

OpenShift Workloads



Migration Toolkit for Applications



Migration Guidance

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



Ease OpenShift adoption

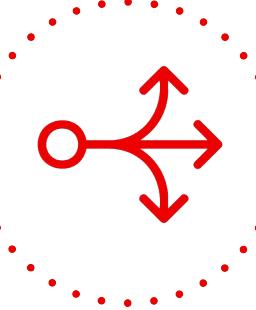


Gather Insight

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



Reduce risks



Extended Scope

Fully integrated toolkit leveraging tools from the CNCF project Konveyor with a seamless user experience



Provide value on each stage of adoption

V0000000





OpenShift Serverless



- Elevated Developer Experience for apps creation with Serverless functions
- Orchestration of microservices and functions
- Discovery and Subscription of Events for functions and microservices
- Central catalog of events from heterogeneous sources across hybrid and multi-cloud.



Increase the ease of use

- Security Guard for securing serverless containers
- End to End encryption for internal and external services
- Multi-Tenancy for services and events
- Broker and Channel authentication and authorization



Reduce exposure and risk

- OpenShift Serverless everywhere
- Default deployment for stateless workload
- Integration with other platform features, Custom Auto Metrics scaler, GitOps for deployment rollout



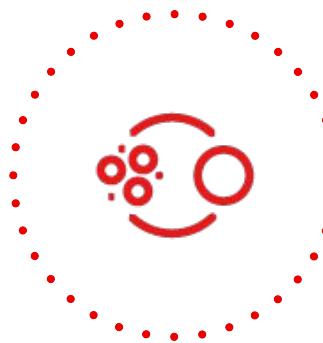
Increased productivity

Developer Experience



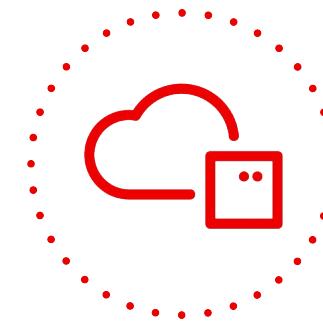
Onboarding

- Accelerate onboarding of Red Hat platforms via IDPs in customer environments.
- Gain recognition in Backstage.io, the leading open source IDP project



Local Development

- Improve developer productivity of building and testing containerized applications in local environments
- Increase adoption of existing local development tools to drive growth of Red Hat platforms



Cloud-hosted Services

- Grow overall trial/evaluation impact with Dev Sandbox for Red Hat platforms and services
- Launch a managed service offering to import, build, and deploy applications for enterprise-grade applications
- Define a competitive free to fee journey for advanced capabilities and Red Hat platforms/services

V0000000



Red Hat OpenShift Dev Spaces

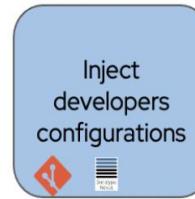
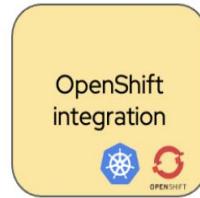
What's New

- Microsoft Visual Studio Code - Open Source is the default editor
- Supported Github Enterprise Server
- Improved workspace startup time
- OCP 4.12 will be supported with V3.4 to-be released by 1Q'23

Resources

Dev Spaces Documentation

- [Admin Guide](#)
- [User Guide](#)
- [Known Issues and Release Notes](#)
- [Upstream roadmap](#)



IDE Supported	VS Code, Eclipse Theia,(Tech Preview: JetBrains IntelliJ)
Languages	Languages that the above IDE Supports
Repositories	GitHub, Gitlab, Bitbucket
Browser	Chrome,Firefox
Platforms	OCP 4.10, 4.11

Dev Sandbox for OpenShift

Developer Sandbox

✓ Will be upgraded to 4.12 in Feb

Operators recently added

- ▶ Pipelines
- ▶ Updated RHODA with AWS Controller for Kubernetes - RDS

Key deliverables

- ▶ Add proxy for IDE integration
- ▶ Added 3rd Cluster

The screenshot shows the Pipeline builder interface. On the left is a sidebar with navigation links: +Add, Topology, Observe, Search, Builds, Pipelines, Helm, Project, ConfigMaps, and Secrets. The main area is titled "Pipeline builder" and includes a "Configure via:" section with radio buttons for "Pipeline builder" (selected) and "YAML view". Below this is a "Name" field containing "new-pipeline". Under "Tasks", there is a diagram showing a sequence of three boxes: "Add task", "Add task", and "Add finally task". A blue "Add task" button is located at the bottom right of the "Add finally task" box. At the bottom of the main area are sections for "Parameters" (empty) and "Resources" (empty).

Maven / Gradle Java Tooling

Key Updates

- ▶ Version 1.10.0 is now available
- ▶ **Introducing Eclipse JKube Remote Development (Preview)**
 - ▶ The new Kubernetes remote development feature provided by Eclipse JKube allows you to run and debug your Java applications from your local machine while connected to your Kubernetes cluster. It's essentially like placing your local development machine *inside* your cluster.
- ▶ Automatic Health Check configuration for projects using SmallRye Health
- ▶ Improved support for Podman
- ▶ Updated base images
- ▶ Many other bug-fixes and minor improvements

Learn more: [Blog Post](#)



Fabric8 Kubernetes Client

Key Updates

- ▶ Version 6.3 is now available
- ▶ DSL support for server-side apply
- ▶ Blocking delete operations
- ▶ 🐛 Many other bug fixes and minor improvements

Capabilities from 6.2:

- ▶ Kubernetes model types updated to v1.25
- ▶ Multiple improvements for Informers
- ▶ Improvements to the OSGi managed clients
- ▶ New annotations and features for the CRD generator

Learn more: [Blog Post](#)



Podman Desktop



podman desktop

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

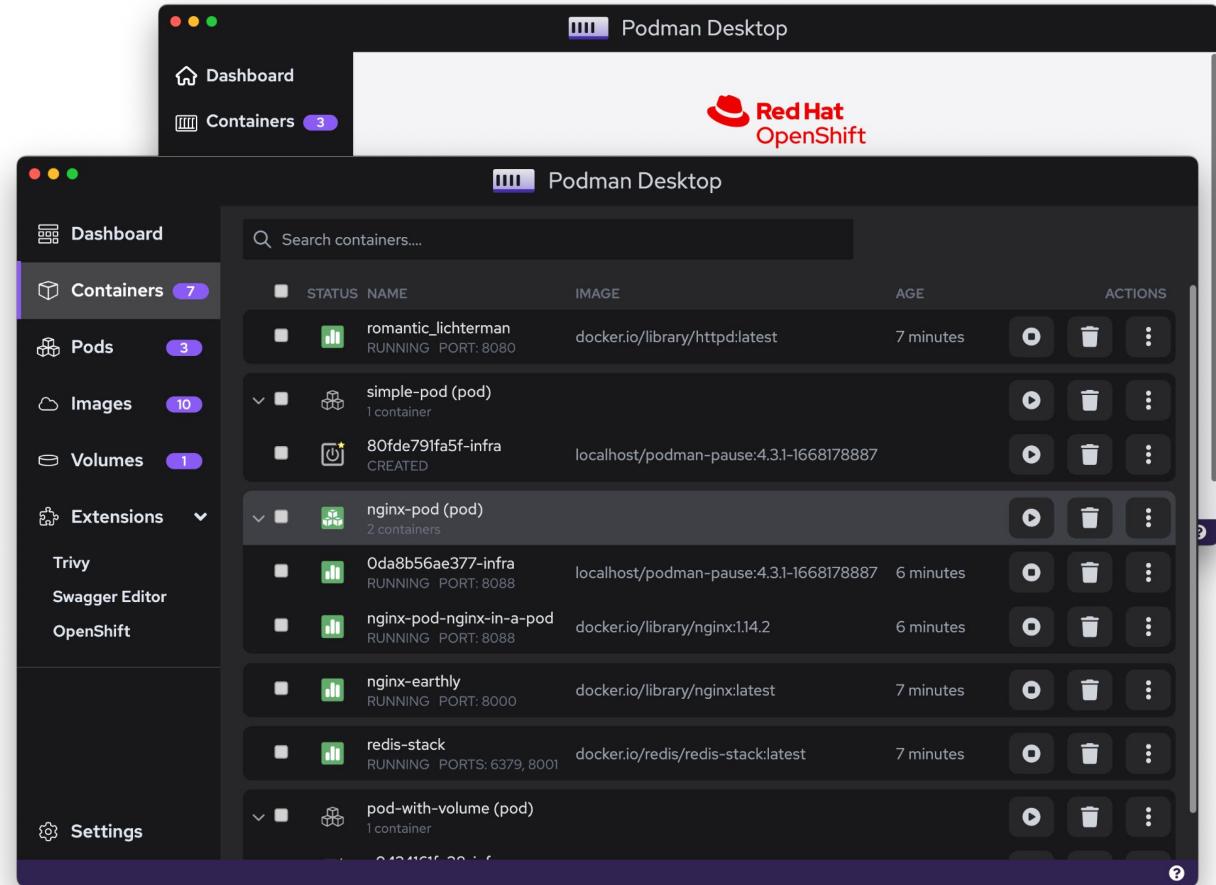
- Build, run, manage and debug Containers and Pods
- Run Pods with or without Kubernetes
- Podifying capabilities
- Manage multiple container Engines

Enterprise Readiness

- VPN and Proxies configuration
- Image registry management

Bridge between local and remote

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

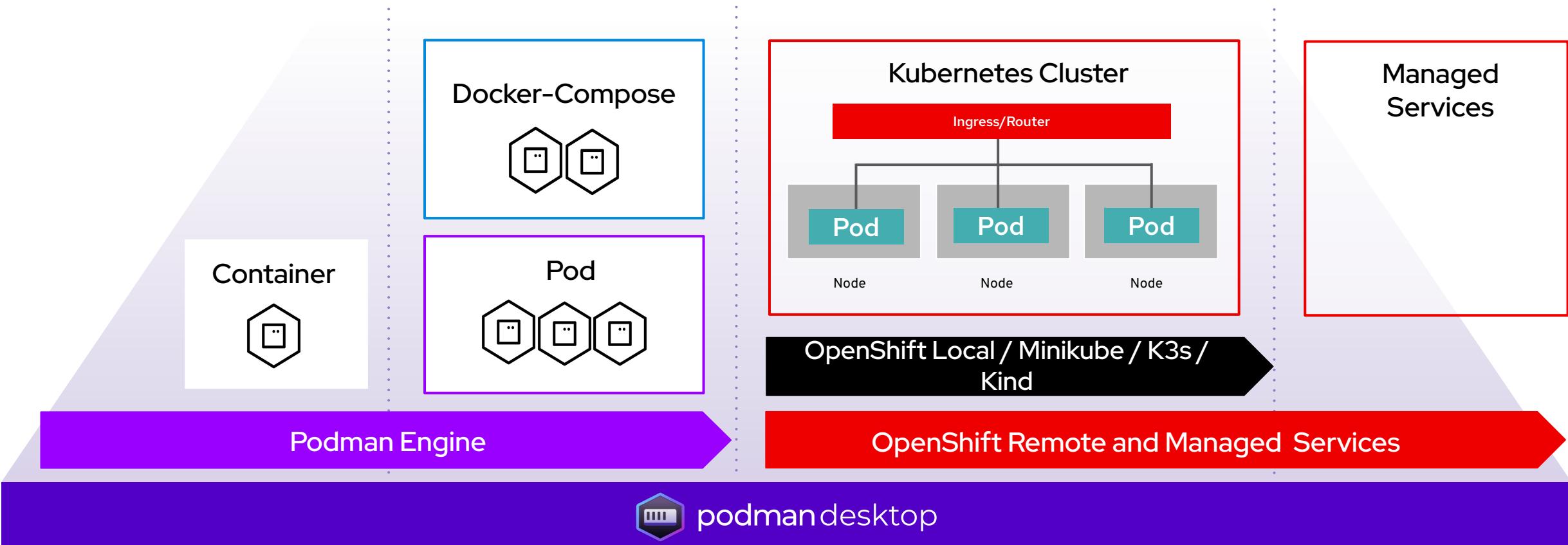


V00000000

Red Hat

Podman Desktop covers the full spectrum

Offering a smooth transition from containers to pods and to Kubernetes

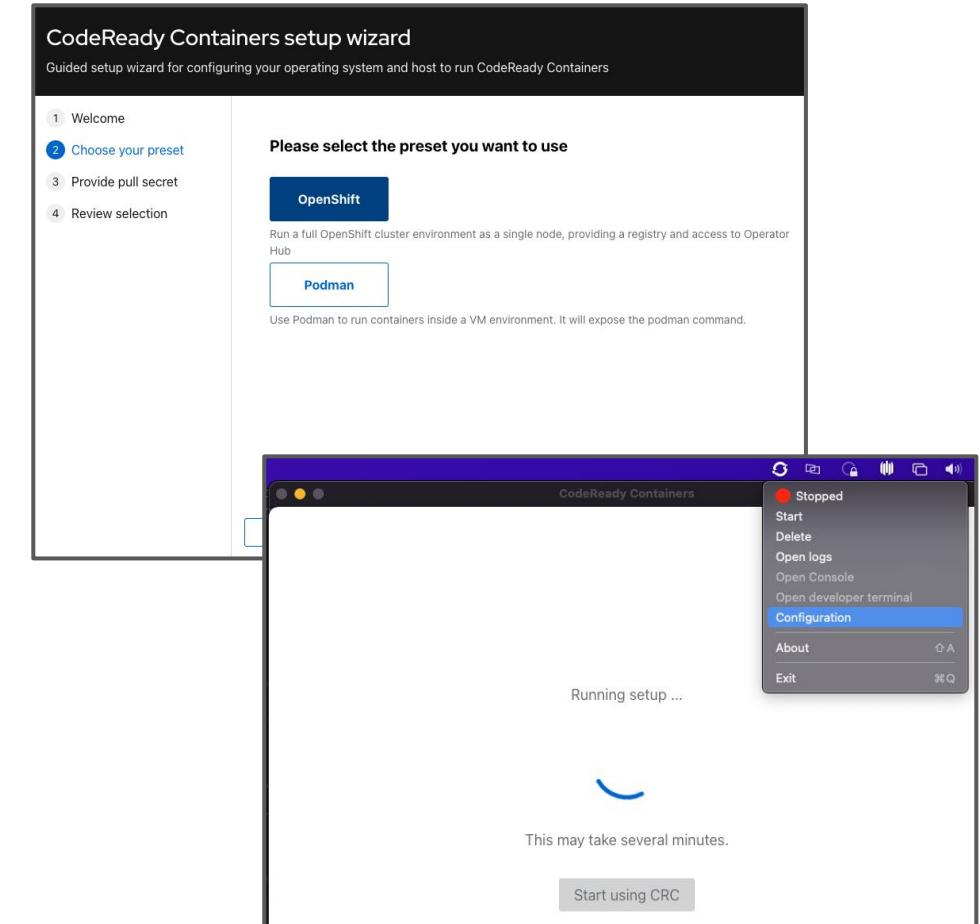


OpenShift Local

Previously known as “CodeReady Containers”

OpenShift Local (formerly CodeReady Containers)

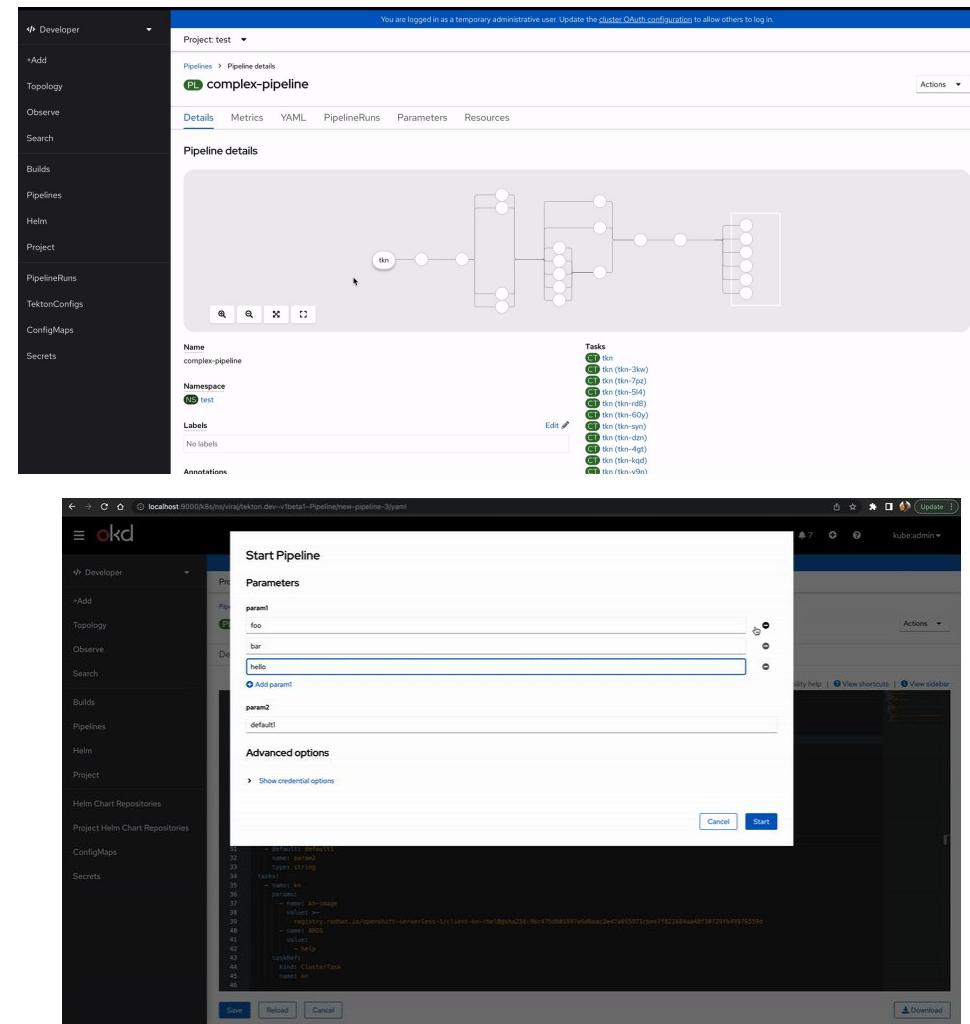
- Renamed OpenShift Local (no longer CodeReady Containers)
- Smaller download - bundle will be downloaded as part of the setup process.
- 4 different presets are provided
 - OpenShift based on OCP with the latest 4.12 bits
 - OpenShift based on OKD with the latest upstream bits
 - podman with 4.2.x
 - Experimental microshift
- Support M1 for all presets.



OpenShift Pipelines

OpenShift Pipelines

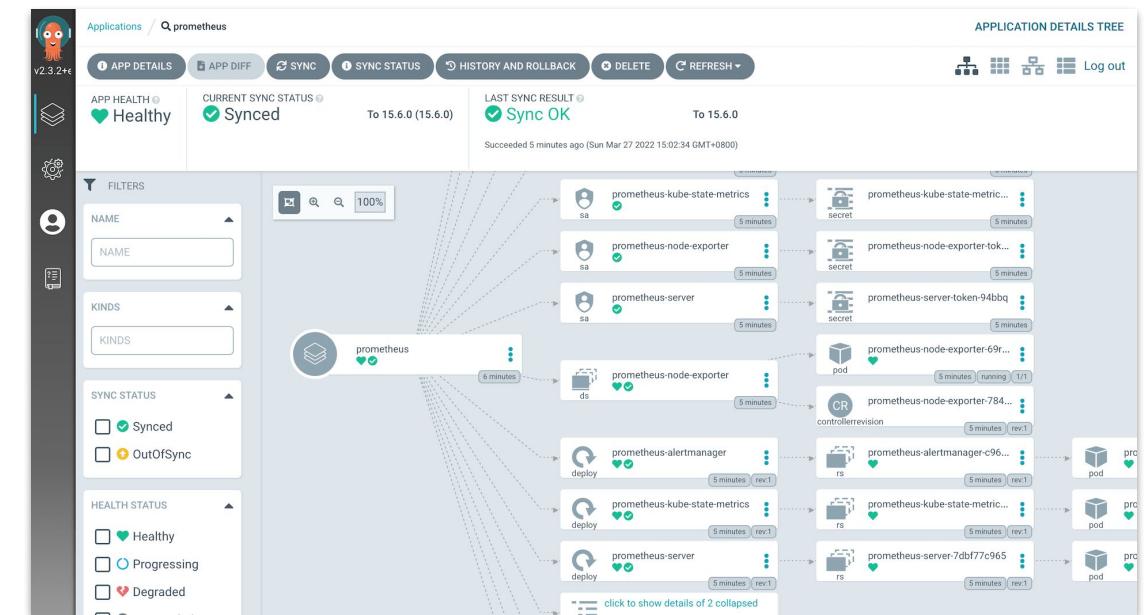
- ▶ OpenShift Pipelines 1.9
- ▶ Reference pipelines/tasks in Git, TektonHub, ArtifactHub, etc
- ▶ Pipelines as code GA
 - ▶ PAC concurrency control
 - ▶ Support for advanced event matching on filepath/PR title
 - ▶ Ability to enable pac for all [new] repos in a GitHub org
 - ▶ Better errors tooling in Pipelines as Code CLI
 - ▶ Rich PipelineRun details in GitHub Checks UI
- ▶ Support for CSI and projected volume for workspace
- ▶ New CLI: Openshift Pipelines CLI (opc) - tech preview
- ▶ Pipelines on Dev Sandbox
- ▶ Dev Console UX improvements : Pipeline topology view, Support of array in Param



OpenShift GitOps

OpenShift GitOps

- ▶ OpenShift GitOps 1.7
- ▶ Includes Argo CD 2.6
- ▶ Patching existing resources with Server Side Apply
- ▶ Applications in non-control plane namespaces (TP)
- ▶ Operator improvements:
 - ▶ Custom node selectors
 - ▶ RBAC match mode 'regex'
 - ▶ Sub-keys for resource customizations
 - ▶ Enable/Disable cluster Argo CD console link



IDE Tooling

OpenShift Toolkit 1.0

IDE Extension to create, debug and deploy apps on OpenShift

Multiple IDE and platform support

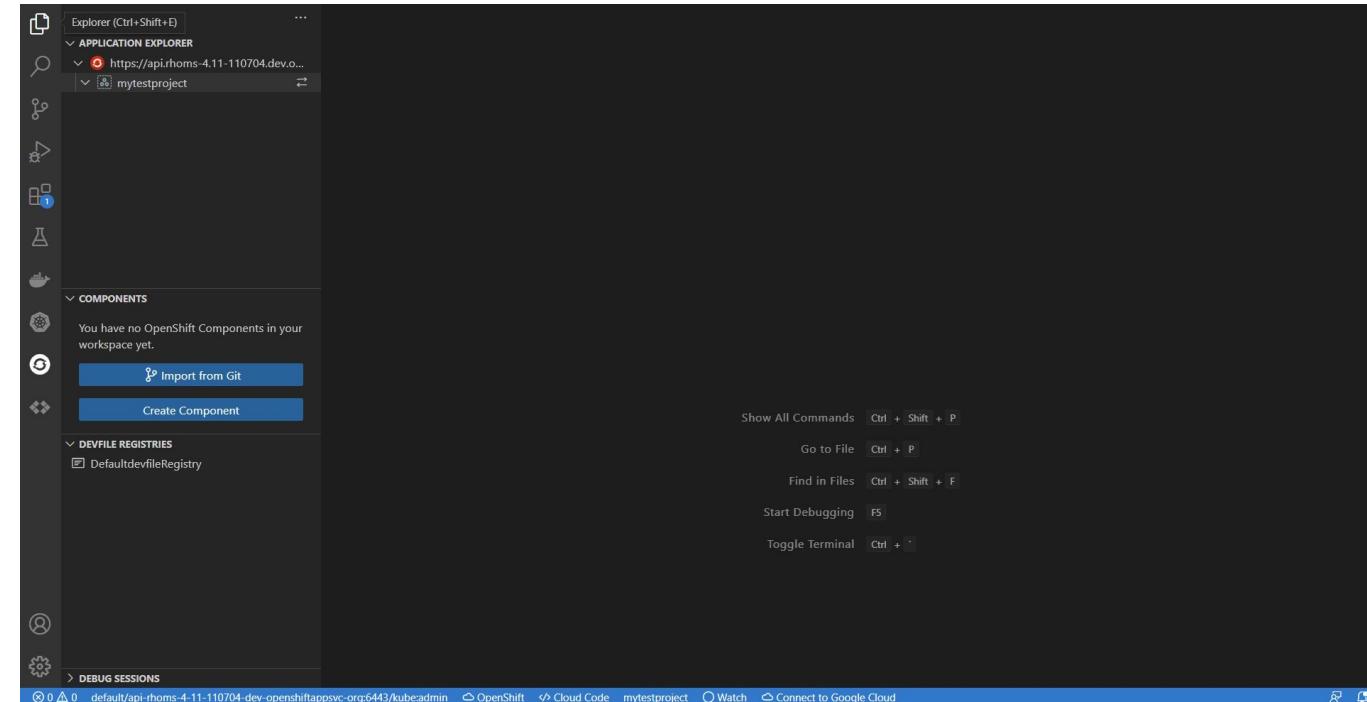
- Available for VSCode and IntelliJ Marketplace
- Available for Win, Linux, macOS (Intel, M1) platforms

Registry & Git Support

- Allow to browser default devfile registry & create components in one-click
- Add own registry for disconnected environment
- Deploy git repositories directly on OpenShift through **Import from Git** guided workflow

Provision clusters from IDE

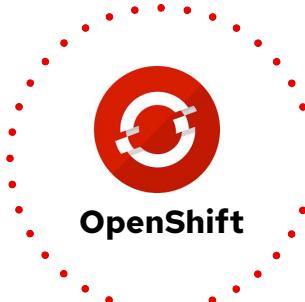
- Connect and deploy to remote OpenShift clusters
- Run local instance of OpenShift 4.11.7 using **OpenShift Local** directly from IDE
- Connect & Provision free **Developer Sandbox** directly from IDE



VSCode: <https://marketplace.visualstudio.com/items?itemName=redhat.vscode-openshift-connector>

IntelliJ: <https://plugins.jetbrains.com/plugin/12030-openshift-toolkit-by-red-hat>

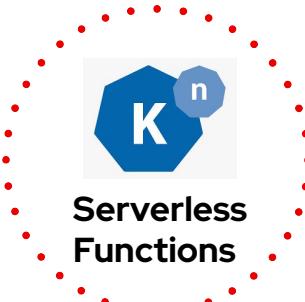
IDE Tooling - Products



OpenShift Toolkit

1.1.0 Release on VSCode & IntelliJ

- Supports odo 3.4.0
- Run apps on podman from IDE
- Import from Git and Deploy on OpenShift feature
- One-click provision of sandbox cluster from IDE
- Easy kubeconfig configuration for cluster



Serverless Functions Extension

Support Serverless Function GA Workflow

- Build/Run/Deploy Functions on OpenShift from IDE
- Node, Quarkus, Go, Python language Support
- Support s2i builder images
- Support on-build cluster
- Support Managed Repositories for Functions



Tekton

Tekton Pipelines Extension

Support OpenShift Pipelines 1.9

- Support Create and download Tekton Bundles
- Add Guided Walkthrough for extension features
- Install Tasks/Pipelines TektonHub directly from IDE
- Support latest tkn cli 0.27.0



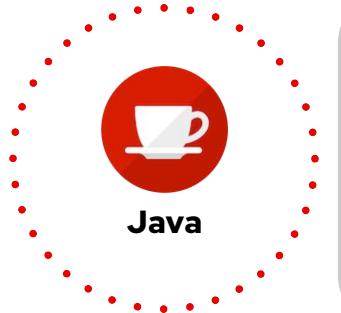
Kubernetes

IntelliJ K8s Extension

- Support init containers for logs and terminals
- Support opening terminals for a pod from IDE
- Edit & apply K8s resource manifests to clusters
- Navigate into K8s workloads, services, pods & nodes
- Allow Push and Pull Feature to keep the editor in sync with the Kubernetes resource



IDE Tooling - Languages



VS Code Java

21 M installs - latest version 1.13.0
 Improve Lombok support
 Support Gradle annotation processing
 Add support for postfix completion
 Pre-release & platform specific publishing for OpenVSX registry.

Marketplace:

<https://marketplace.visualstudio.com/items?itemName=redhat.java>

Project:

<https://github.com/redhat-developer/vscode-java>

Changelog:

<https://github.com/redhat-developer/vscode-java/releases/tag/v1.13.0>



Quarkus Extension

latest version 1.12.0
 Provide HTML support for Quarkus HTML templates
 Add support for pre-releases
 Improve code action performance in vscode microprofile 2.0



Marketplace:

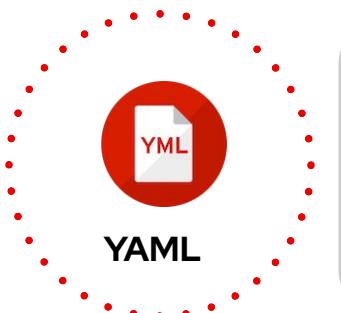
<https://marketplace.visualstudio.com/items?itemName=redhat.vscode-quarkus>

Project:

<https://github.com/redhat-developer/vscode-quarkus>
<https://github.com/redhat-developer/intellij-quarkus>

Changelog:

<https://github.com/redhat-developer/vscode-quarkus/releases/tag/v1.12.0>



VS Code YAML

10.6M installs - latest version 1.9.1
 Enhance auto-completion and validation for yaml files
 Improved yaml-language-server

Marketplace:

<https://marketplace.visualstudio.com/items?itemName=redhat.vscode-yaml>

Project:

<https://github.com/redhat-developer/vscode-yaml>

Changelog:

<https://github.com/redhat-developer/vscode-yaml/releases/tag/v1.11.0>

odo

odo is Generally Available

Key Updates - odo v3 is Generally Available as of v3.0.0 (October 2022)

Version 3.5 is now available

- ▶ Support of versioned Devfile stacks
- ▶ Automatic application port detection
- ▶ Increased support to use odo on podman
- ▶ 🐛 Other bug fixes and minor improvements

Learn more: [Blog Post](#)

Developer Experience In OpenShift Console

Console customization by the admin

- ▶ Form based experience (NOT YAML!) to customize the console

The image shows two screenshots of the Red Hat OpenShift web interface. The left screenshot displays the 'cluster' details page under 'Configuration > Console details'. It includes sections for 'Name' (cluster), 'Labels' (No labels), 'Annotations' (5 annotations), 'Created at' (Jan 9, 2023, 8:42 AM), and 'Owner' (CV version). The 'Cluster Settings' section is highlighted with a purple box. The right screenshot shows the 'Cluster configuration' page, which allows setting cluster-wide configuration for the console experience. The 'General' tab is selected. The 'Perspectives' section shows 'Administrator' and 'Developer' perspectives both set to 'Enabled'. The 'Quick starts' section lists several items, with 'Add health checks to your sample application' and 'Add Helm Chart Repositories to extend the Developer' being the most prominent. A purple arrow points from the 'Actions' dropdown on the cluster details page to the 'General' tab on the configuration page.

Console customization by the admin

- ▶ Configure the visibility of Perspectives

Cluster configuration

Set cluster-wide configuration for the console experience. Your changes will be autosaved and will affect after a refresh.

Perspectives

Administrator	Enabled
Developer	Enabled

Quick starts

Enabled	Disabled
Q	Q
0 of 13 items selected	0 of 0 items selected
CQS Add health checks to your sample application add-healthchecks CQS Add Helm Chart Repositories to extend the Developer install-helmchartrepo-ns CQS Get started with a sample application sample-application CQS Get started with Node node-with-s2i CQS Get started with on-premise host inventory host-inventory CQS Get started with Quarkus using a Helm Chart quarkus-with-helm	

Cluster configuration

Set cluster-wide configuration for the console experience. Your changes will be autosaved and will affect after a refresh.

Perspectives

Administrator	Enabled
Developer	Disabled

Quick starts

Enabled	Disabled
Q	Q
0 of 13 items selected	0 of 0 items selected
CQS Add health checks add-healthchecks CQS Add Helm Chart Repositories to extend the Developer install-helmchartrepo-ns CQS Get started with a sample application sample-application CQS Get started with Node node-with-s2i CQS Get started with on-premise host inventory host-inventory CQS Get started with Quarkus using a Helm Chart quarkus-with-helm	Enabled Perspectives are enabled by default. Only visible for privileged users Privileged users can list all namespaces. Only visible for unprivileged users Unprivileged users cannot list all namespaces. Disabled Disable this perspectives for all users.

Console customization by the admin

- ▶ Configure the visibility of Quick Starts

Cluster configuration
Set cluster-wide configuration for the console experience. Your changes will be autosaved and will affect after a refresh.

General **Perspectives**

Projects Administrator: Enabled

Developer Developer: Enabled

Quick starts

Enabled

0 of 13 items selected

 Add health checks to your sample application
`add-healthchecks`

 Add Helm Chart Repositories to extend the Developer
`install-helmchartrepo-ns`

 Get started with a sample application
`sample-application`

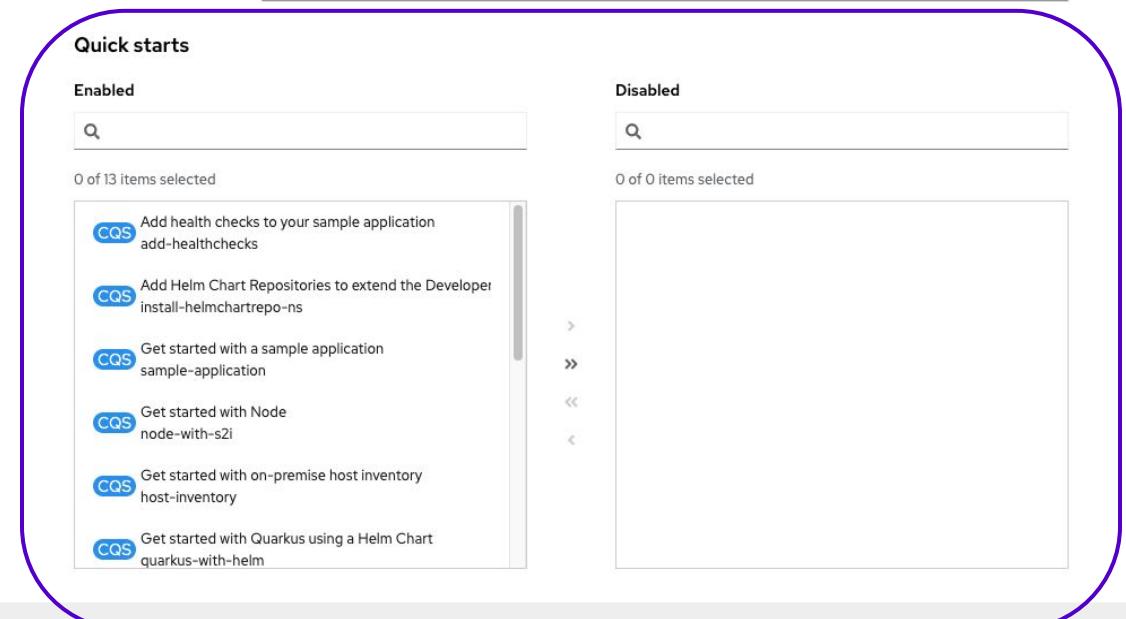
 Get started with Node
`node-with-s2i`

 Get started with on-premise host inventory
`host-inventory`

 Get started with Quarkus using a Helm Chart
`quarkus-with-helm`

Disabled

0 of 0 items selected



Console customization by the admin

- ▶ Configure the Cluster Roles which are available in **Share Project**

The screenshot shows the Red Hat OpenShift console interface. The left sidebar is titled "Administrator" and includes links for Home, Operators, Workloads, Networking, Storage, Builds, Observe, Compute, User Management, and Administration. The main content area is titled "Cluster configuration" and contains a message: "You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in." Below this, there are tabs for General and Project access. Under Project access, there are sections for Available Cluster Roles and Chosen Cluster Roles. The Available Cluster Roles section lists numerous roles, including "admin", "edit", and "view". The Chosen Cluster Roles section currently has three items selected: "admin", "edit", and "view".

Console customization by the admin

- ▶ Configure the visibility of areas of the Add page

The screenshot shows the Red Hat OpenShift Cluster configuration interface. On the left is a sidebar with navigation items like Home, Operators, Workloads, Networking, Storage, Builds, Observe, Compute, User Management, and Administration. The 'Developer' item under Projects is selected and highlighted with a blue border. The main content area is titled 'Cluster configuration' and contains a message about temporary administrative user login. Below this is the 'Add page' configuration section, which is circled in purple. It has two main sections: 'Enabled actions' and 'Disabled actions'. Under 'Enabled actions', there is a search bar and a list of items: Container images, Database, Helm Chart repositories, Import from Git, Import YAML, Operator Backed, Samples, Sharing, and Upload JAR file. Under 'Disabled actions', there is a search bar and a message stating '0 of 0 items selected'. At the bottom are 'Developer catalog' sections for 'Enabled types' and 'Disabled types', each with a search bar and a list of items. The 'Enabled types' section includes Builder Images, and the 'Disabled types' section includes Helm Charts.

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Cluster configuration

Set cluster-wide configuration for the console experience. Your changes will be autosaved and will affect after a refresh.

General

Projects

Developer

Add page

Enabled actions

Disabled actions

Developer catalog

Enabled types

Disabled types

RFE

PM Serena Chechile Nichols

CONFIDENTIAL designator

Console customization by the admin

- ▶ Configure the visibility of Developer Catalog

The screenshot shows the Red Hat OpenShift console interface. On the left is a dark sidebar with a navigation menu:

- Administrator
- Home
- Operators
- Workloads
- Networking
- Storage
- Builds
- Observe
- Compute
- User Management
- Administration

The main content area is titled "Cluster configuration". It displays two sections: "Add page" and "Developer catalog".

Add page section:

- General**: Projects dropdown with "Developer" selected.
- Enabled actions**: A search bar and a list of items:
 - Container images
 - Database
 - Helm Chart repositories
 - Import from Git
 - Import YAML
 - Operator Backed
 - Samples
 - Sharing
 - Upload JAR file
- Disabled actions**: A search bar and a list of items:
 - 0 of 0 items selected

Developer catalog section (outlined in purple):

- Enabled types**: A search bar and a list of items:
 - 0 of 5 items selected
 - Builder Images
- Disabled types**: A search bar and a list of items:
 - 0 of 1 items selected
 - Helm Charts

Improved awareness of project limits and quotas issues

- ▶ Warning labels on the **Add & Topology** pages inform users when issues with project limits & quotas are detected

The image shows two screenshots of the OKD web interface. The top screenshot displays the 'Topology' page, which includes a navigation bar with 'Developer' and 'Topology' tabs, and a main area showing a cluster diagram with nodes and pods. A purple arrow points from the 'Topology' page to a callout box on the right side of the screen. This callout box contains the text '2 resources reached quota' and a yellow warning icon. The bottom screenshot shows the 'ResourceQuotas' page, also with a 'Developer' navigation bar. It lists two resource quotas: 'example' and 'example1', both of which have a status indicator showing '1 resource reached quota'. Another purple arrow points from the 'ResourceQuotas' page to the same '2 resources reached quota' callout box on the right.

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: prabhu Application: All applications

+Add Topology

View shortcuts

2 resources reached quota

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: prabhu

ResourceQuotas

Name Label selector Project annotations Status Created

Name	Label selector	Project annotations	Status	Created
RQ example	No labels	No selector	⚠ 1 resource reached quota	Aug 29, 2022, 8:25 PM
RQ example1	No labels	No selector	⚠ 1 resource reached quota	Aug 29, 2022, 8:26 PM

Create ResourceQuota

nodejs-ex-app

node

nodejs-ex

Awareness & guidance of resource related quotas & limits

- ▶ Additional visual indications are shown on resources in **Topology**

The screenshot shows the OKD web interface with the 'Topology' page selected. The top navigation bar includes a bell icon (16 notifications), a plus sign, a question mark, and a user dropdown for 'kube:admin'. The main header displays 'Project: jai-test' and 'Application: All applications'. Below the header are 'Display options', 'Filter by resource', and search fields for 'Name' and 'Find by name...'. A prominent yellow warning bubble in the top right corner states '1 resource reached quota'. The central area is a large, mostly empty grid with a few small colored dots (yellow and red) scattered across it.

Improved Helm user experience

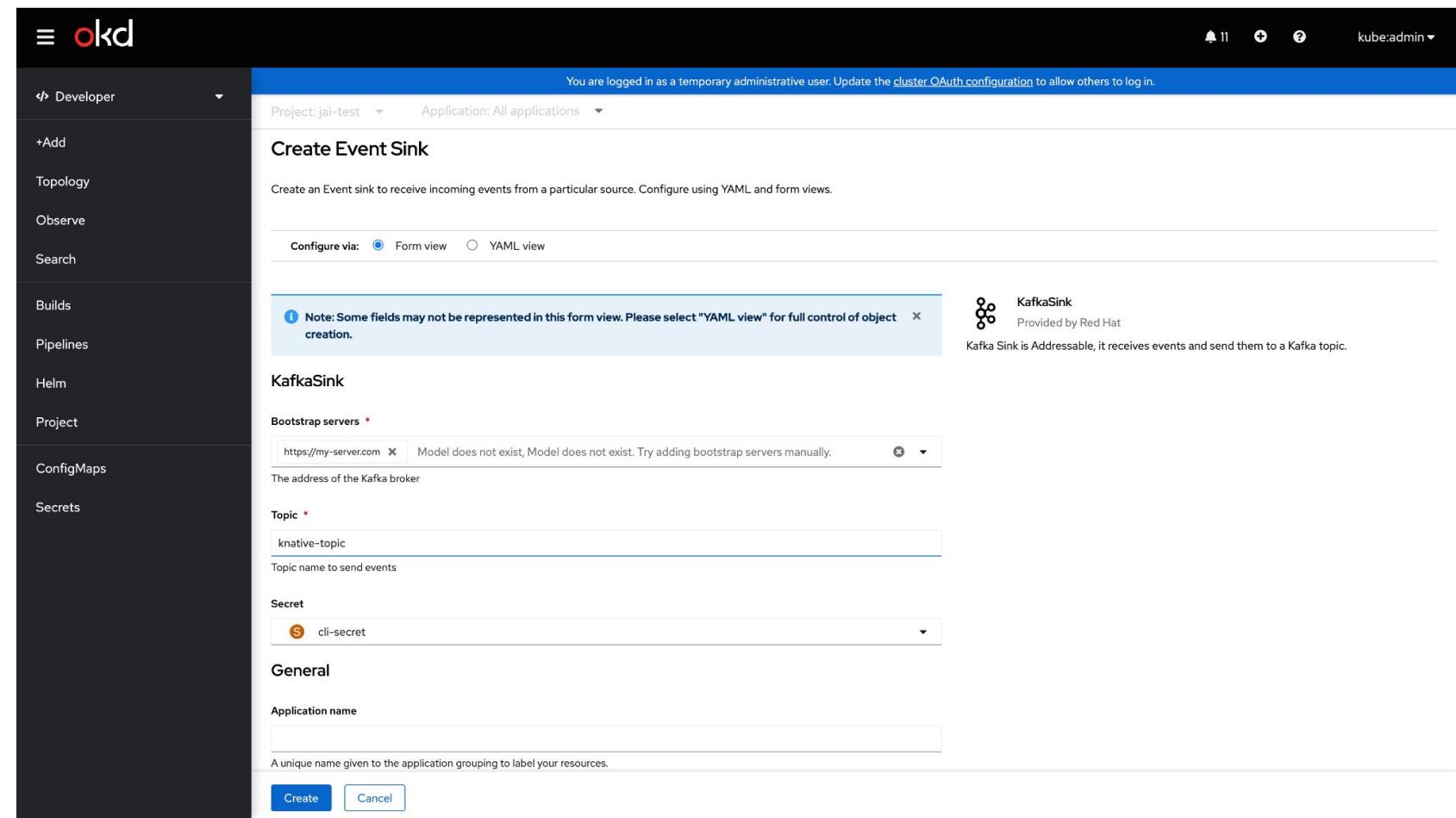


- ▶ Helm page contains 2 tabs
 - ▶ Helm Releases
 - ▶ Repositories
- ▶ Form based experience for Helm Chart Repositories

A screenshot of the OKD developer interface. The top navigation bar shows the project "withphcr". The left sidebar has a "Developer" tab selected, with options like "+Add", "Topology", "Search", "Builds", "Helm", "Project", "Helm Chart Repositories", "Project Helm Chart Repositories", "PipelineResources", "ConfigMaps", and "Secrets". The main content area is titled "Add" and shows "Getting started resources" with links to "Create applications using samples" (Basic Quarkus, Basic Spring Boot) and "View all samples". It also features sections for "Build with guided documentation", "Explore new developer features", and "What's new in OpenShift". Below this, there are four cards: "Developer Catalog" (All services, Database, Operator Backed, Helm Chart), "Git Repository" (Import from Git), "Container images" (From Local Machine, Import YAML, Upload JAR file), and "Sharing" (Samples).

OpenShift Serverless updates

- ▶ Default resource type is Serverless
- ▶ Form based Kafka Sink creation
- ▶ Kafka Sinks can be added as a subscriber, trigger & Event Source sink target



The screenshot shows the OpenShift Developer interface with a dark theme. The left sidebar has a 'Developer' tab selected, with options like '+Add', 'Topology', 'Observe', 'Search', 'Builds', 'Pipelines', 'Helm', 'Project', 'ConfigMaps', and 'Secrets'. The main content area is titled 'Create Event Sink' and contains instructions: 'Create an Event sink to receive incoming events from a particular source. Configure using YAML and form views.' Below this, there's a note: 'Configure via: Form view YAML view'. A warning message says: 'Note: Some fields may not be represented in this form view. Please select "YAML view" for full control of object creation.' The configuration section for a 'KafkaSink' includes fields for 'Bootstrap servers' (set to 'https://my-server.com'), 'Topic' (set to 'knative-topic'), and 'Secret' (set to 'cli-secret'). There's also a 'General' section with an 'Application name' field. At the bottom are 'Create' and 'Cancel' buttons.

OpenShift Pipelines updates

- ▶ **Parameters** tab available on PipelineRun details page

Project: viraj ▾

PipelineRuns > PipelineRun details

PLR nodejs-ex-git-ejoye ! Failed

Details	YAML	TaskRuns	Parameters	Logs	Events
Name	Description	Value			
APP_NAME	Description	nodejs-ex-git			
GIT_REPO	Description	https://github.com/sclorg/nod...			
GIT_REVISION	Description	Value			
IMAGE_NAME	Description	image-registry.openshift-imag...			
PATH_CONTEXT	Description	.			
VERSION	Description	16-ubi8			

OpenShift Pipelines updates

- ▶ Users now have the ability to **Stop** or **Cancel** a running PipelineRun.
- ▶ **Cancel** interrupts any executing non finally tasks, then executes the finally tasks.
- ▶ **Stop** lets the running tasks complete, then executes the finally tasks.

The screenshot shows the 'PipelineRuns' section of the OpenShift web interface for the 'viraj' project. A PipelineRun named 'ruby-ex-git-915kdg' is currently 'Running'. The 'Actions' dropdown menu is open, displaying options: Rerun, Stop, Cancel, and Delete PipelineRun. The PipelineRun details page also displays the pipeline definition (fetch-repo, build, deploy), the name 'ruby-ex-qit-915kdg', and the status 'Running'.

Project: viraj ▾

PipelineRuns > PipelineRun details

PLR ruby-ex-git-915kdg Running

Actions ▾

Rerun

Stop

Cancel

Delete PipelineRun

Details YAML TaskRuns Parameters Logs Events

PipelineRun details

```
graph LR; A[fetch-repo...] --> B[build]; B --> C[deploy]
```

Name
ruby-ex-qit-915kdg

Status
Running

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.



[linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)



[youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)



[facebook.com/redhatinc](https://www.facebook.com/redhatinc)



twitter.com/RedHat