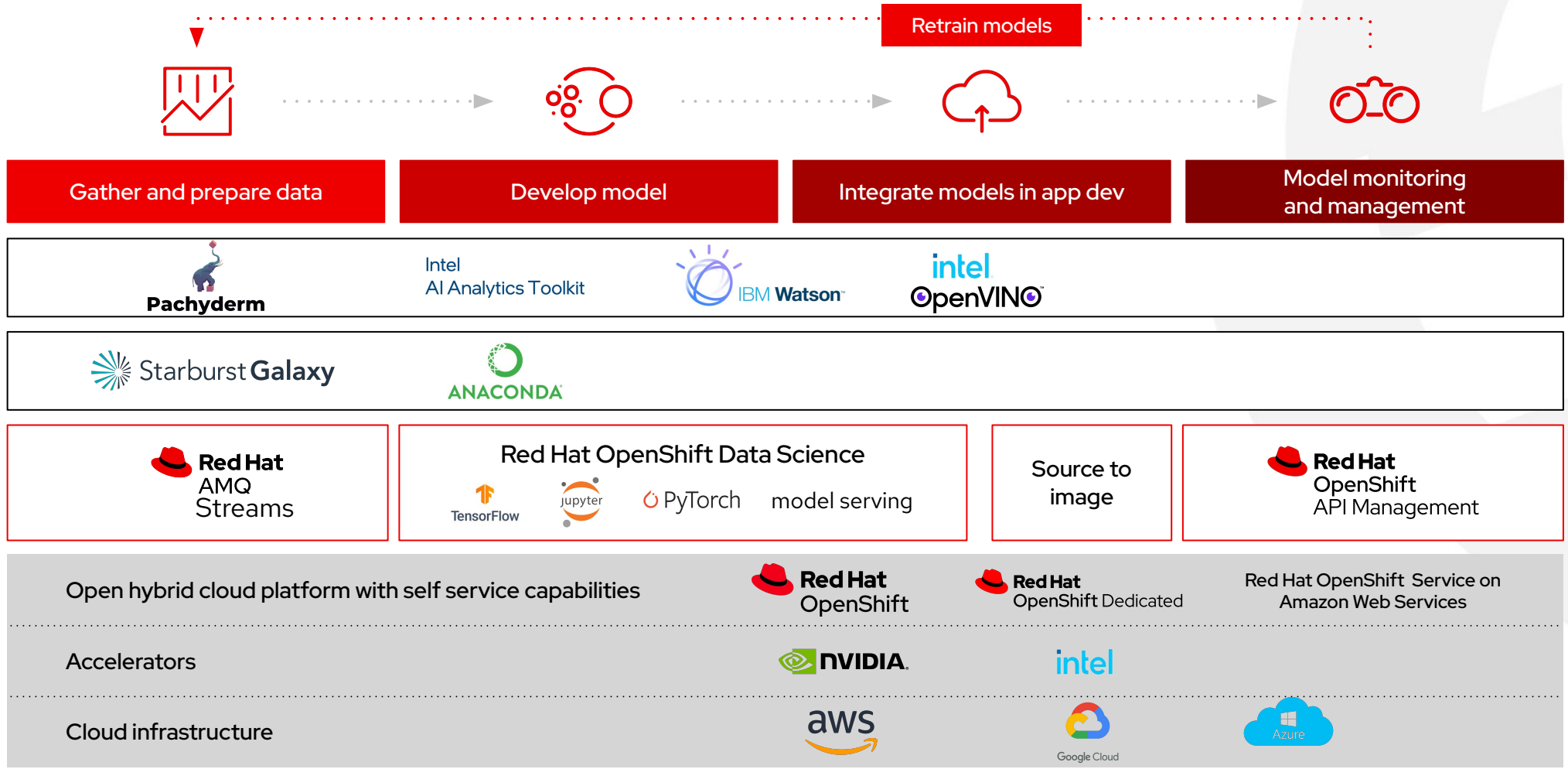
Red Hat OpenShift Data Science

## Red Hat OpenShift AI

Red Hat OpenShift AI builds and expands upon the proven capabilities of Red Hat OpenShift and Red Hat OpenShift Data Science, to:

- Provide a unified platform for data scientists and intelligent application developers.
- Scale to handle workload demands of foundation models (volume of data, duration of training run, size of model, acceleration required, and scalability).
- Deliver consistency, ease-of-use, and cloud-to-edge deployment options.
- Power end-to-end lifecycle for watsonx.ai and Ansible Lightspeed.

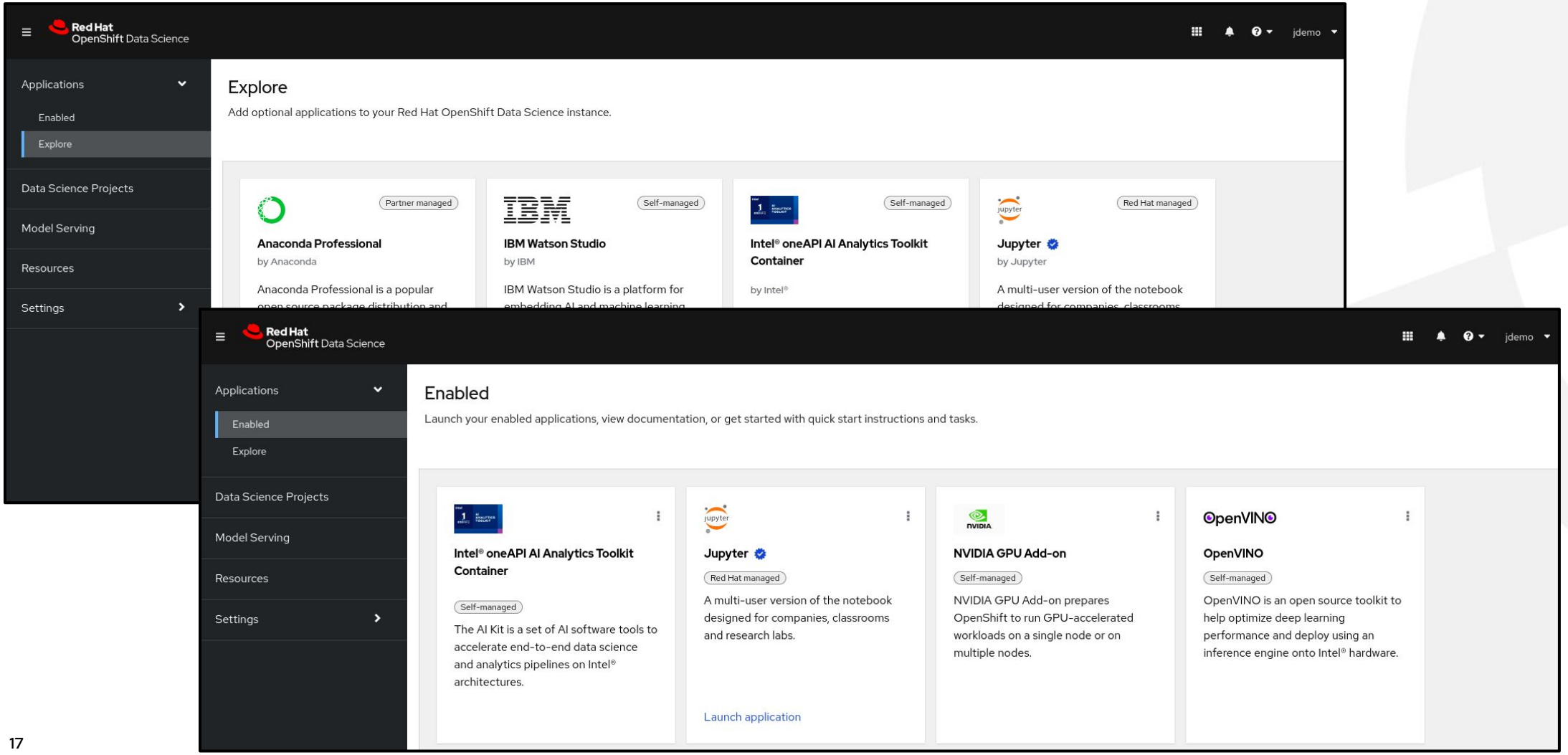
# Cloud service and self-managed components






Red Hat OpenShift

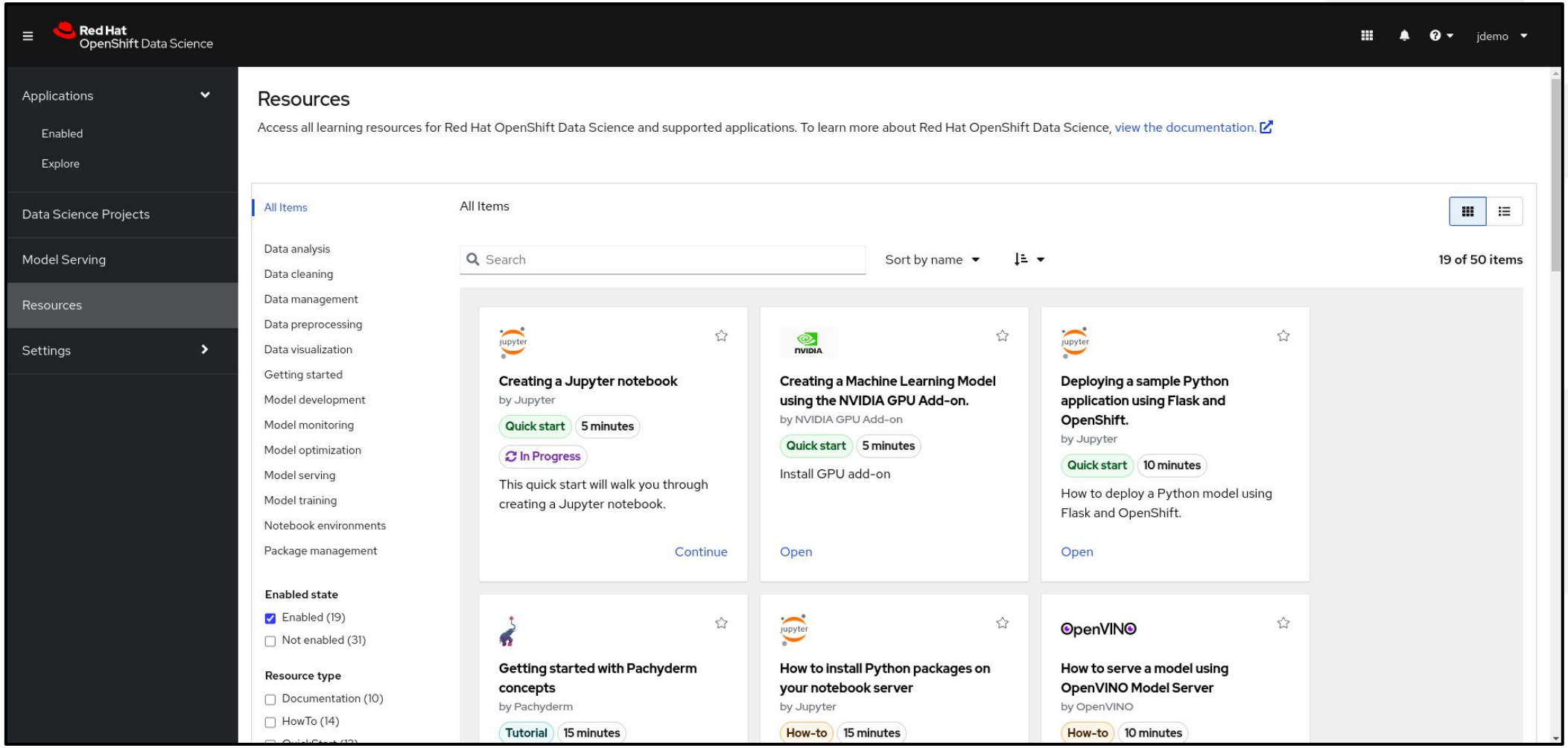
# Dashboard user interface






Red Hat OpenShift

# Dashboard resources






Red Hat OpenShift

# Current functionality

- Model experimentation
  - JupyterLab UI
  - Out-of-the-box notebook images with common Python libraries & packages - Minimal, Standard Data Science, TensorFlow, PyTorch, CUDA
  - Custom notebooks
  - Data Science projects UI
  - Kubeflow notebook controller for managing notebook sessions
  - NVidia GPU support (field trial)
  - Anaconda integration
  - IBM Watson Studio integration
  - S3 protocol integration
  - Git integration plugin in JupyterLab
  - Python editor plugin
- MLOps
  - Model serving (Field Trial - cloud, Tech Preview - self-managed)
  - Intel OpenVINO & AI Kit integrations
  - Red Hat OpenShift API Management integration
- Managed cloud service or self-managed options
  - GA add-on to OpenShift Dedicated (AWS, GCP) and OpenShift Service on AWS
  - GA for self-managed offering
- DataOps
  - Starburst integration
  - Pachyderm integration
  - OpenShift Streams for Apache Kafka integration
- Admin UI configuration capabilities
  - Default PVC size
  - Stop idle notebooks
  - Notebook pod tolerations
  - User management
- Dashboard UI
  - Integrated learning resources for all components
- Trial
  - Developer Sandbox option
- Security and Compliance
  - PCI-DSS Compliance
  - HIPAA-Ready
  - ISO 27001, ISO 27017, ISO 27018, SOC 2 Type 2
  - AWS STS support

# Upcoming capabilities

## Model Performance

View model performance metrics across your fleet of models

## Data Science Pipelines

Create repeatable runs of model builds which can be integrated into serving and application deployment pipelines.

## Custom model serving runtimes

Extend the out-of-the-box serving runtimes to include custom runtimes for performance, specialized use cases, and additional model frameworks.

## Model bias detection

Monitor your deployed models for changes in measured bias.

# Timeline

## 1H ’23

### Next

- **MLOps**
  - Data Science Pipelines  (Kubeflow Pipelines Tekton & Elyra)
  - Enhance model serving & monitoring
- **Model experimentation**
  - Update out-of-the-box notebook images
  - Data Science Projects enhancements
- **Platform/integration capabilities**
  - Disconnected support (self-managed)
  - Enhance admin UI configuration capabilities
  - Starburst Enterprise dashboard integration (self-managed)

## 2H’23

### Future

- **MLOps**
  - Enhance model serving & monitoring
  - Model fairness & bias detection
  - Model prediction explanations
  - Data Science Pipelines enhancements
  - TBD: Model registry
- **Model experimentation**
  - Update out-of-the-box notebook images
  - Distributed model training (Ray + CodeFlare + MCAD)
  - Intel Habana support
  - TBD: VS Code & RStudio support
- **DataOps**
  - TBD: Data labeling (partner)
- **Platform capabilities**
  - Enhance admin UI configuration capabilities



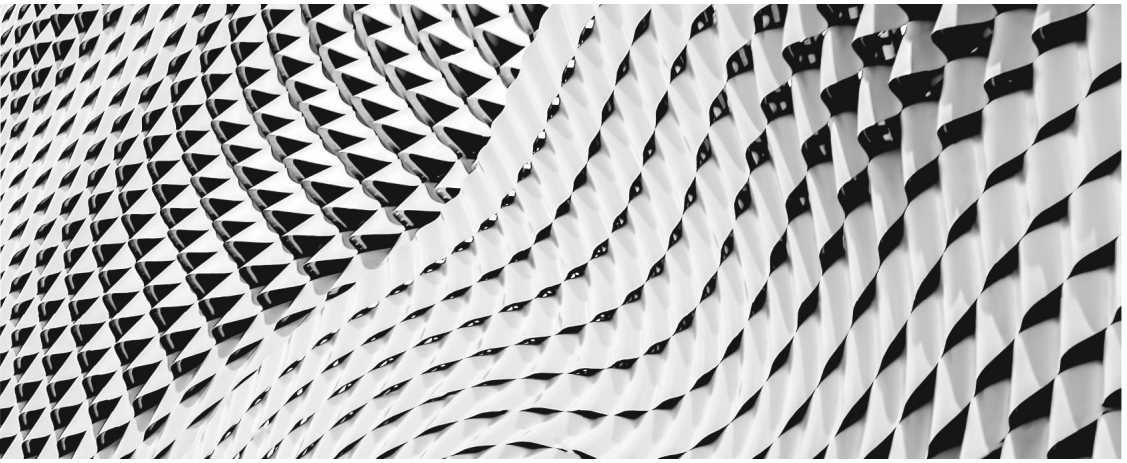
This is an uncommitted roadmap and Red Hat reserves the right to change it.

# Red Hat OpenShift AI

## Resources

- Press Release
- The Moment for AI by Matt Hicks
- AI/ML on OpenShift
- RHODS On-Prem

# Red Hat Developer Hub



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Red Hat

# Backstage in Numbers & Red Hat

**Announcement**

[Red Hat joins the Backstage.io community]

- 3.3K forks
- 19.5k stars on GitHub
- 13,000+ contributions
- 600+ adopters
- 15K+ contributors
- 8.2K+ discord members

https://backstage.io/blog/2022/12/19/backstage-wrapped-2022

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# Where are we investing?

Upstream

Backstage Core

HELM Charts

Midstream

Best practices

Custom actions

Plugins

HELM Charts

Sample Golden Path Templates

Showcase Application


Downstream

Enterprise support

Red Hat build and distribution of Backstage core & selected plugins

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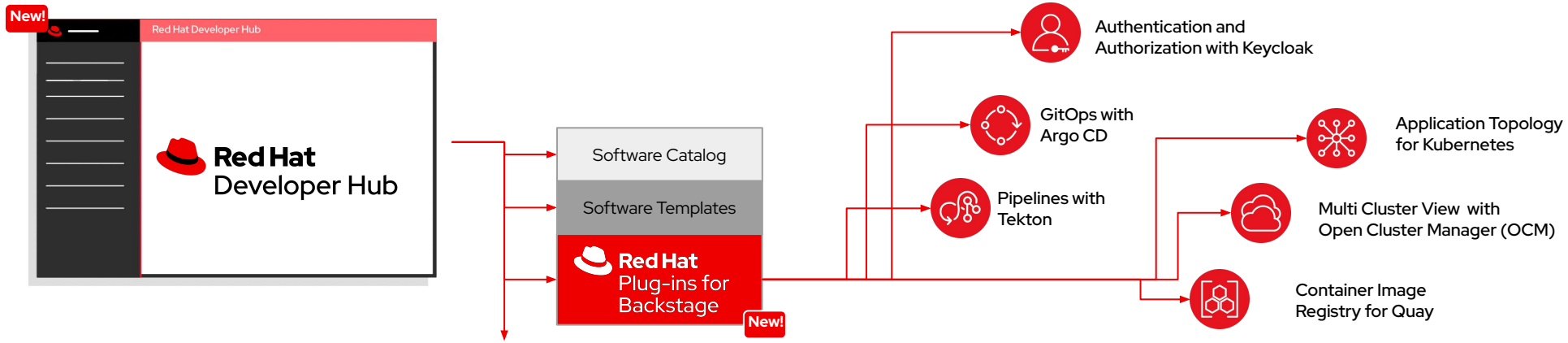
# Empowering engineering to deliver business value faster.

**Single pane** of glass to increase engineering productivity.

**Self-service** with guardrails for cloud-native development.

**Best practices** with GitOps and automation.

**Real-time view of** application and infrastructure health and security.




Integrates with industry standards and technologies through a broad ecosystem.

git Jenkins MANY MORE

Based on Backstage, an open source platform for building developer portals.

Backstage

Consistent developer experience across environments.

Physical Virtual Hybrid aws Azure IBM Cloud OPENSHIFT



Red Hat

Red Hat productization will include: **Red Hat Supported Plugins** and **Supported Self-Managed Developer Portal**



## Near term

**PLUGINS**

- App Topology v1
- Argo v1
- Keycloak v1
- Multi cluster view
- OCI - Quay v1
- Tekton v1

**GPTS**

- .NET - new app
- Go - new app
- Node - new app
- Python - new app
- Quarkus - new app
- Spring - new app

**PORTAL**

- LIMITED CUSTOMIZATION
- Pre-installed community plugins & RHPIB 1.0
- Rebranding capability (color, logo)
- Loading app-config from config map
- Loading GPTs from URL/git repo
- Helm Chart for install
- Slack Support

## Midterm

**PLUGINS**

- **3scale**
- Ansible / AAP
- **OCI - ACR**
- **OCI - Artifactory**
- OCI - Nexus
- Web Terminal
- App Topology v2 - access to pod logs
- Tekton v2 - access to PLR log viewer

**GPTS**

- Deploy existing app with Tekton
- Add TechDocs (auto-trigger when docs is missing)

**CUSTOM ACTIONS**

- Run an Ansible job
- Create Sonarqube project
- Create Quay repository
- Create namespace in K8S

**PORTAL**

- Improved user experience
- Backstage Operator for OpenShift
- Full Support

## Future

**PLUGINS**

- ACS
- Kiali
- DORA metrics
- Outage tracker / Notification propagation
- Scorecard - Secure software supply chain
- Learning

**GPTS**

- Add S3 bucket
- Be able to ask for size cpu/memory (enhance exist)
- Kafka / topic provisioning with Strimzi
- Deploy serverless function
- Deploy Knative serverless app
- Onboard new serverless function
- Onboard new serverless application
- GPT to create a new Backstage plugin

**PORTAL**

- **CUSTOMIZATION includes adding plugins**
- Authorization improvements
- Workflow engine
- Event mechanism
- Concept of “environments”

# When can you get started?

Red Hat Developer Hub

Red Hat Plug-ins for Backstage

Available by end of June 2023

https://developers.redhat.com/products/developer-hub/overview

https://developers.redhat.com/products/plugins-for-backstage/overview

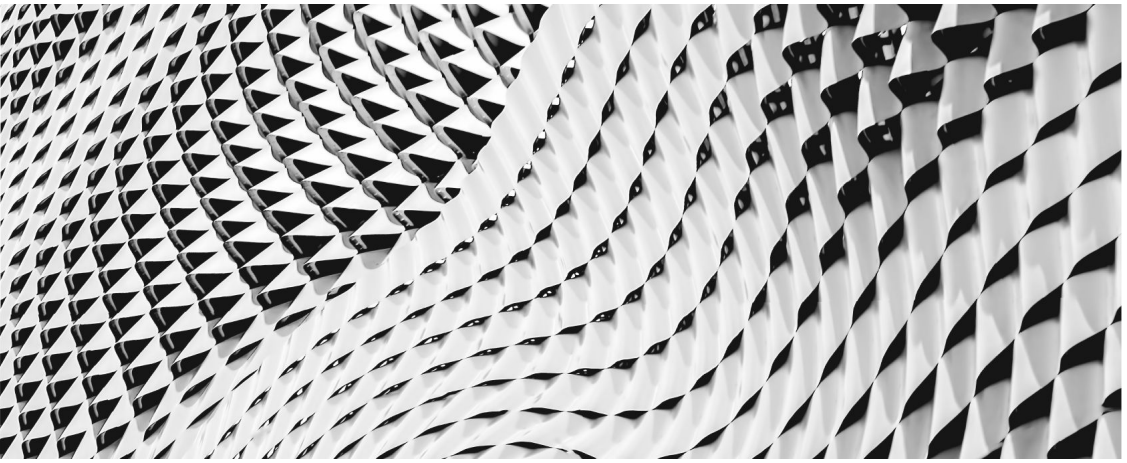
Red Hat

# Red Hat Developer Hub

## Resources

- Developer's Guide to Red Hat Developer Hub and Janus
- Product Overview
- Red Hat Plugins for Backstage
- Showcase

# Red Hat Service Interconnect



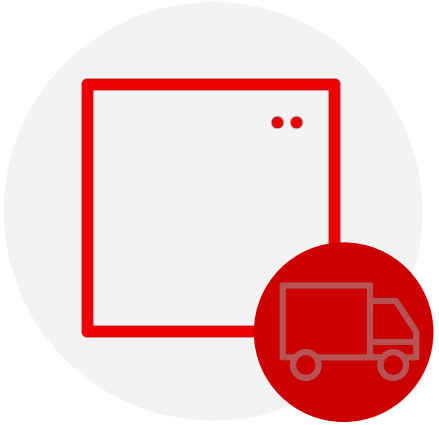
Simplified application connectivity across Red Hat or non-Red Hat environments and platforms.



Red Hat

# Some elements in software are still not portable

## Portability allows to decouple elements in software

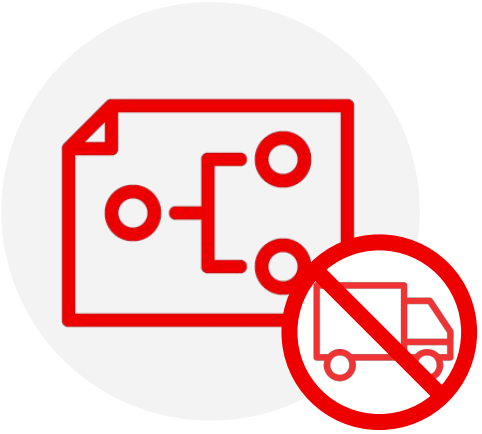


**Containers turned computing**
**PORTABLE**

Containers enable to move applications from different environments effortlessly

**Object Storage turned storage**
**PORTABLE**

Object Storage enable to move data stored from one location to another easily

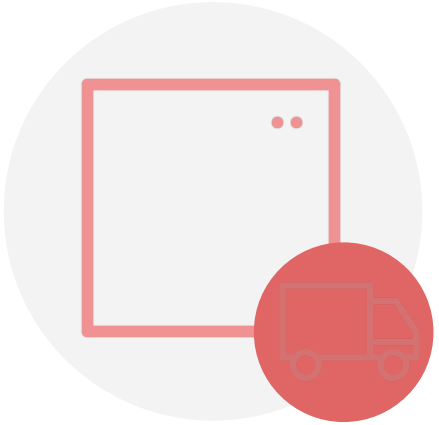


**Networking is still**
**NOT PORTABLE**

Networking is still the only element in software that is still immutable. It requires a new configuration for a new environment

# Service Interconnect changes that

Interconnections follows your application to different environments and platforms



## Containers turned computing PORTABLE

Containers enable to move applications from different environments effortlessly

## Object Storage turned storage PORTABLE

Object Storage enable to move data stored from one location to another easily


## Networking is now PORTABLE

Because it operates on Layer 7, it abstracts the underlying networking and helps to re-establish interconnections in different environments

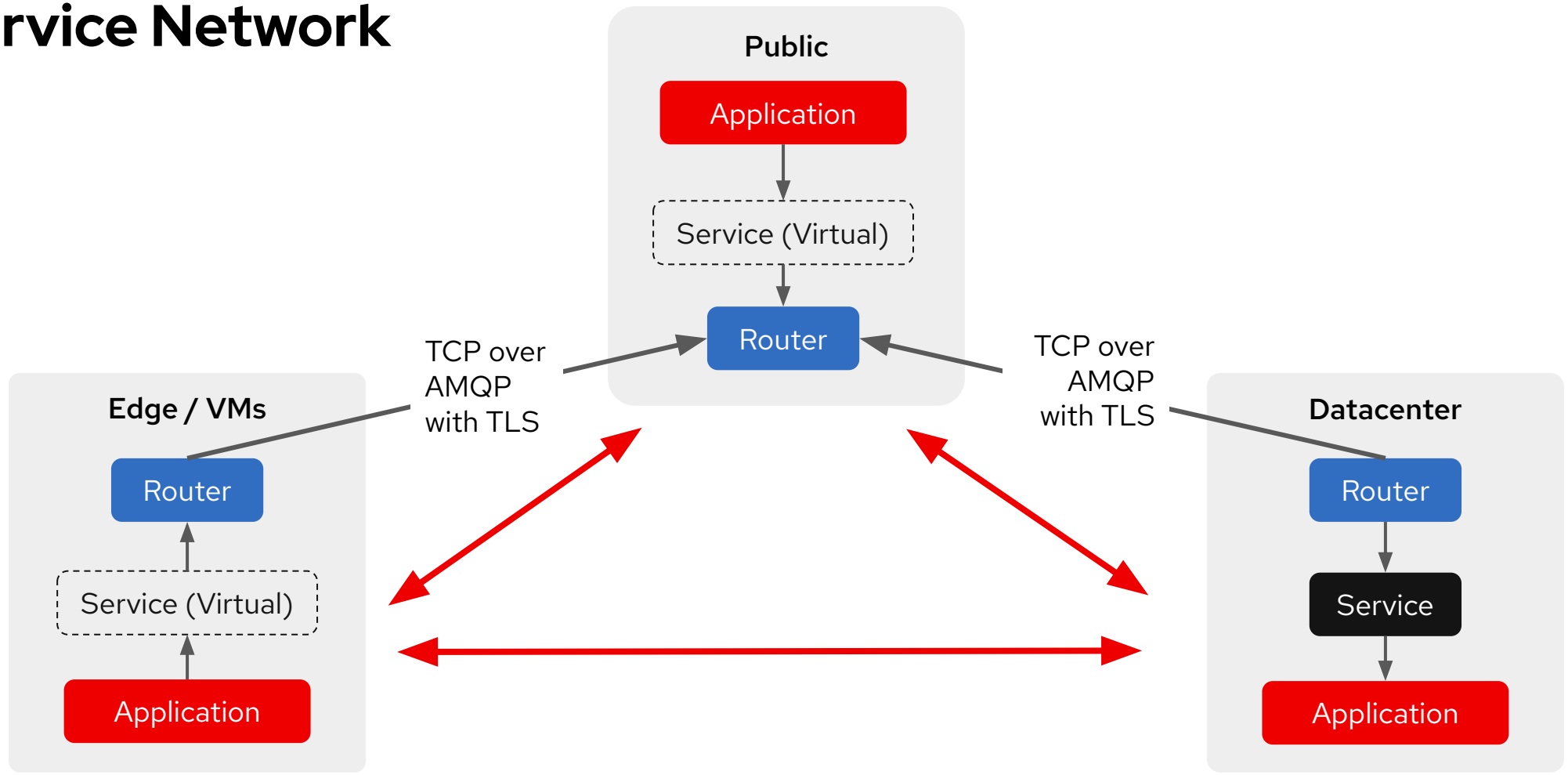


Red Hat

# Red Hat Service Interconnect

Red Hat Service Interconnect simplifies application connectivity across Red Hat or non-Red Hat environments and platforms. Unlike traditional means of interconnecting (such as VPNs combined with complex firewall rules), interconnections can be created by anyone on the development team easily without elevated privileges and deliver a secure link without compromising the organization's security or data.

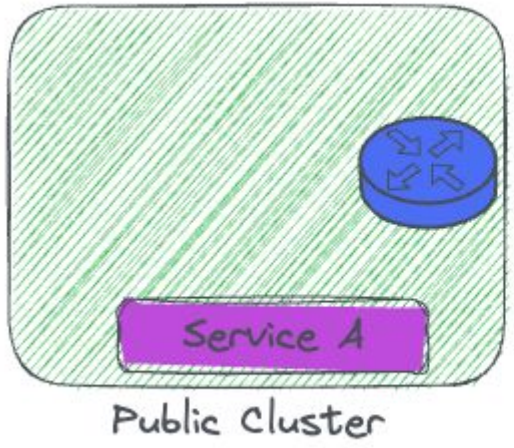
# Service Network

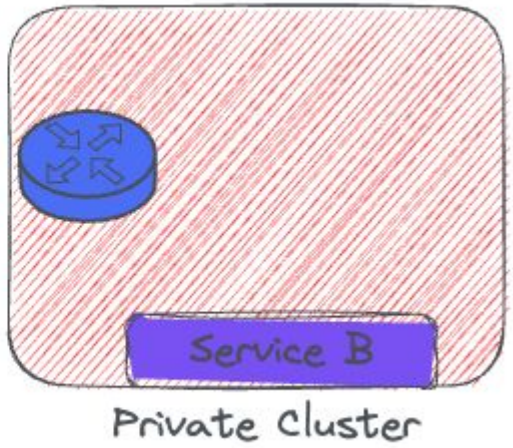


# Connect Services A & B Spread Across Different Environments


## Using Red Hat Service Interconnect in 4 Simple Steps

# Initialize the Routers



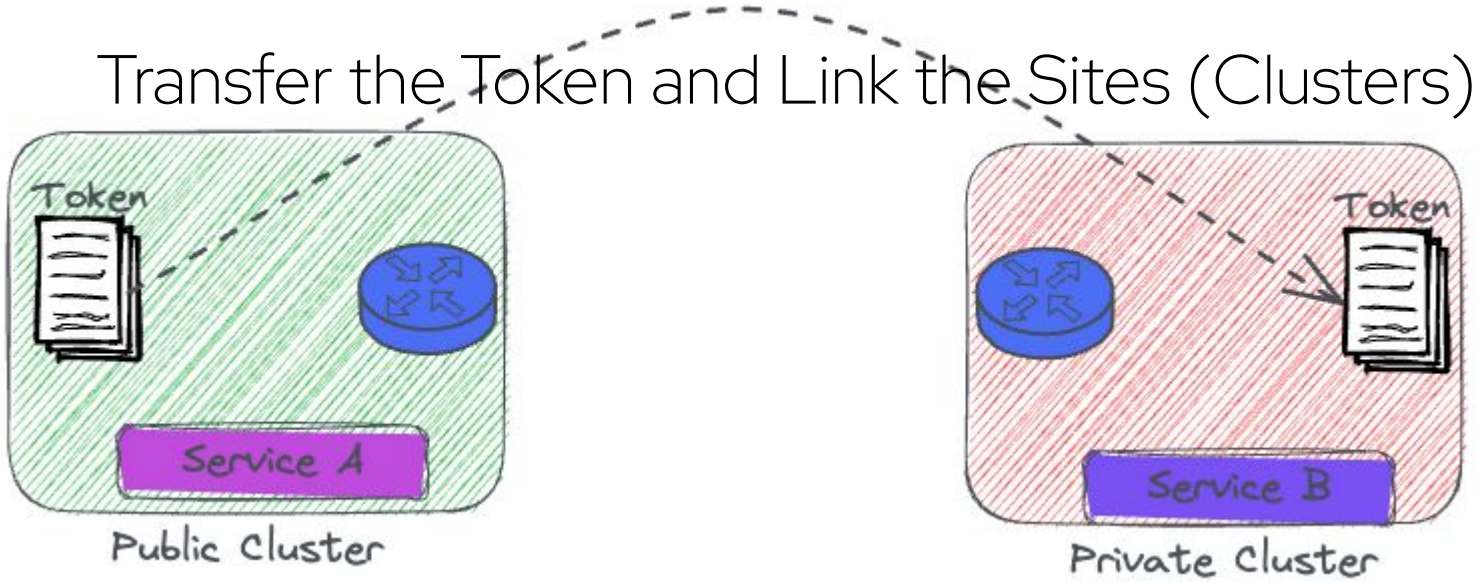

```
$ skupper init
```

```
$ skupper init
```

# Create a Secure Token

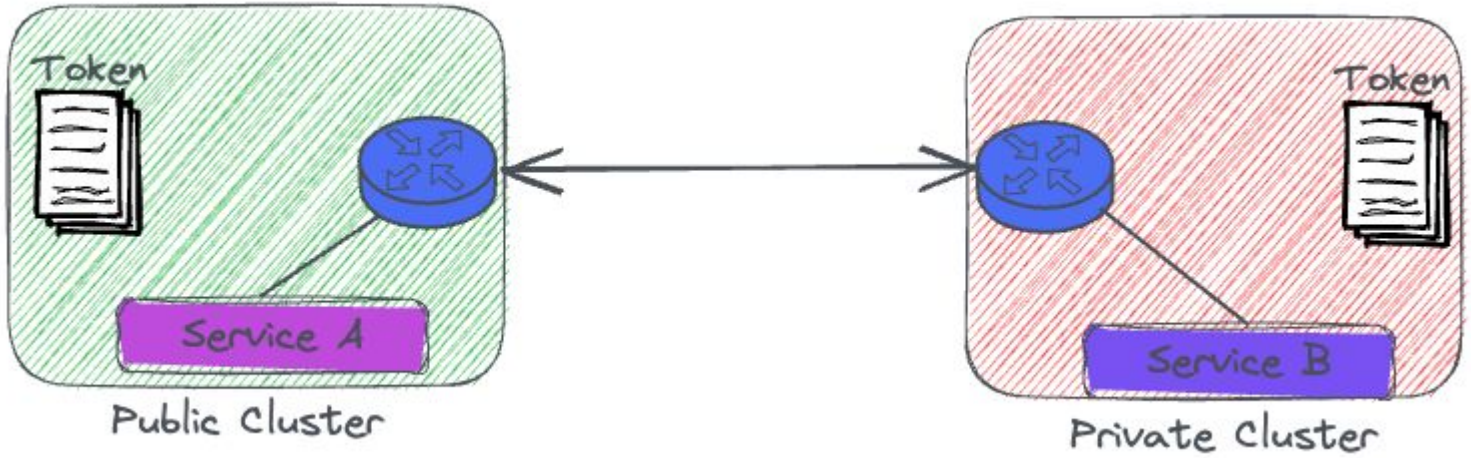

```
$ skupper token create ~/secret.token
```

# Transfer the Token and Link the Sites (Clusters)




```
$ skupper link create ~/secret.token
```

# Expose only the Required Services

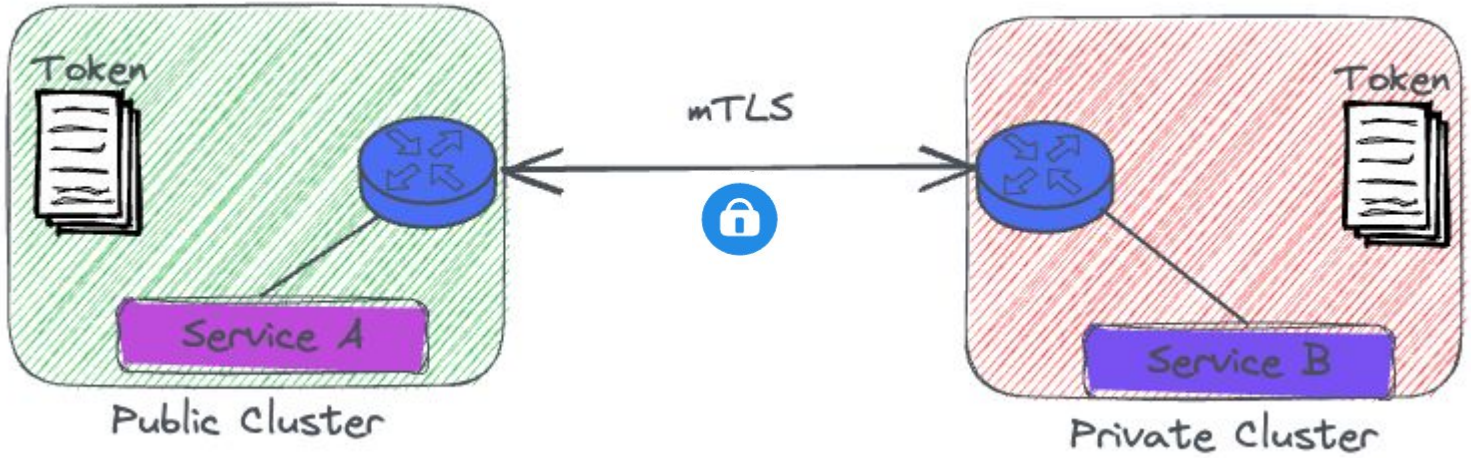



```
$ skupper expose deployment/servicea
```

```
$ skupper expose deployment/serviceb
```

**None of the Services are available on the service network by default. Developers have to explicitly mention which service to expose**

# Secure Connectivity Established between Service A & B




Red Hat Service Interconnect empowers developers to create **secure connections** between their apps or services, **regardless of the environment** – overlaid upon enterprise endorsed network flows

# Red Hat Service Interconnect

## Frictionless Integration across the hybrid cloud

### Application Focused Integration

Individual Apps running on virtually any platform can make native TCP calls locally to any other app running on any other platform securely without special VPNs.

### Layer 7 Addressing

Instead of routing IP packets between network endpoints, Layer 7 application routers route messages between application addresses

### Application Layer Abstraction

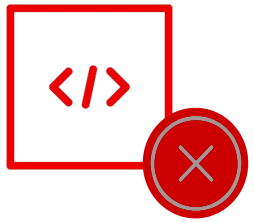
Agnostic of the environment and IP versions (such as IPv4 and IPv6) Enables portability for both applications and its associated networking. Migrations can be easily done without recreating the networking.

### Mutual TLS Encryption

Interconnections use Mutual TLS in order to prevent unauthorized interconnections. Developers can operate flexibly and quickly while maintaining security of their infrastructure and data.

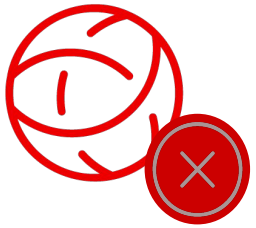
# Eliminates Time Taking Complex Configurations

## An application-layer solution can significantly reduce complexity and coordination delay



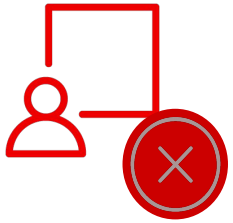
### No code changes

You don't have to change your application code. Services communicate transparently as though they were deployed together in one location.



### No network changes

You don't need new firewall rules, and you don't need your infra team to install a gateway. If you can connect (either way), you can create a service network.



### No admin privileges

It requires no elevated privileges to set up. Operates with the same privileges as your application.



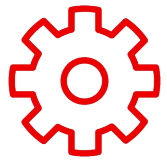
Red Hat

# Simple CLI Based Configuration

## CLI Command Structure

```
(base) vravula-mac:~ vravula$ skupper -h
Usage:
  skupper [command]

Available Commands:
  completion    Output shell completion code for bash
  debug         Debug skupper installation
  delete        Delete skupper installation
  expose        Expose a set of pods through a Skupper address
  gateway       Manage skupper gateway definitions
  help          Help about any command
  init          Initialise skupper installation
  link          Manage skupper links definitions
  network       Show information about the sites and services included in the network.
  revoke-access Revoke all previously granted access to the site.
  service       Manage skupper service definitions
  status        Report the status of the current Skupper site
  token         Manage skupper tokens
  unexpose      Unexpose a set of pods previously exposed through a Skupper address
  update        Update skupper installation version
  version       Report the version of the Skupper CLI and services
```

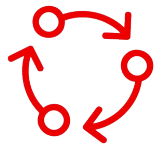


### Service Management

Control the visibility of individual services in the network

### Token Management

Create Secure Tokens for Establishing mTLS connections



### Site Lifecycle

Manage the lifecycle of Skupper installations and components

### Link Management

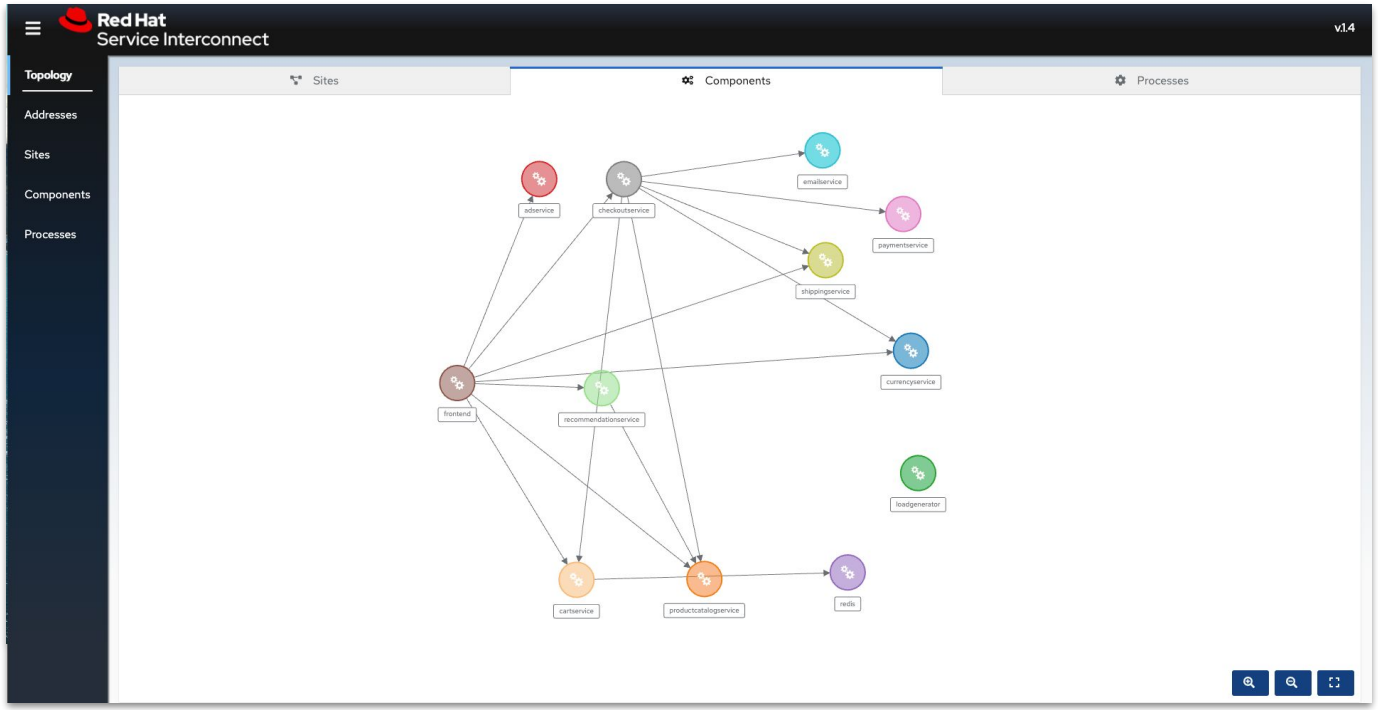
Manage the connections and link definitions



Red Hat

# Console

## Visualize your connections

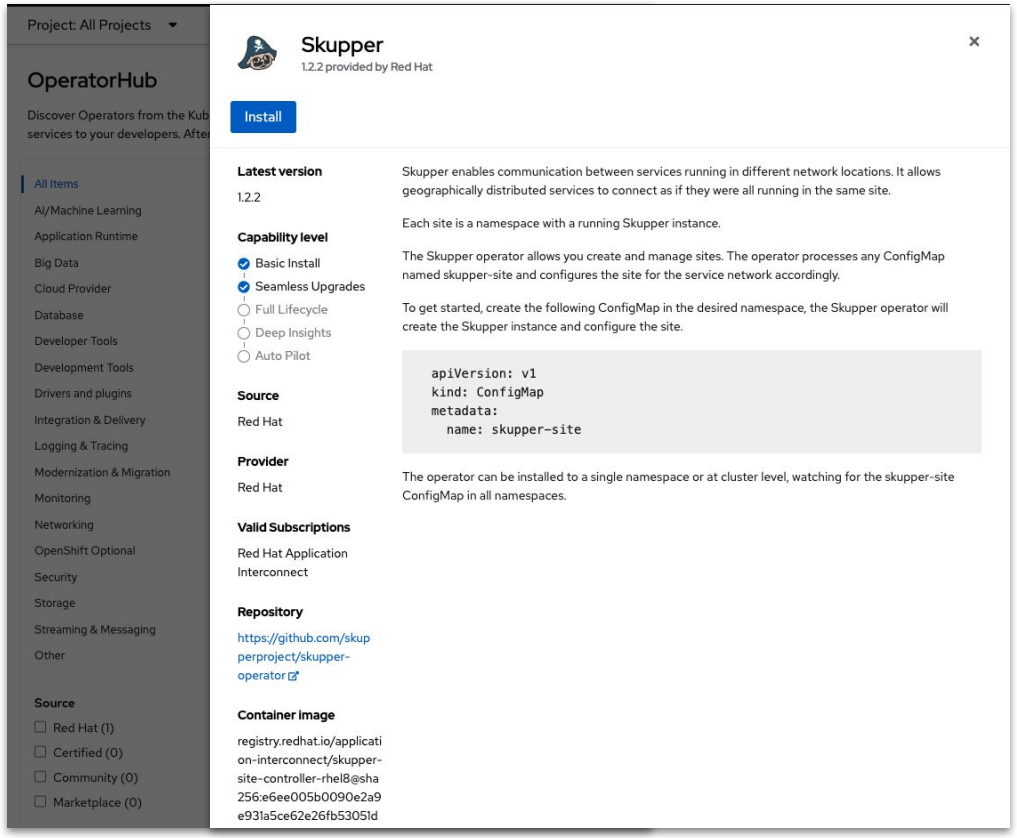



- **Topology:** Graphical representation of the all the connections
- **Components:** Services that are exposed on the service network, both local and remote.
- **Sites:** Application Interconnect installations on the current service network.
- **Throughput Bytes:** Charts providing traffic related information



# Service Interconnect Operator

## Supported on Red Hat OpenShift




**Simplified Deployment and Management**

**Easy to install for the whole cluster**

**Configuration and tuning on Day #2**



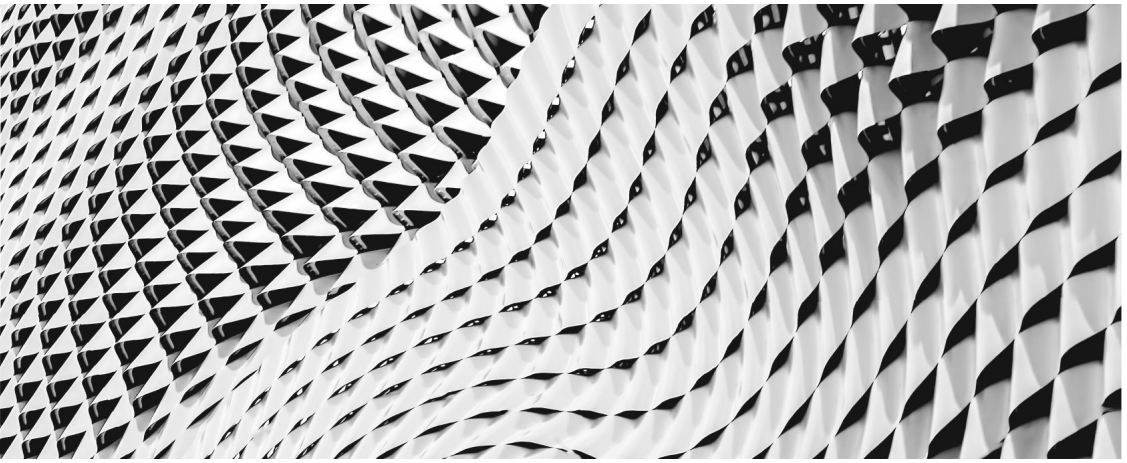
Red Hat

# Red Hat Service Interconnect

## Resources

- Product Announcement
- Product Overview
- Skupper Community
- Hands On Scenario Examples

# Podman Desktop 1.0



Podman Desktop is an open source graphical tool enabling you to seamlessly work with containers and Kubernetes from your local environment.



Red Hat

podman desktop

Moving from Local to Prod

DEVELOPMENT TEAM

Inner Loop

LOCAL DEV ENV

- Base Images from Docker Hub
- Low / No Security
- Container Registry: Docker Hub
- **Docker Compose**
- Nobinding with Managed Services
- Minikube

Heavy Usage of: docker

WALL OF DISCREPANCIES

KUBERNETES / OPENSHIFT

- UBI base Images
- Quay.IO
- Rootless
- **Kubernetes YAML**
- Managed Services

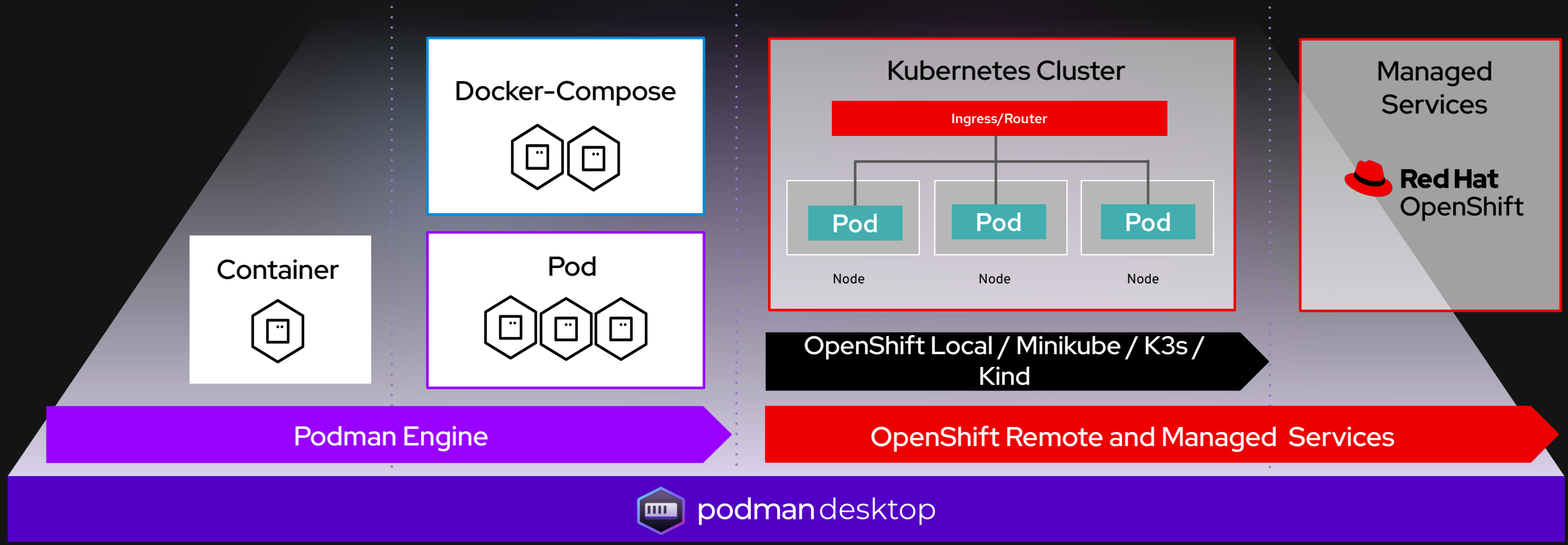
OPS TEAM

Reproducing “Prod workloads” environment in Local

Red Hat

podman desktop

# Simplistic onboarding. From applications to containers, to pods, to platforms to **OpenShift**.



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podman desktop

# Introducing Podman Desktop

## Containers and Kubernetes for Application Developers

### Podman and Kubernetes/OpenShift Local

- Install and run anywhere: Windows, Mac and Linux
- Keep it up-to-date

### Containers and Pods

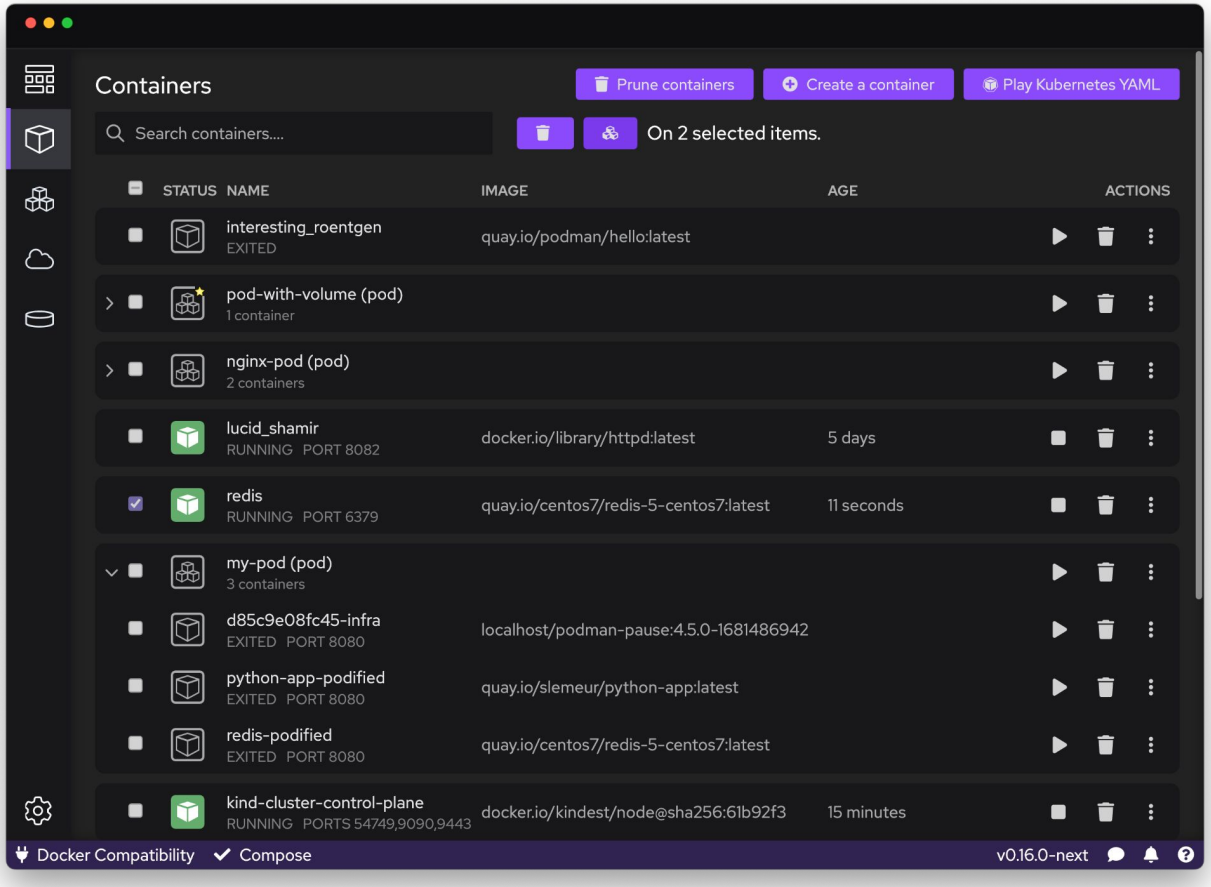
- Build, run, manage and debug Containers and Pods
- Run Pods with or without Kubernetes
- Manage multiple container Engines
- Compatibility with Docker Compose

### Enterprise Readiness

- VPN and Proxies configuration
- Image registry management
- AirGapped Installation

### Bridge between local and remote

- Connect and deploy to remote OpenShift clusters
- Enable remote managed services locally




Red Hat

podman desktop

Demo

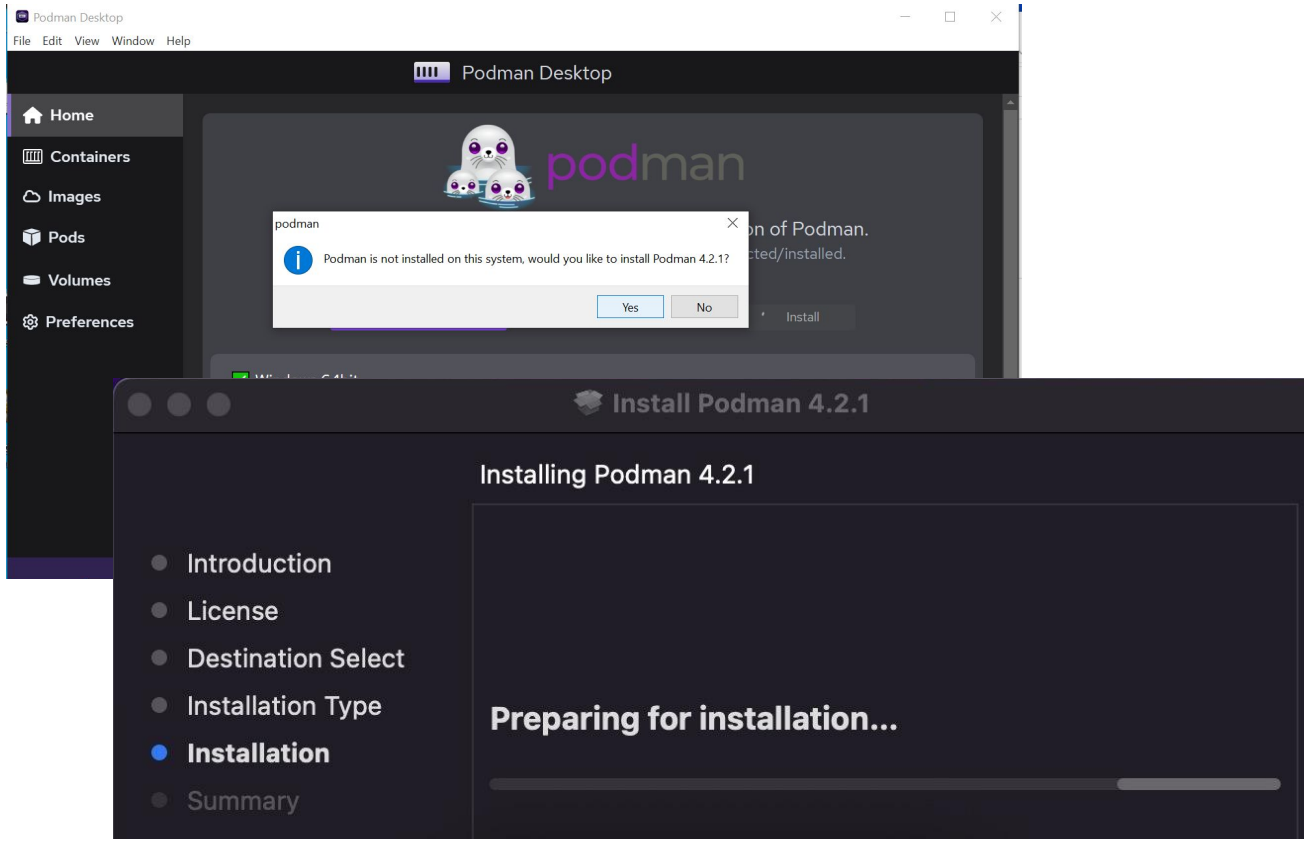


Red Hat

podman desktop

# Cross-platform Installation of Podman Container Engine

- Run anywhere:
  - **Windows** *(EXE, Chocolatey, Winget, Scoop)*
  - **Mac** *(DMG or Brew)*
  - **Linux** *(Flathub, Flatpack, Zip)*
- Install and keep-up-to date Podman Engine
- Configure and initialize Podman

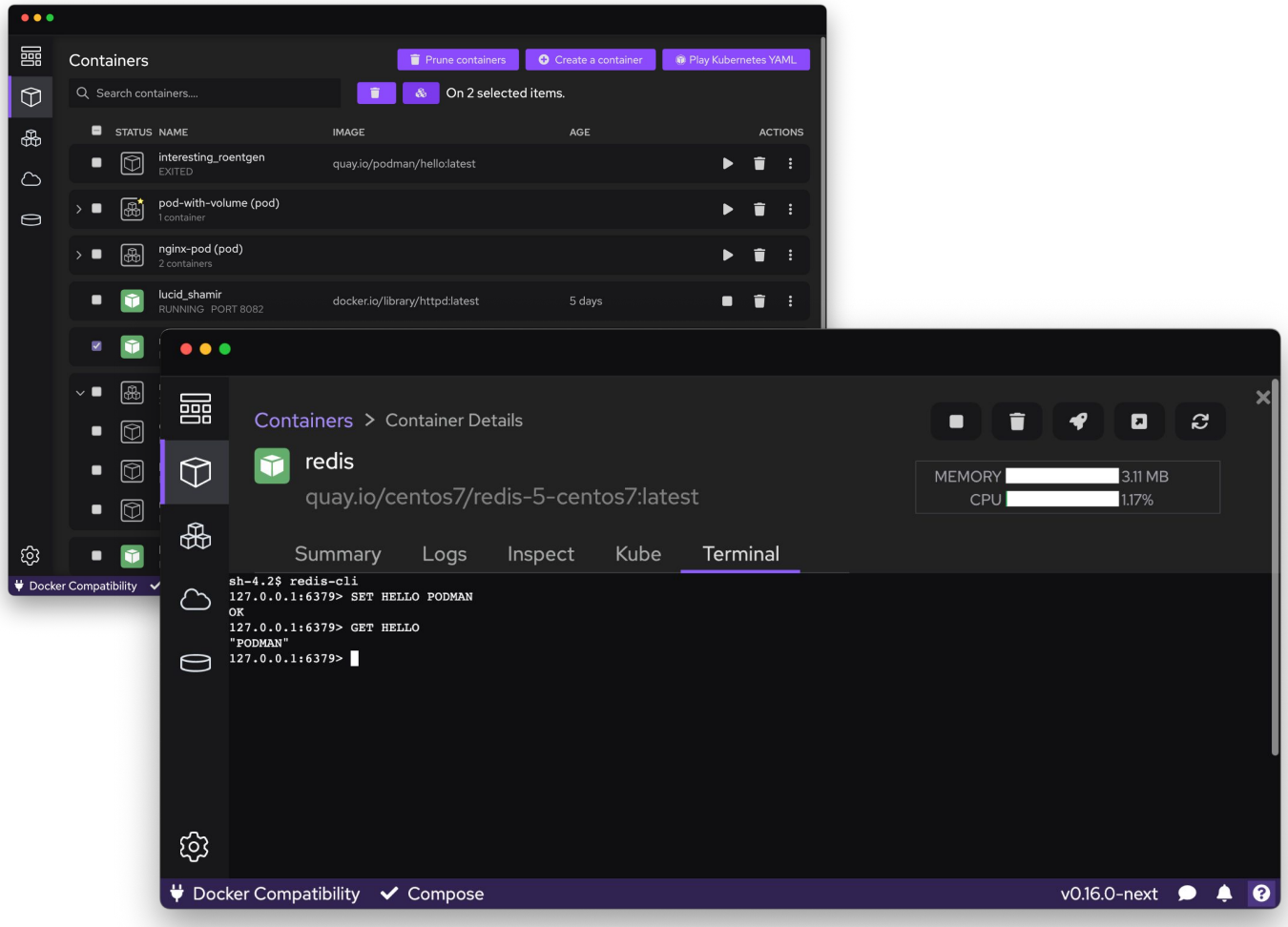



Red Hat

podman desktop

# Management of Containers

- Build images from Dockerfile or Containerfile
- Run, test, debug containers
- Run Compose files
- Built-in Terminal to SSH into containers
- Inspect Containers Logs
- Manage Volumes

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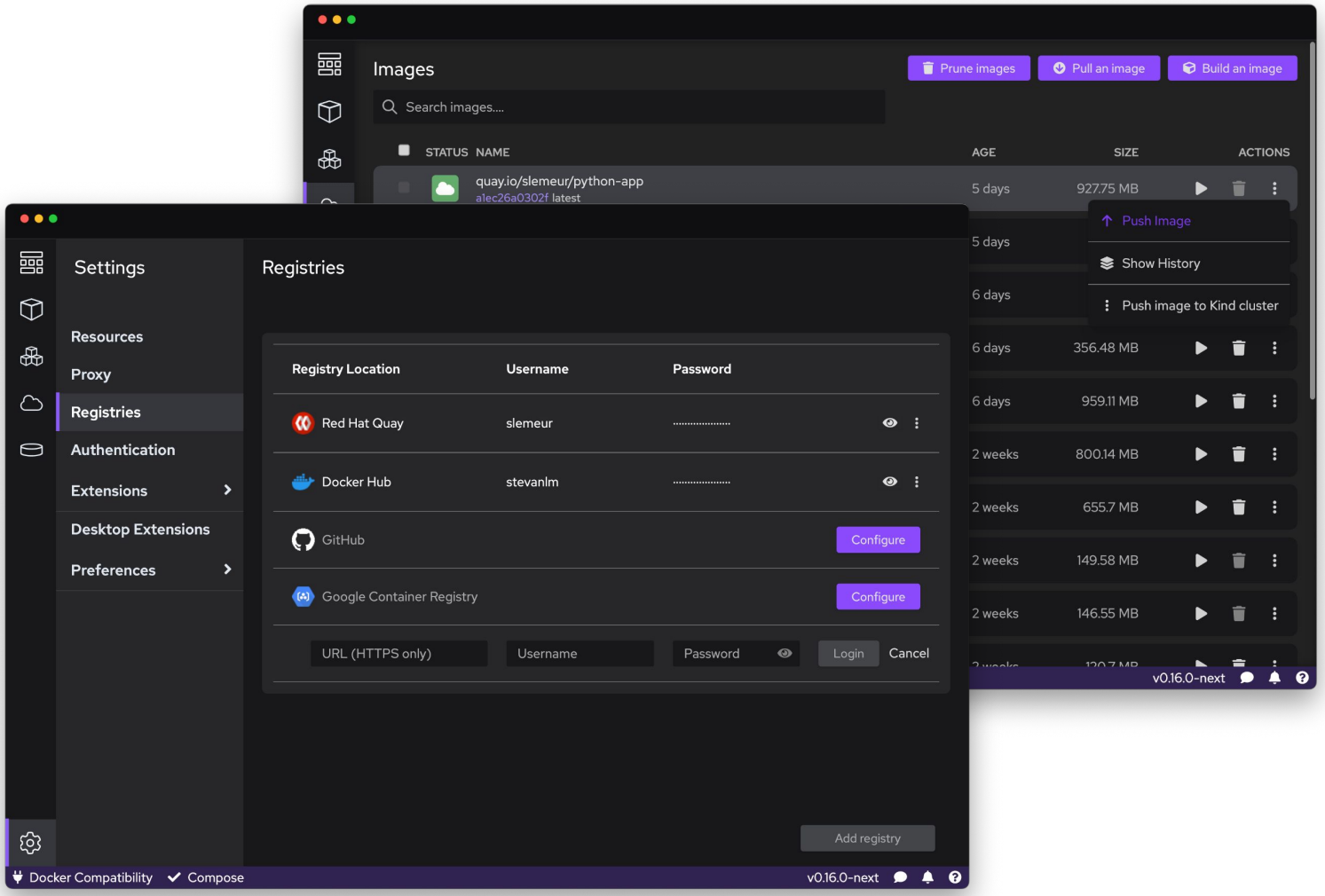
podman desktop

# Support for OCI Registries

- Configure multiple OCI registries
- Authenticate to registries
- Pull, tag and push images to your registries

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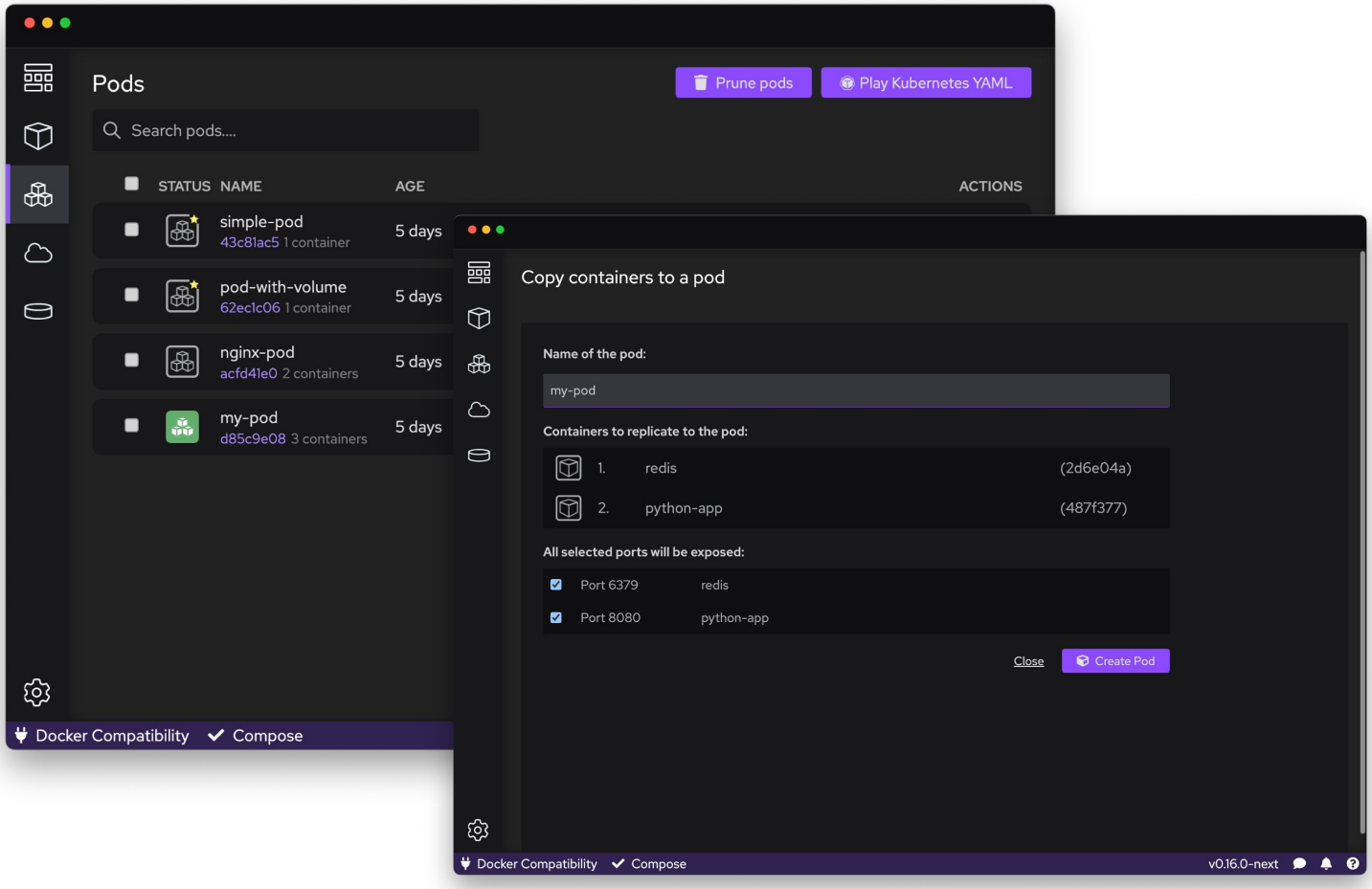
podman desktop

# Pods

- Create and start Pods with Podman
- Select containers to run as a Pod
- Play Kubernetes YAML locally without Kubernetes
- Generate Kubernetes YAML from Pods

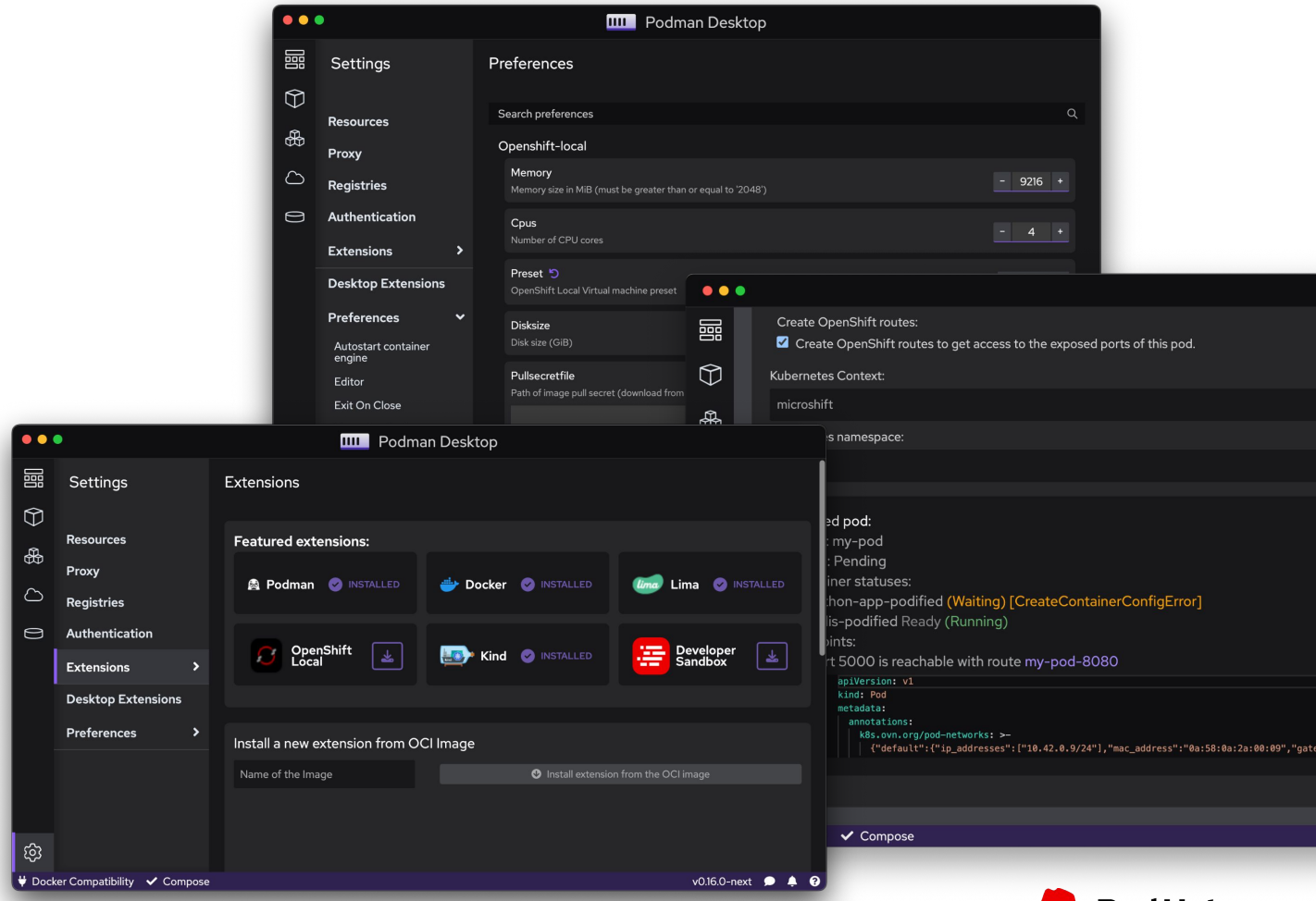



Red Hat

podman desktop

# OpenShift and Dev Sandbox Integration

- OpenShift Local extension
  - **Light and optimized** - Powered by Microshift (experimental)
    - For Developers
    - Minimal services set
    - Fast and lightweight
  - **Single-node OpenShift** - Powered by OpenShift Container Platform
    - Full services set
    - Complete and more resource-intensive
- Support for Dev Sandbox

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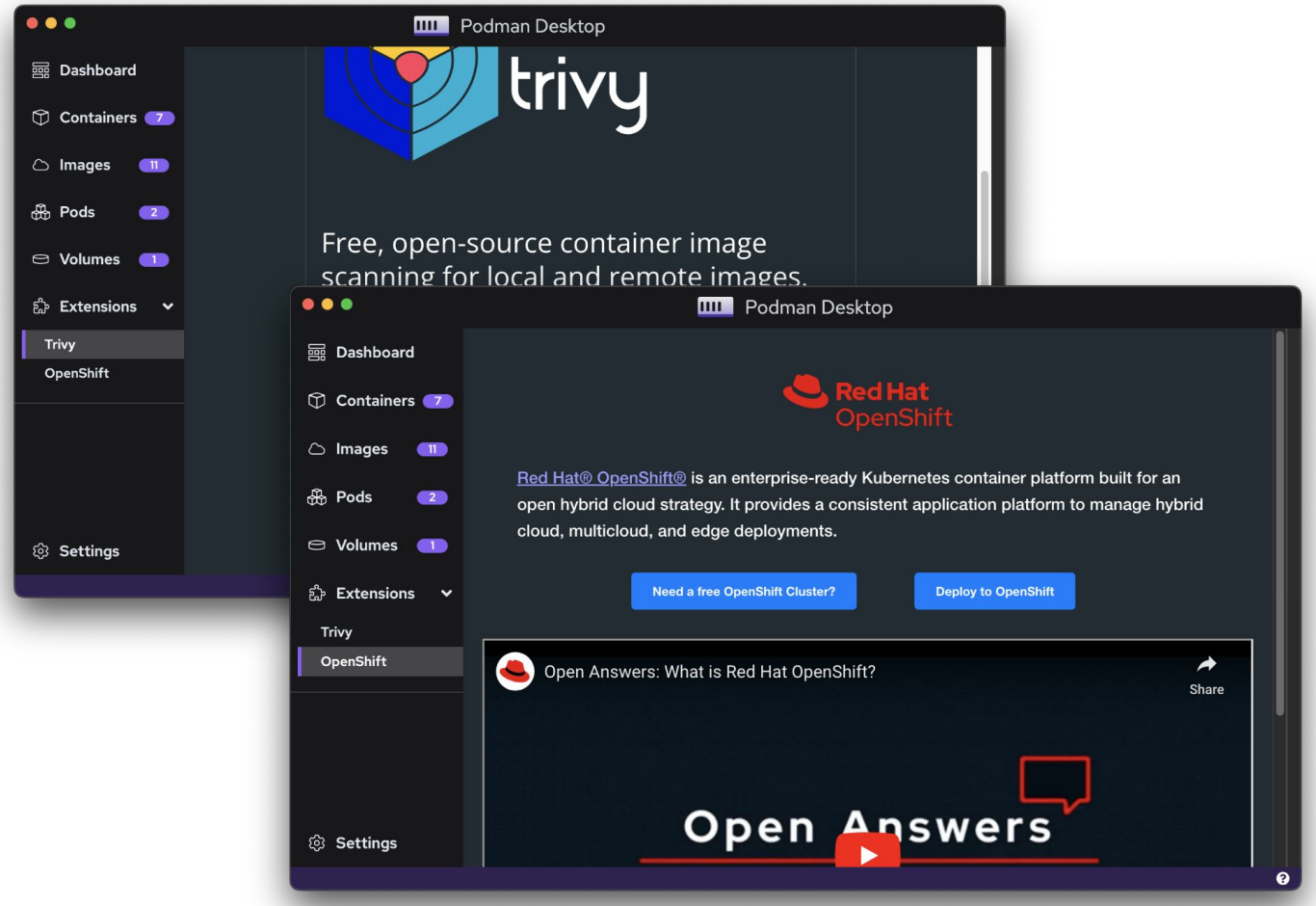
# podman desktop

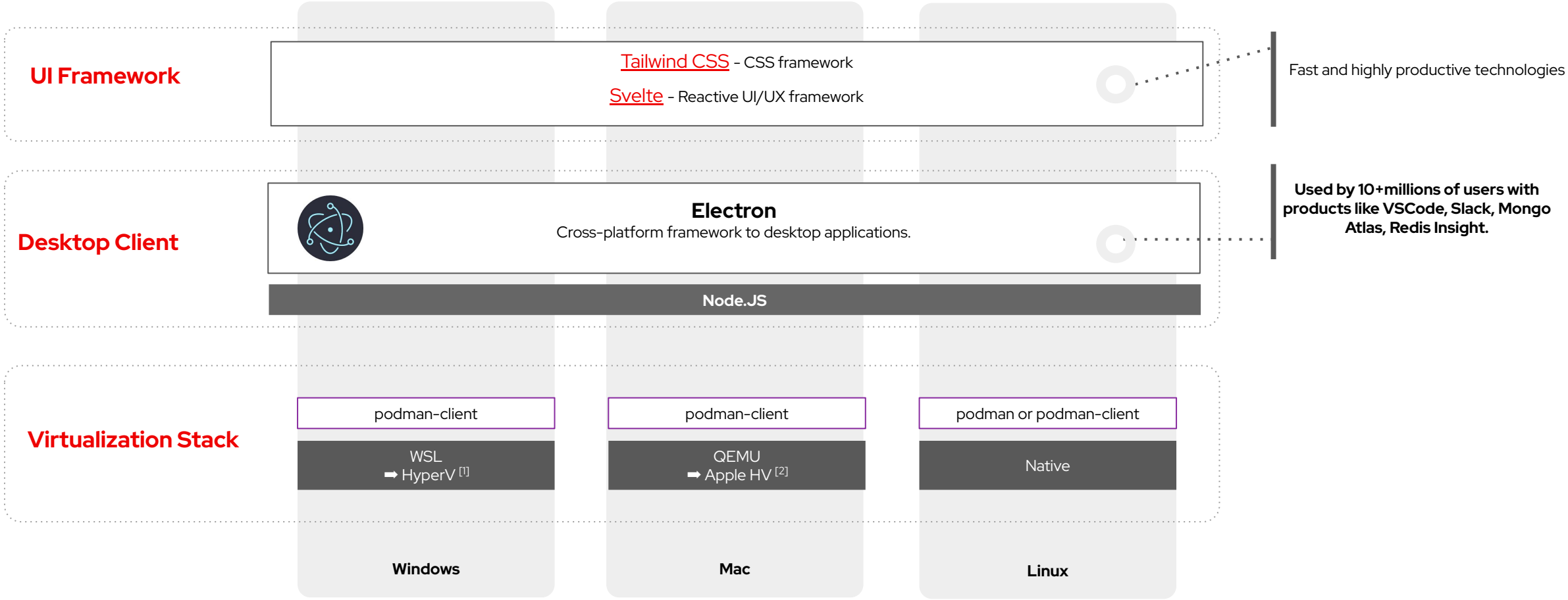
## Open: By default




- Support for multiple Container Engines
  - Podman
  - Docker
  - Lima
  - CRC / OpenShift Local
  - Future local light distributions of Kubernetes
- Support for Docker Desktop Extensions

Red Hat

# Building with proven foundations and leveraging our experience

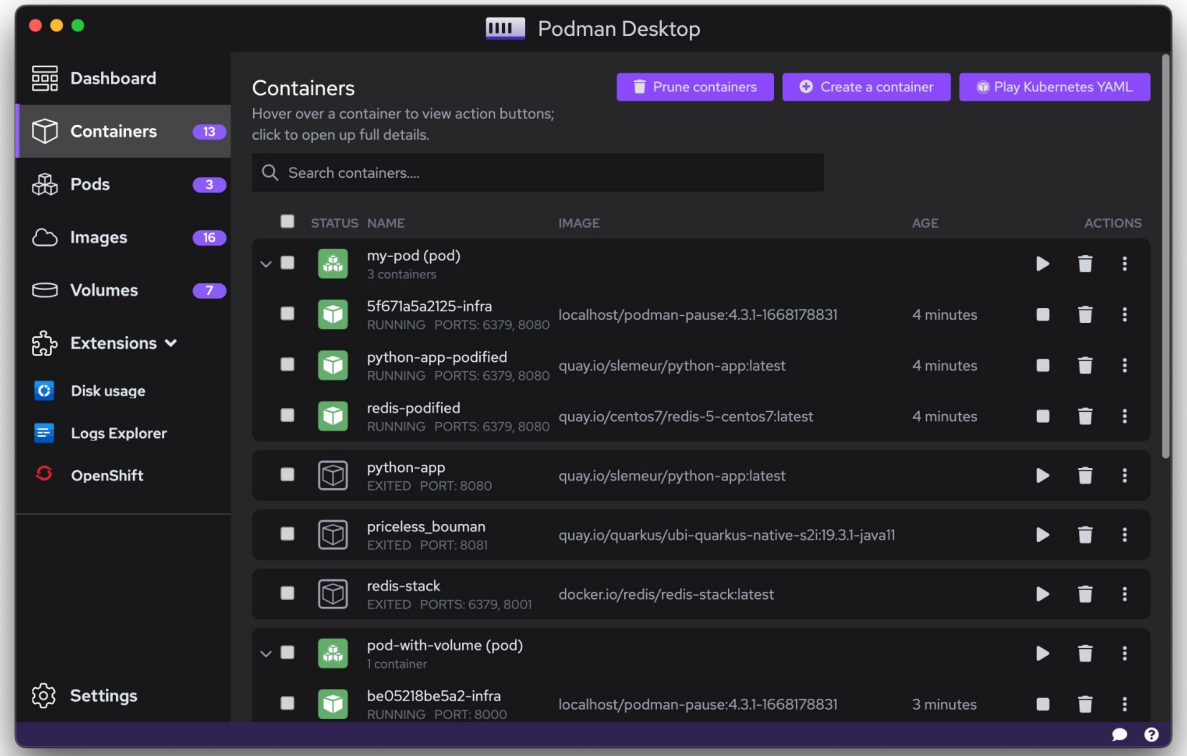



[1] HyperV under active development, targeted for podman 4.5
[2] Apple Hypervisor support in early (but active) planning

# Extensibility

## From extension points to other container/K8s technologies

Supports Docker Desktop extensions




But Podman Desktop extensions can also do much more:

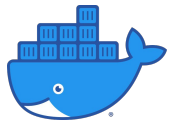
- **Container engine providers**
- **Kubernetes providers**
- Add actions
- Add menus
- Add configuration
- **Add default registries**
- Add to status bar
- Add to system tray
- ...

Current extensions:

Podman


Kind


Lima



Docker

OpenShift Local

Default Registries

...

# Podman Desktop

## Short Term
(3-6 months)

Podman Desktop

**Dashboard:**
- Onboarding Experience
- Better Settings/Configuration Management
- Networks

**Kubernetes Integration:**
- Kind Support
- Enhanced transition from Containers to Pods
- Enhanced transition from Pods to Kubernetes

**Container Tooling:**
- Compose support

**Red Hat Integration:**
- Option for installing OpenShift Local
- Integration with Red Hat Developer Sandbox
- Image OpenShift Readiness Checks

## Mid Term
(6-9 months)

Podman Desktop

**Kubernetes Integration:**
- From Compose to Kube
- Bridge with Kubernetes workloads

**System Tray:**
- Display Resource Utilization

**Dashboard:**
- Kubernetes workload explorer
- Dashboard with Statistics

**OpenShift Local:**
- Microshift for Developers

**Red Hat Integration:**
- Red Hat Container Catalog

## Long Term
(9 months+)

Podman Desktop

**Continuation from the previous items**

**+**

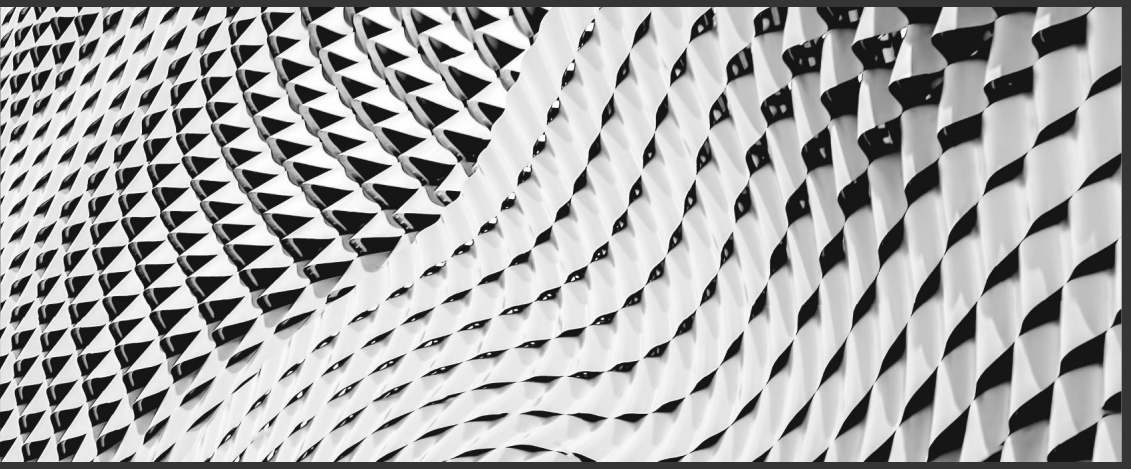
**Tell us your problems and what you need to be solved!**

# Podman Desktop

## Resources

- Podman Desktop Site
- GA Announcement
- Introduction with Setup and 101
- Github Project
- Red Hat Community Presentation

# AnsibleFest

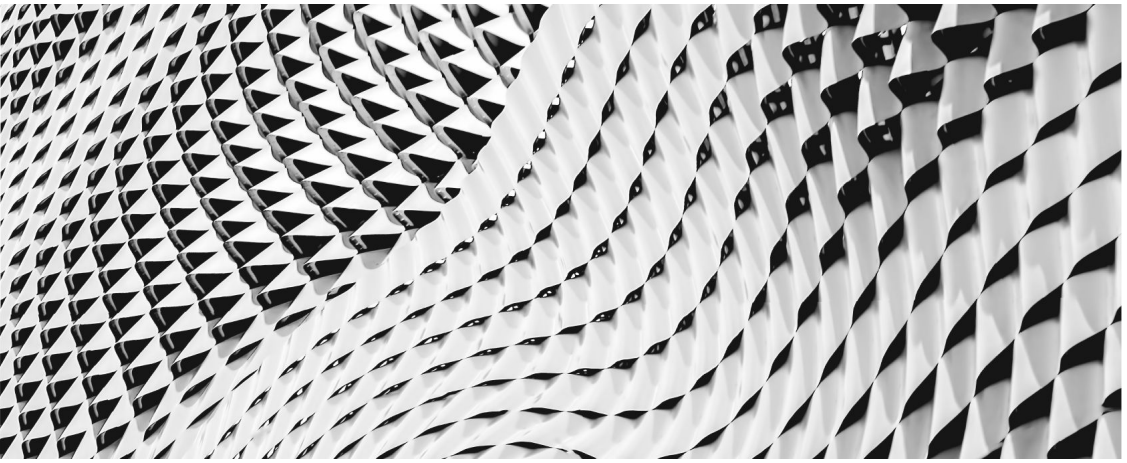


AnsibleFest brings open source experts together to exchange ideas on how to create, manage, and scale automation in ways that best address your challenges.



Red Hat

# Ansible Lightspeed



Ansible Lightspeed with IBM Watson Code Assistant is a generative AI service that helps developers create Ansible content more efficiently. It reads plain English entered by a user, and then accesses IBM watsonx foundation models to generate automation code recommendations in Ansible syntax that are ready to quickly deploy as an Ansible Playbook.



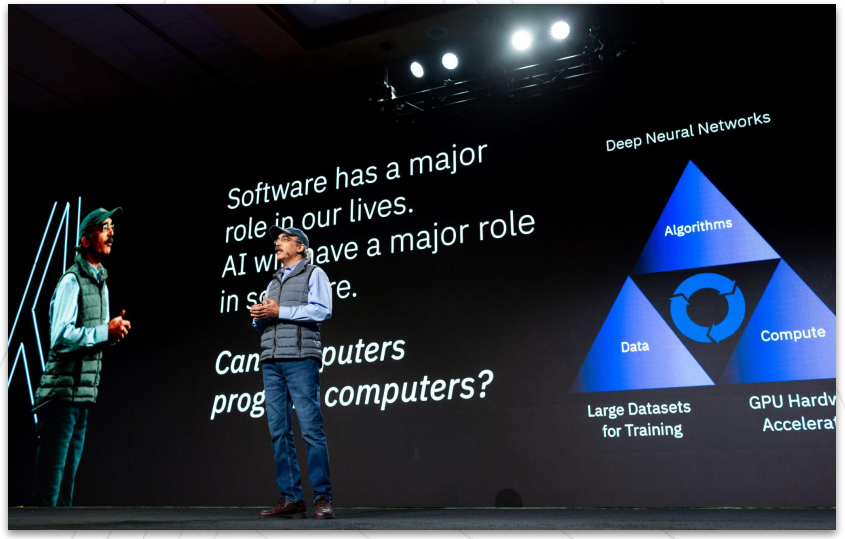
Red Hat

# Red Hat + IBM Research partnered to bring AI to Ansible

**Project Wisdom was an initiative by Red Hat and IBM to infuse Ansible with AI superpowers.**

Our goals:

- To bring the **power of AI to the Ansible** code experience.
- To help **address the growing IT automation skills gap** by making Ansible more accessible to a wider swath of IT professionals.
- To **help experienced Ansible creators** be more productive, efficient, and error-free.


Dr. Ruchir Puri, IBM Research, AnsibleFest 2022 keynote

# Red Hat + IBM have developed a generative AI service for IT automation


## Project Wisdom has evolved.

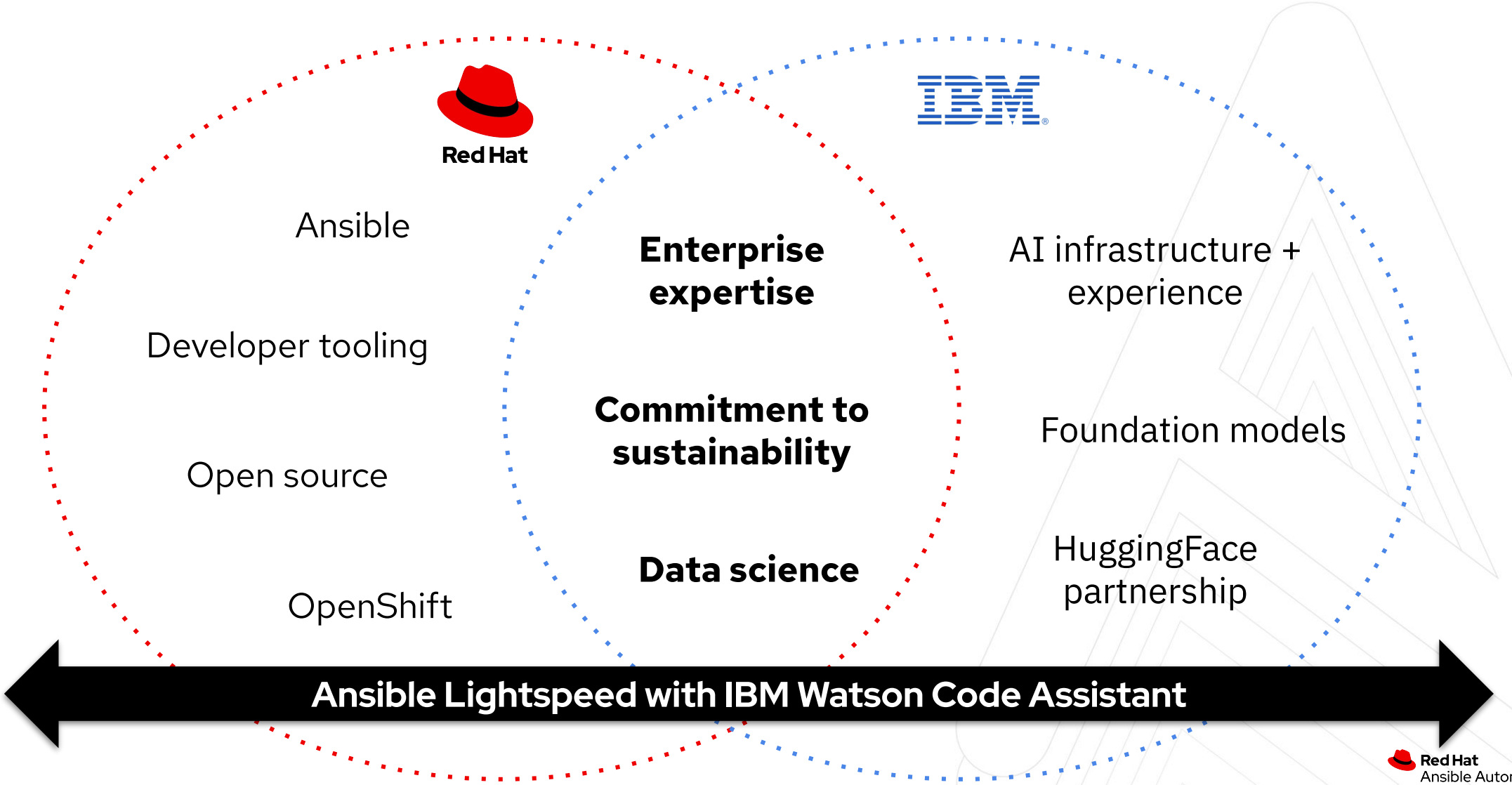
The partnership between Red Hat and IBM continues, but the companies are focusing on unique, but complimentary generative AI capabilities.


## Ansible Lightspeed
with IBM Watson Code Assistant.

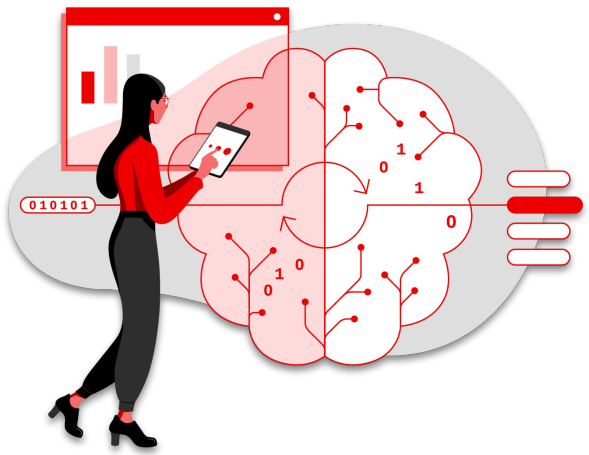
A generative AI service for Ansible automation content creators, that speeds up with Playbook development process, while making it easier for automation experts to turn their domain expertise into clean and compliant YAML code.

Red Hat
Ansible Automation
Platform

# Leaning into respective – and shared – strengths



# Why generative AI for automation?



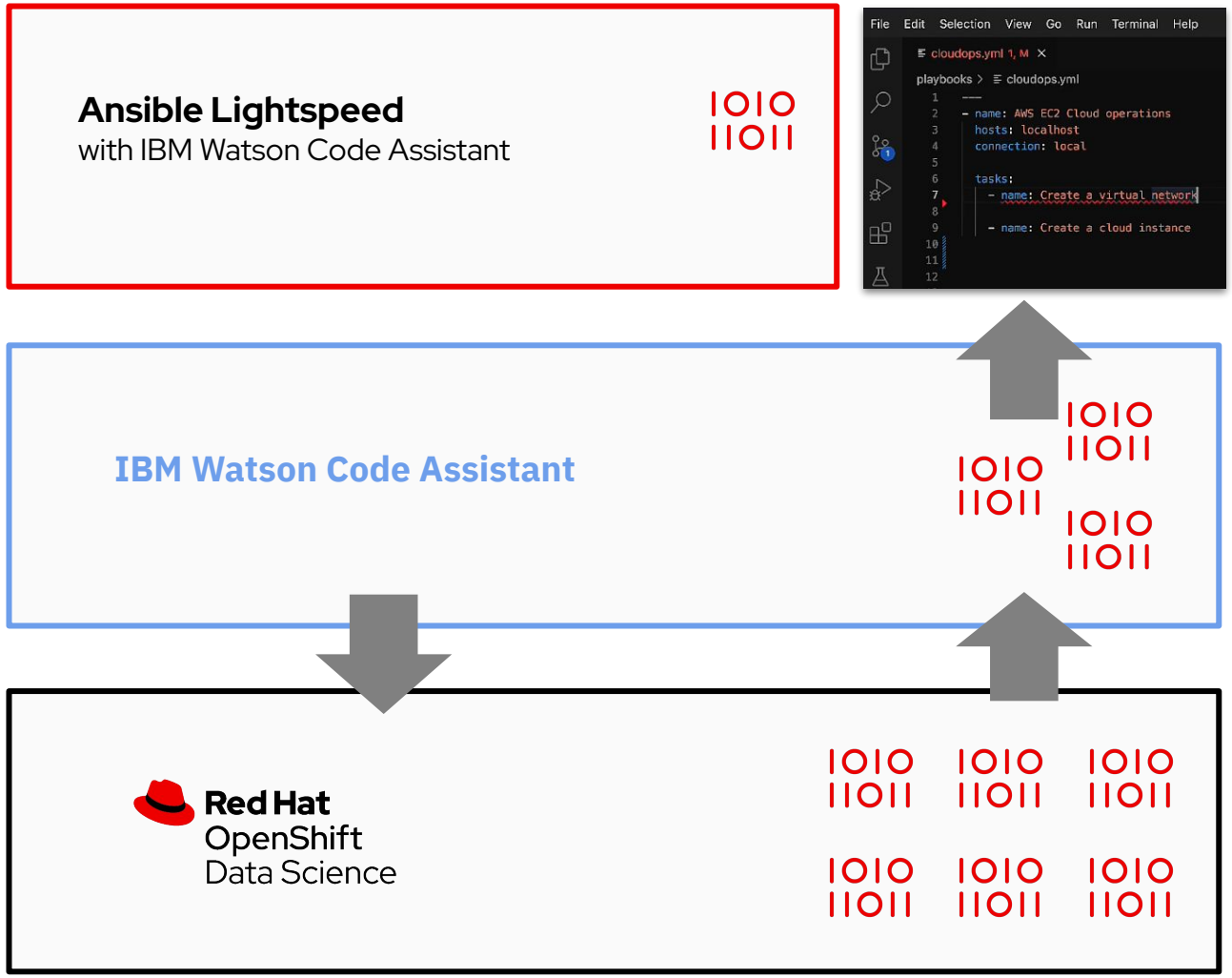

## To help teams to do more with less

- IT Automation is a key driver of operational efficiency, and frees teams up to focus on innovation.
- But standing up automated workflows can be complicated and time-consuming. Writing quality automation code takes time and resources.
- Generative AI can greatly enhance the automation creation experience, helping developers produce better automation content, more quickly.
- This in turn boosts the efficiency of an organization's automation efforts, improving ROI and time to value.

## To bridge automation skills gaps

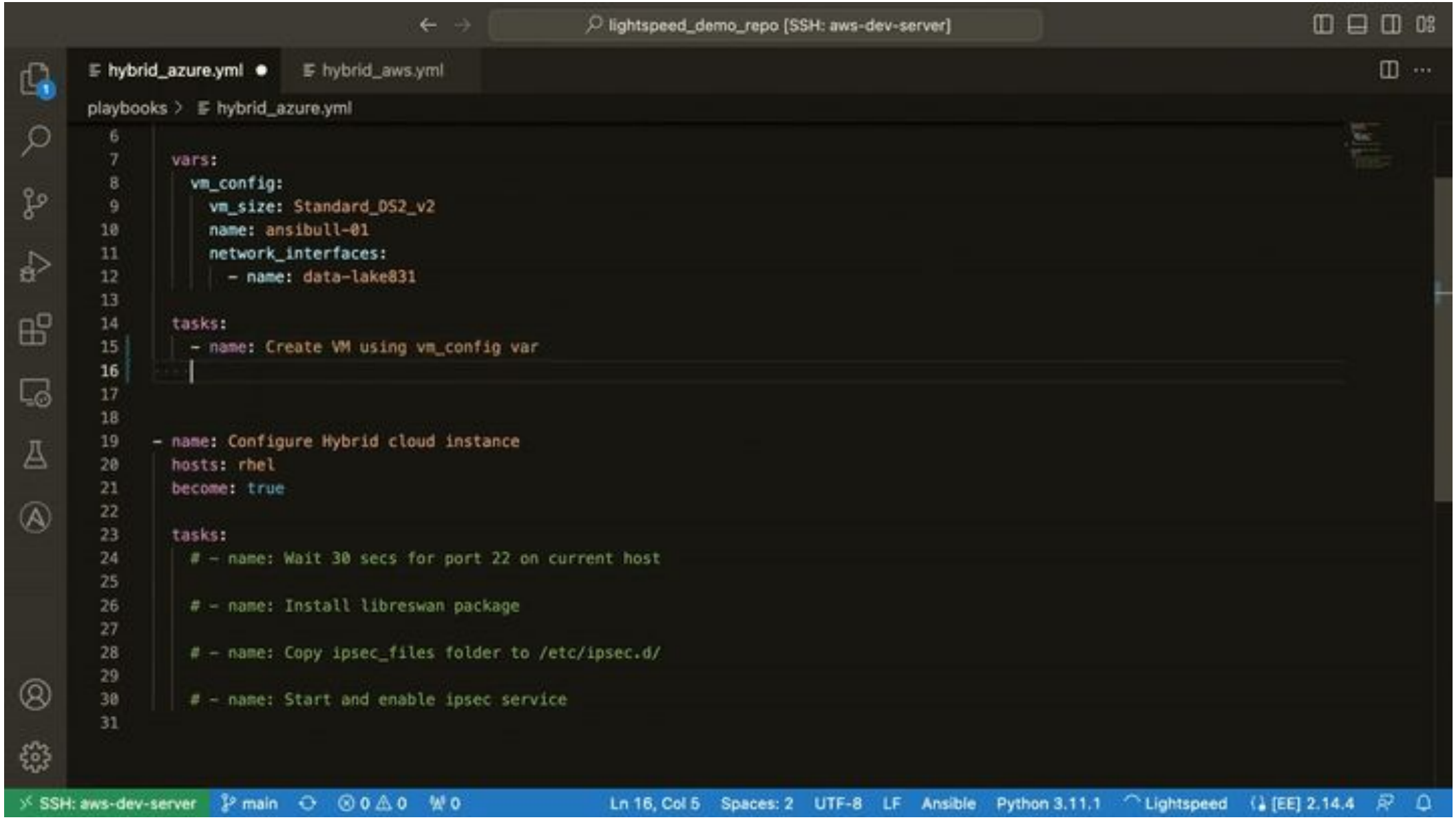
- A key challenge hindering the efforts of organizations looking to modernize is an automation skills gap.
- In addition to enhancing the productivity of experienced automation talent, generative AI has the potential to expand the aperture of who can create useable automation content.
- How? By making it easier for automation domain experts to translate their expertise into working automation code.

# Ansible Lightspeed with IBM Watson Code Assistant






Red Hat


lightspeed_demo_repo [SSH: aws-dev-server]
hybrid_azure.yml
hybrid_aws.yml
playbooks > hybrid_azure.yml
vars:
vm_config:
vm_size: Standard_DS2_v2
name: ansibull-01
network_interfaces:
- name: data-lake831
tasks:
- name: Create VM using vm_config var
- name: Configure Hybrid cloud instance
hosts: rhel
become: true
tasks:
# - name: Wait 30 secs for port 22 on current host
# - name: Install libreswan package
# - name: Copy ipsec_files folder to /etc/ipsec.d/
# - name: Start and enable ipsec service
SSH: aws-dev-server
main
Ln 16, Col 5
Spaces: 2
UTF-8
LF
Ansible
Python 3.11.1
Lightspeed
[EE] 2.14.4



Red Hat

# Roadmap: Ansible Lightspeed with IBM Watson Code Assistant

## Now

- **Ansible Task Generation**
  - Use natural language as an Ansible task to request a recommendation for the correct module and variables
- **VS Code Extension**
  - Access through the Ansible VS Code extension
- **Technical Preview**
  - Use the service for free through the technical preview
  - **Launches end of June 2023**

## Near term

- **Playbook Recommendations**
  - Generate full Ansible playbooks from natural language
- **Content Monitoring and Improvement**
  - Monitor Ansible content repositories for improvements and receive automatic pull requests
- **Content Discovery and Matching**
  - Find existing Ansible content instead of writing from scratch
- **REST APIs**
  - Integrate CI/CD pipelines, developer tools, and other systems
- **Model Fine Tuning**
  - Use Watson Code Assistant to fine-tune recommendations

## Long term

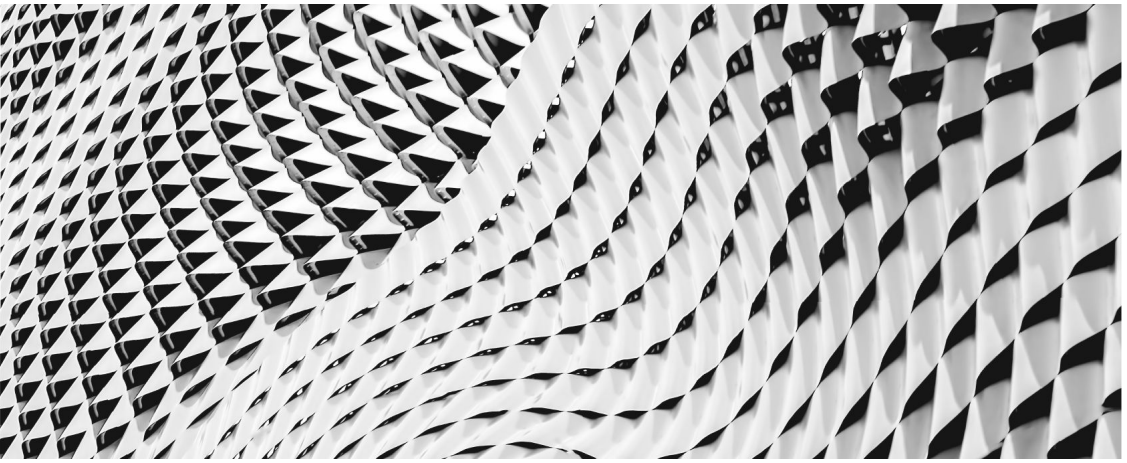
- **Content Description**
  - Generate descriptive documentation about the automation you build
- **Content Controls**
  - Specific controls around data sent to Ansible Lightspeed
- **New User Interfaces**
  - Web-based, CLI, and other code editors
- **Custom Post-Processing**
  - Tune recommendations for your organization's policies and practices
  - Parse unstructured data into structures
- **Runbook Recommendations**
  - Support recommendations for Ansible Event Driven Automation

# Ansible Lightspeed

## Resources

- Technology Preview of Ansible Lightspeed
- Press Release

# Event Driven Ansible



Smart IT delivered at the speed of automation

#OpsAsCode



Red Hat

# Introducing Event-Driven Ansible

Achieve new milestones in IT service efficiency

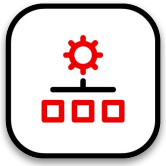
**Automate** decision making

**Leverage** numerous sources of events

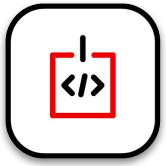
**Implement** event-driven automation within and across multiple IT use cases

**Achieve** new milestones in efficiency, service delivery excellence and cost savings

# One subscription. One integrated platform.

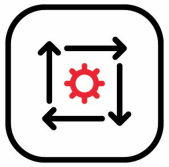


**Automation controller**
Automation control plane



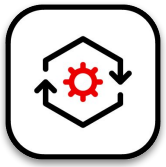
**Automation execution environments**
Scalable packaging and runtime execution plane

**Automation mesh**
Connectivity across diverse enterprise automation environments



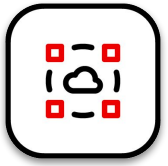
NEW

**Event-Driven Ansible**
Automatic response to environment changes based on environment intelligence



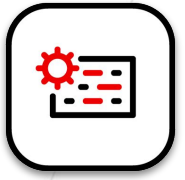
**`Ansible-builder`**
Ansible containerized execution environment builder

**Automation analytics & Red Hat Insights**
Visibility, predictive analytics, and more

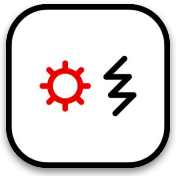


**Ansible Content Collections**
100+ certified content collections

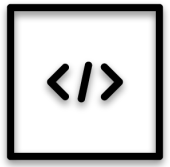
**Automation hub**
Hosted certified content repository.



**`Ansible-navigator`**
Execution environment orchestration tooling



**Ansible Platform Operator**
Package, deploy and manage this platform on Red Hat OpenShift



**Microsoft VS code plugin**
Write and manage Ansible code with Visual Studio

Red Hat
Ansible Automation Platform

# A typical event driven automation process

## RECEIVE EVENT

- Work with third party sources of events
- Send important events to Event-Driven Ansible

## DECIDE ON RESPONSE

- Known problem identified
- Automated resolution triggered

## RESPOND AUTOMATICALLY

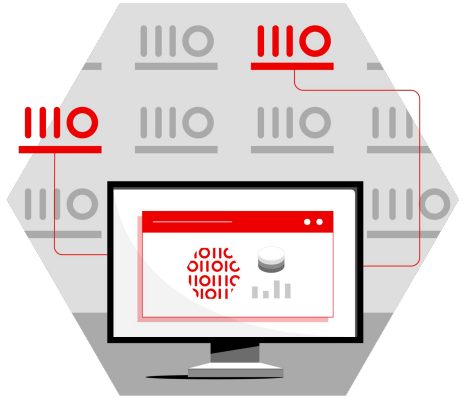
- Outage incident created
- Support team notified
- Remediation executed

## WORK ACROSS MULTI-VENDOR IT OPERATIONS

Work flexibly and well with multi-vendor monitoring and other solutions across the event driven architecture with appropriate approvals, controls and awareness

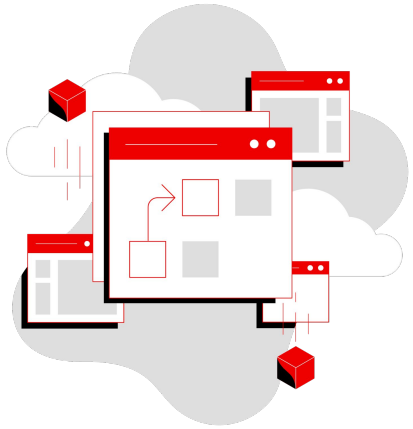
# Key building blocks in Event-Driven Ansible

Simple, powerful, agentless



## Sources

All the sources of event data you want to use



## Rules

What you will create using Event-Driven Ansible®

## Actions

When a condition or event is met, the Ansible Rulebook executes

**Ansible Rulebooks** contain the source of the event, as well as the instructions on what steps to perform when a certain condition is met–and it is all very flexible.

# Why Event-Driven Ansible?

## Flexibility and Extensibility

### Flexible from source to rule to action

- Real-time, multiple sources to feed actions
- Flexible integrations: event buses, webhooks or vendor-specific
- “Bring your own source” plugin creation

### Robust automation handler

- Critical solution for acting on events, with decisioning
- Flexible ways to take action: Ansible Playbooks or direct modules
- Simple to complex rules development

### IT environment-friendly

- Automate any IT use case quickly and simply
- Partner Content Collections model by Red Hat and partners

### Single automation platform for all IT needs

AT GA

- Choice of automation modes, manual or event-driven
- Familiar to existing Ansible users, with YAML-like Ansible Rulebook creation

Red Hat

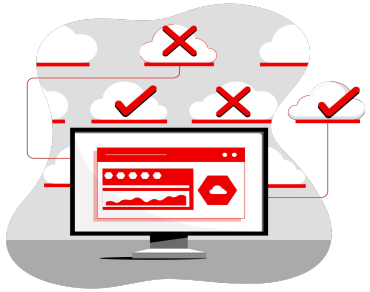
# Suggested use cases for getting started

## Service ticket enhancement

Automate fact gathering

Network administration

Edge device management

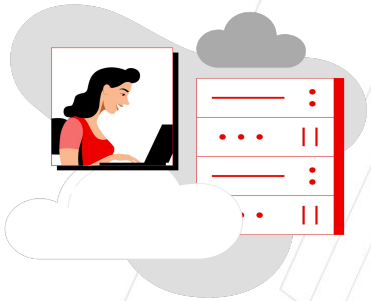


## Remediation

Drift

Slow performance

Outages



## User management

User authentication and access

Login issues

Group and role access

# Event-Driven Ansible is Use Case-Friendly

## Apply to any of your IT domains for full automation of key tasks

### Networking

- Basic network troubleshooting tasks
- Remediate configuration issues based on port events
- Infrastructure awareness based on routing events

### Edge

- Remediate application deployment issues
- Trigger edge app redeployments
- Automate application scaling

### Cloud

- Trigger cloud estate check from instance creation events
- Automate remediation tasks from service bus events

### Infrastructure

- Escalate Infrastructure issues for improved observability
- Ensure compliance post change events

### Security

- Automate log enrichment from a security event.
- Automate security responses from incidents.
- Escalate events for human intervention

### Applications

- Allow applications to trigger remediation of issues from patterns
- Enrich healing capabilities of applications and their dependencies.

# Event-Driven Ansible integrations and roadmap

## CERTIFIED AND VALIDATED CONTENT
**(Expected delivery Q2 and Q3 2023)**

- Cisco NX-OS
- Cisco ThousandEyes
- CrowdStrike
- Cyberark
- Dynatrace*
- F5
- IBM Instana* and IBM Turbonomic*
- Palo Alto Networks
- Red Hat Insights
- Red Hat Openshift
- ServiceNow
- Zabbix
- AWS SQS
- Azure Service Bus
- GCP Pub/Sub
- Kafka (AMQ Streamz
- Prometheus/Alertmanager
- Webhooks
- watchdog (file system watcher)
- url_check (url status check)
- range (event generation plugin)
- file (loading facts from yaml)

*Collection includes both certified and validated content.

## COMMUNITY CONTENT

- Arista

## ROADMAP FOR INTEGRATIONS

- Additional ITSM solutions
- Additional observability / monitoring tools

Blog: Event-Driven Ansible ecosystem partners

(as of May, 2023)



Red Hat

# Resources

Get started on your event-driven automation journey

## MANAGERS

Event-Driven Ansible web page

451 Research: The Impact of Event-Driven Automation on IT Operations

IDC QuickTake AnsibleFest 2922, including Event-Driven Ansible

Blog: Highly Efficient, Resilient IT operations

Blog: Introducing Event-Driven Ansible

## TECHNICAL ROLES

Event-Driven Ansible web page

Free self-paced labs

Ansible Rulebook documentation

Event-Driven Ansible blog series

Blog: Getting started with Event-Driven Ansible

Blog: Creating custom plugins

**ansible.com/event-driven**

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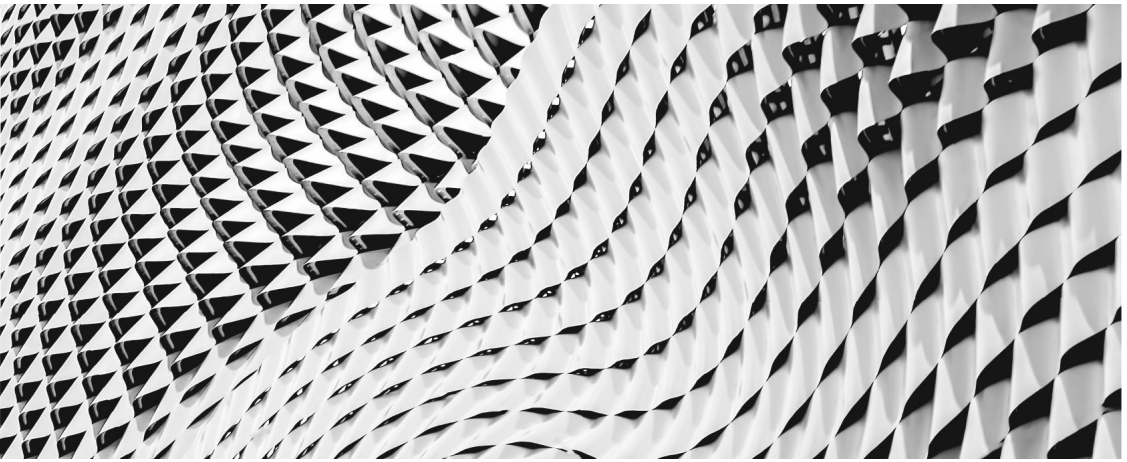
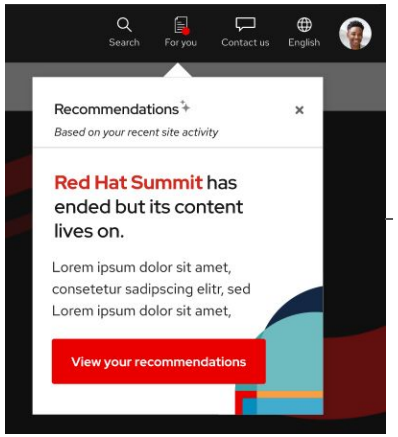
# Everything Else

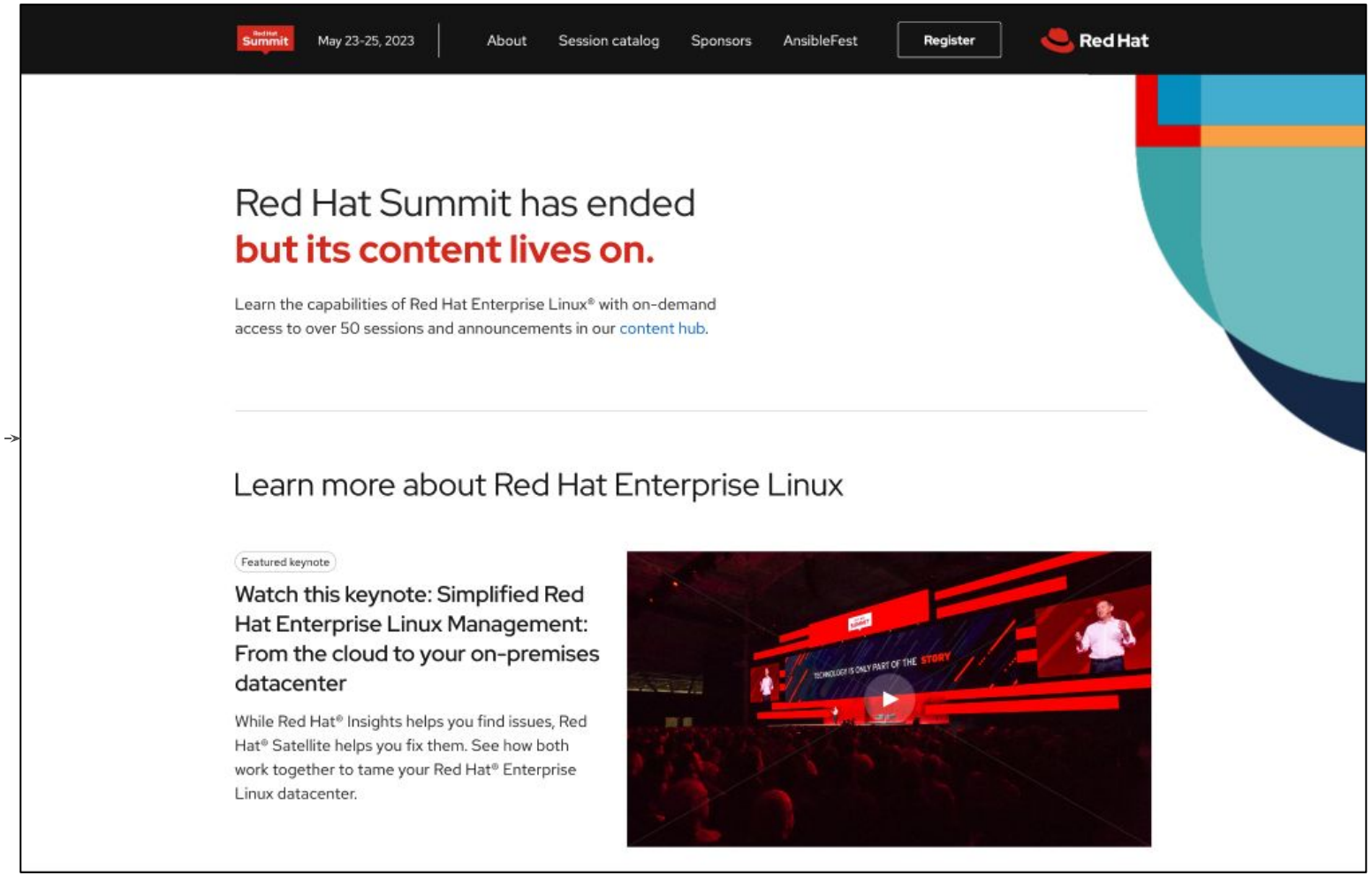




Red Hat

# “For you” Experience – launched Friday, 5/26




Let’s take a look at the experience on redhat.com.

# Everything Else

## Resources

- Making cloud-native more accessible: Red Hat's vision for OpenShift with hosted control planes
- OpenShift 4.13 is now available
- Smoothing the transition: CentOS Linux 7 to RHEL
- Virtual Content Hub
- Save the Date for Summit 2024
- The Moment for AI by Matt Hicks

# 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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