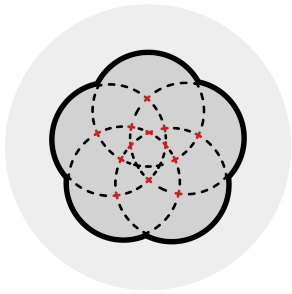**Red Hat | intel.**

OpenTour

Connecting people and solutions to accelerate your business

How do you drive innovation to meet business expectations while keeping the lights on?
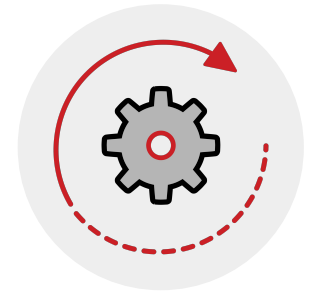
Optimize the IT you have

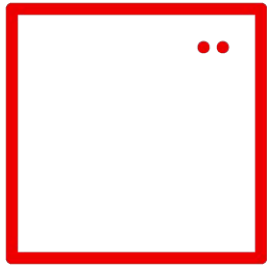**Integrate apps, data, & processes**

Add & manage cloud infrastructure
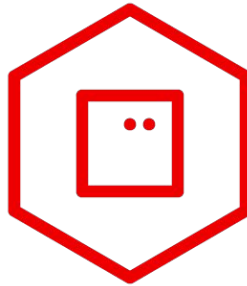
Build more modern applications

Automate & manage IT

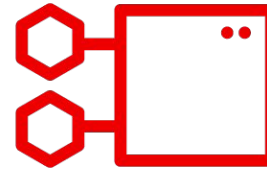# Leveraging the cloud becomes a key strategy for success

What do You Need to do?

Create cloud-native applications

Develop your app to run in a container cloud

Interact with other applications including application services from providers

Secure, run, and manage applications at scale in the cloud

What Does a Modern **Application Development** and Delivery Platform Include?

- ▸ Application and API connectivity

- ▸ Real-time messaging and data streaming

- ▸ In-memory distributed datastore

- ▸ Data transformation

- ▸ Single sign on*

- ▸ Migration toolkit for applications

- ▸ Service composition, transformation, and orchestration

- ▸ Java application frameworks*

Red Hat Cloud-Native Application Platform

Our vision is to simplify the creation of cloud-native services and serverless functions with a rich set of components and tools to match the **workloads** of modern cloud native apps.

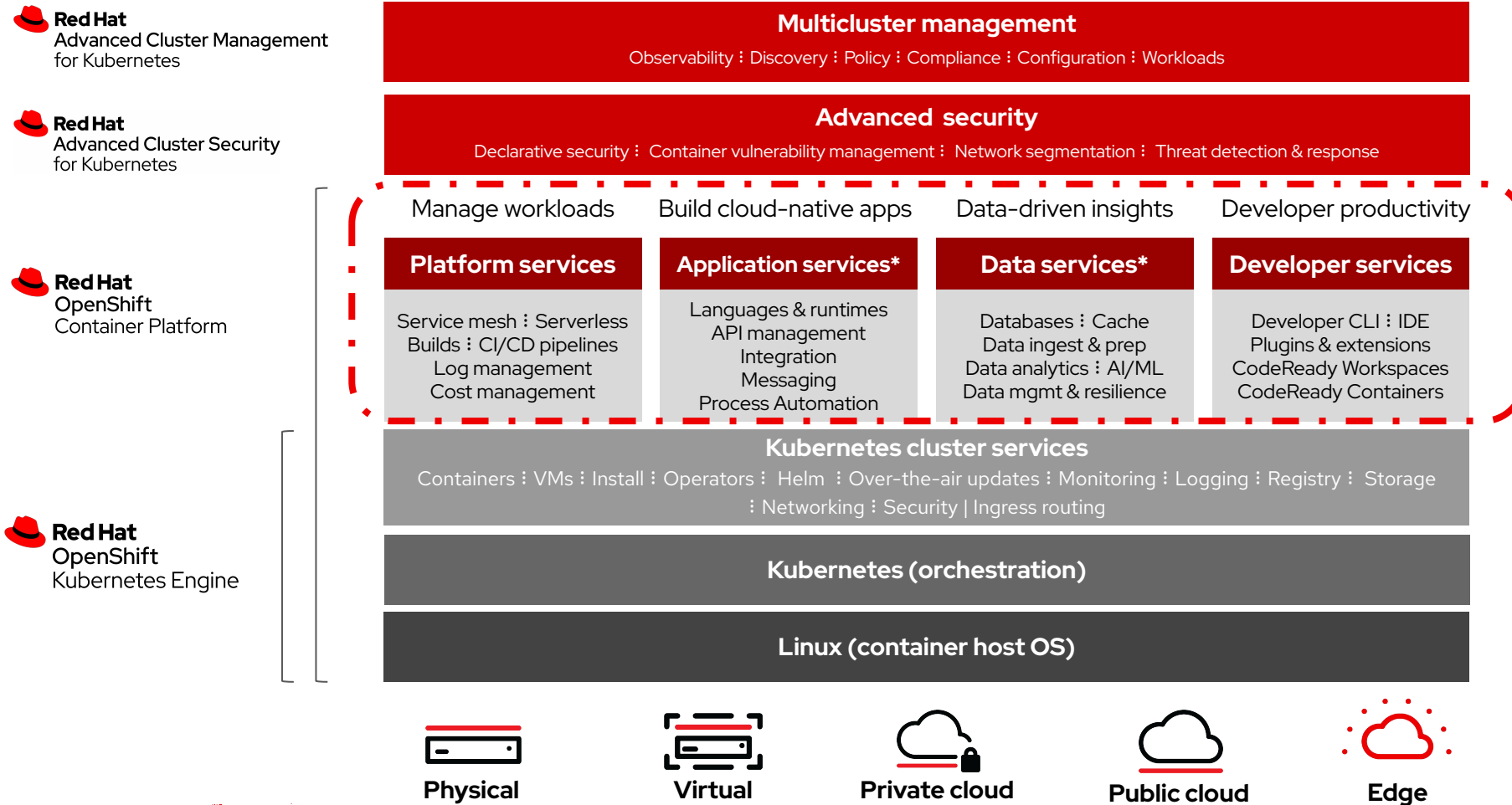|		
Automate Kubernetes application operations with DevOps in mind	Runtimes, frameworks and services to build applications natively on Kubernetes	Tools and standard processes to increase developer productivity on Kubernetes

Red Hat OpenShift

Red Hat Application Services

Red Hat CodeReady

Open Tour

Red Hat | intel

Application Development and Operations

Red Hat
Advanced Cluster Management
for Kubernetes

Red Hat
Advanced Cluster Security
for Kubernetes

Red Hat
OpenShift
Container Platform

Red Hat
OpenShift
Kubernetes Engine

Multicluster management

Observability ⋮ Discovery ⋮ Policy ⋮ Compliance ⋮ Configuration ⋮ Workloads

Advanced security

Declarative security ⋮ Container vulnerability management ⋮ Network segmentation ⋮ Threat detection & response

Manage workloads	Build cloud-native apps	Data-driven insights	Developer productivity
Platform services	**Application services***	**Data services***	**Developer services**
Service mesh ⋮ Serverless Builds ⋮ CI/CD pipelines Log management Cost management	Languages & runtimes API management Integration Messaging Process Automation	Databases ⋮ Cache Data ingest & prep Data analytics ⋮ AI/ML Data mgmt & resilience	Developer CLI ⋮ IDE Plugins & extensions CodeReady Workspaces CodeReady Containers

Kubernetes cluster services

Containers ⋮ VMs ⋮ Install ⋮ Operators ⋮ Helm ⋮ Over-the-air updates ⋮ Monitoring ⋮ Logging ⋮ Registry ⋮ Storage
⋮ Networking ⋮ Security | Ingress routing

Kubernetes (orchestration)

Linux (container host OS)

Physical   **Virtual**   **Private cloud**   **Public cloud**   **Edge**

Red Hat | intel

Red Hat Middleware Solution Overview

Data Integration
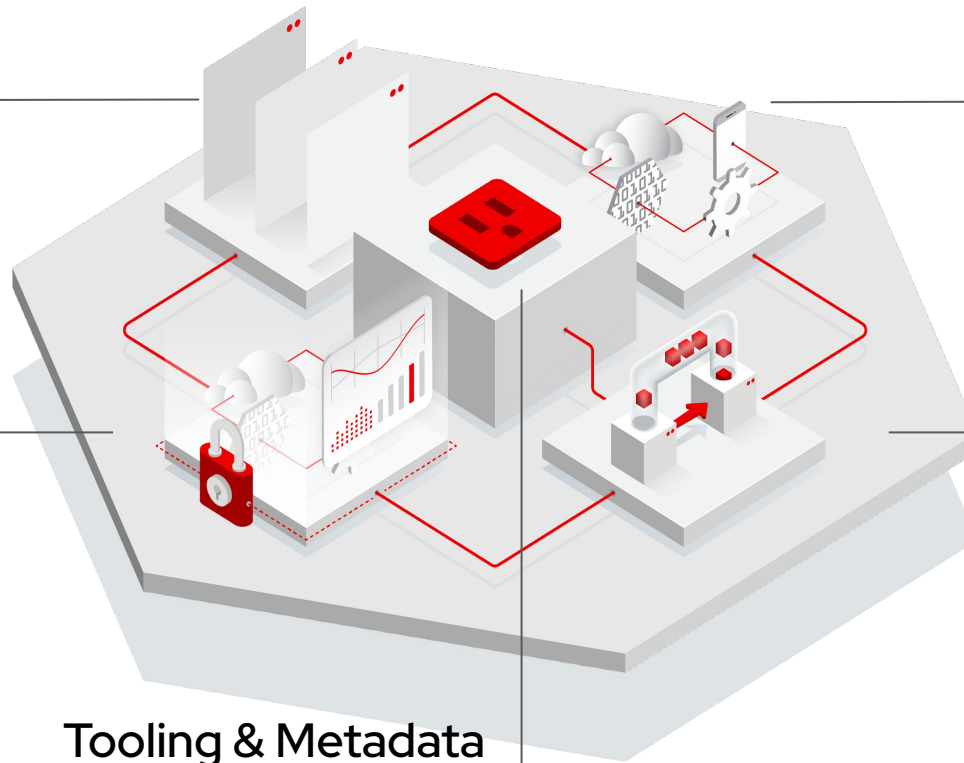
- Change Data Capture with Debezium

API Management

- API Manager
- API Gateway
- Istio Service Mesh Adapter

Tooling & Metadata

- Service Registry
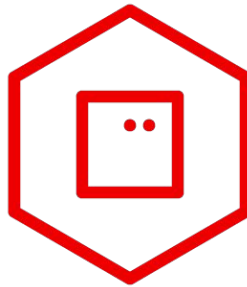- API Designer
- Integration Operator

Enterprise Integration

- Comprehensive connectors
- Microservices orchestration
- Data Transformation
- Low-code iPaaS
- Kubernetes connectivity with Camel K

Events & Messaging

- JMS Message Broker
- Wide Area Routing
- Data Streaming with Apache Kafka

The Red Hat Application Development & Delivery Platform Hits All the Checkboxes

✓

✓

✓

✓

Create cloud-native applications
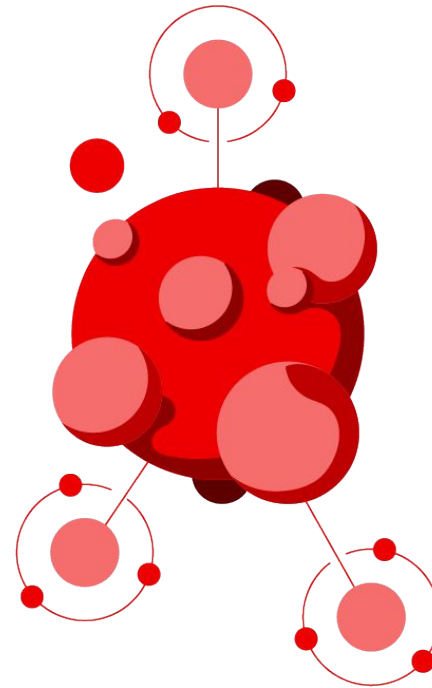
Prepare your app to run in a container cloud

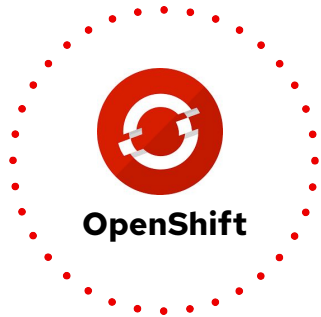**Interact with other applications including application services from providers**

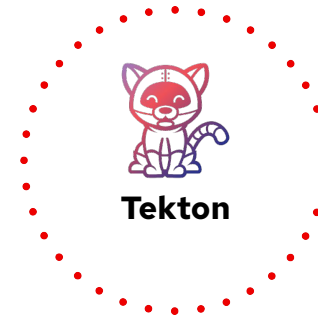**Securing run and manage applications at scale in the cloud**

IDE Tooling - Products

IDE Tooling - Products

OpenShift

OpenShift Connector

Supports OpenShift Local 2.5.1
Supports odo 2.5.1
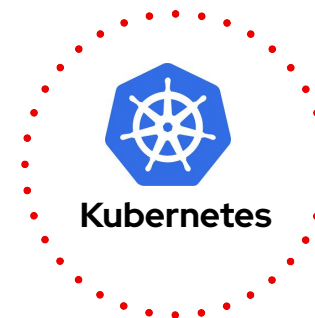Components using Default Devfile Registry
Improved Get Started Workflow

Tekton

Tekton Pipelines Extension

Support latest Tekton Pipelines 0.35.0
Support latest Tekton Triggers 0.20.0
Support latest tkn cli 0.24.0

Serverless Functions

Knative/Functions Extension

Support Serverless Function Workflow
Support Node, Quarkus, Go, Python language
Support s2i builder images
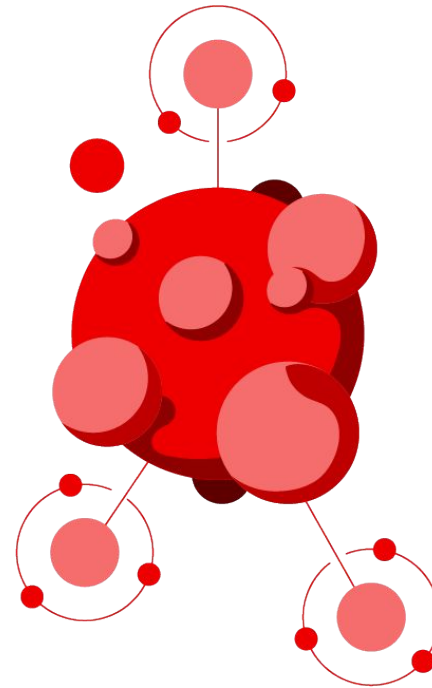Support on-build cluster (in progress)

Kubernetes

IntelliJ K8s Extension

Continue Kubernetes support on IntelliJ
Cluster resource error management
Diff viewer for local and remote K8s resource

OpenShift Dev Spaces

Previously known as "CodeReady Workspaces"

Red Hat OpenShift Dev Spaces (Formerly known as CodeReady Workspaces)
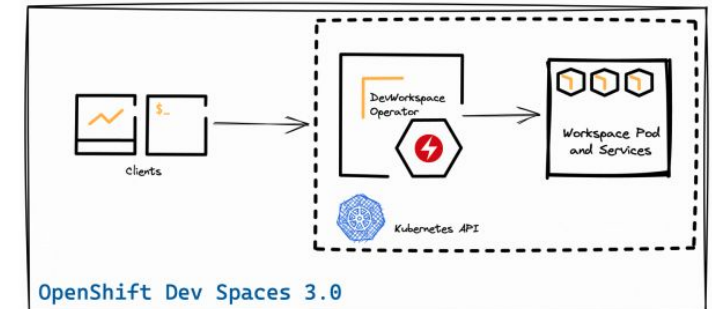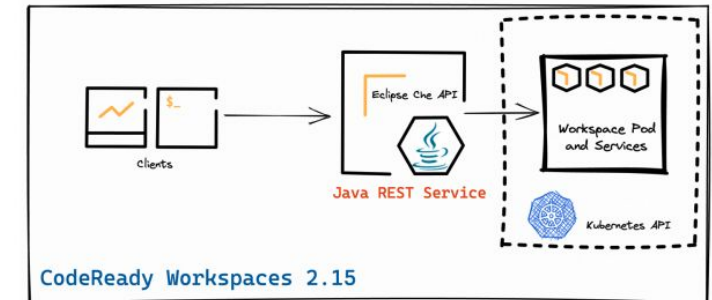
What's New

CodeReady Workspaces used to be a Java REST web service named che-server, which provisioned pods and other objects to run development environments on OpenShift, With OpenShift Dev Spaces 3.0, a new OpenShift Operator replaces the che-server: the **DevWorkspace Operator** bringing the following benefits to admins and Developers
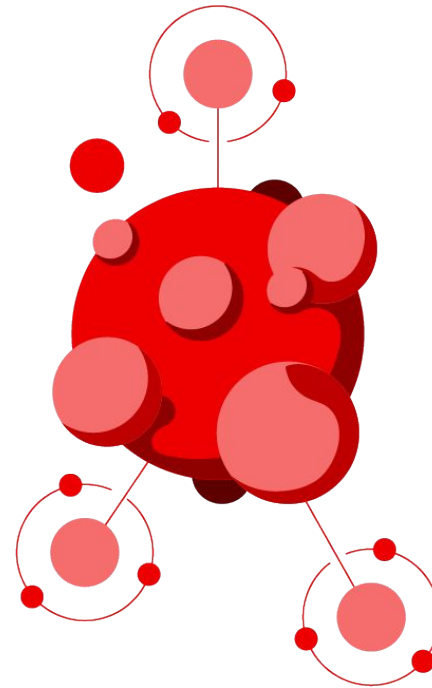
Benefits of the release

- Scalable and high available
- Simplified Authentication – Uses OpenShift OAuth for Authentication
- Support for both Devfile V1 and V2
- Tech preview support for Visual Studio Code as an IDE (in addition to Eclipse Theia and JetBrains IDEs)
- Workspaces load faster, with fewer containers per workspace.

Resources

- Detailed Blog on Whats in V3.0
- Revamped Documentation
- How to Install – Red Hat OpenShift Dev Spaces is available with OpenShift 4.10 onwards
- How to Upgrade

Service Binding Operator

Service Binding Operator

Today in Kubernetes, the exposure of secrets for connecting application workloads to external services such as REST APIs, databases, event buses, and many more is **manual**

Red Hat

Service Binding Operator

https://servicebinding.io/

Kubernetes-wide specification for communicating service secrets to workloads in an automated way.

It aims to create a widely applicable mechanism but *without* excluding other strategies for systems that it does not fit easily. The benefit of Kubernetes-wide specification is that all of the actors in an ecosystem can work towards a clearly defined abstraction at the edge of their expertise and depend on other parties to complete the chain.
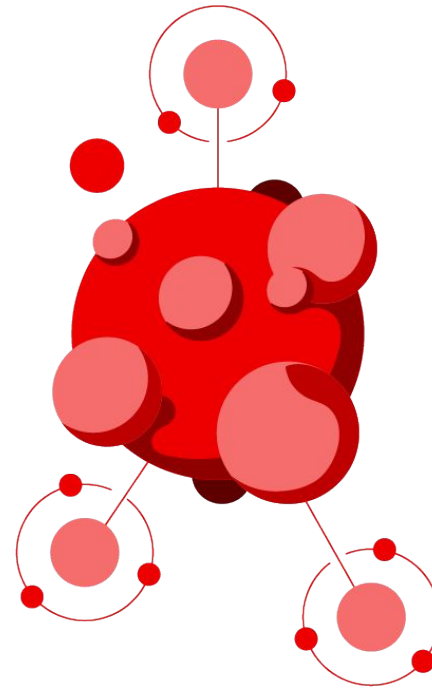
Red Hat

Service Binding Operator

Key Features & Updates in OpenShift 4.11

- ▶ Blog posts and demos leveraging Service Binding Operator along with ACK Controller from AWS.

- ▶ Support of the latest version of Service Binding Specification

- ▶ Improvements in OpenShift Developer Console and `odo`, on leveraging Service Binding

Red Hat

Devfile

Kube-native API for cloud development workspaces specification

Devfile

```yaml
schemaVersion: 2.1.0
metadata:
 name: go
 language: go
components:
 - container:
   endpoints:
     - name: http
       targetPort: 8080
   image: quay.io/devfile/golang:latest
   memoryLimit: 1024Mi
   mountSources: true
  name: runtime
```
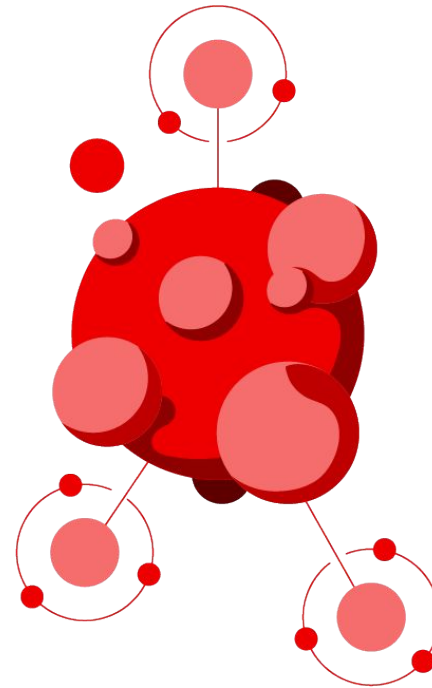
Devfile

Key Updates in OpenShift 4.11

▸ Devfile now support dockerfile for your innerloop components

▸ Documentation have been improved to help people when they need to author Devfile

▸ Alizer: Automatic detection of appropriate devfile for a repository

   ▸ Getting integrated in OpenShift Connector for VSCode and ODO

▸ Devfile is now a CNCF sandbox project!

   ▸ Getting External contributions from AWS and JetBrains

https://www.cncf.io/projects/devfile/

odo

CLI-Tool for Cloud Native Application Development

odo v3 – RC 1

Try odo v3!

Use the Quickstart Guide on odo.dev to use odo to create a
Hello World Node, .NET, Java or Go application
- Use odo init to create your application
- Use odo dev to develop your application
- Deploy your application to the world

Red Hat

odo v3 - odo dev

Run your application in development mode using
`odo dev`.

```
$ odo dev

  __
 /  \__       Developing using the my-nodejs-app Devfile
 \__/  \      Namespace: default
 /  \__/      odo version: v3.0.0-alpha2
 \__/

↪ Deploying to the cluster in developer mode
 ✓  Waiting for Kubernetes resources [3s]
 ✓  Syncing files into the container [330ms]
 ✓  Building your application in container on cluster [4s]
 ✓  Executing the application [1s]

Your application is now running on the cluster
 - Forwarding from 127.0.0.1:40001 -> 3000

Watching for changes in the current directory /Users/user/express
Press Ctrl+c to exit `odo dev` and delete resources from the cluster
```
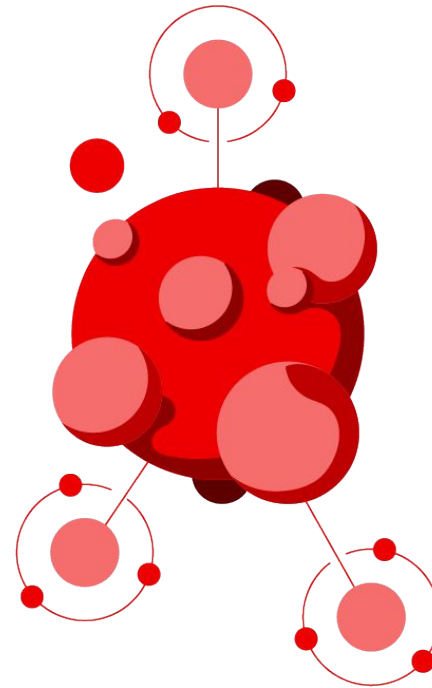
odo v3 – scheduled to be feature complete in the October 2022 timeframe.

Red Hat

Now it's time for a cool demo...

Join Red Hat Developer.
Build here. Go anywhere.

youtube.com/RedHatDevelopers

linkedin.com/showcase/red-hat-developer

facebook.com/RedHatDeveloperProgram

twitter.com/rhdevelopers

```
[your@sandbox ~]$ lscpu
RAM: 7GB
Storage: 15GB
Time limit: 30 days
Awesome: YES
```

developers.redhat.com/developer-sandbox

Learn containers, Kubernetes, and OpenShift in your browser.

Start exploring in the OpenShift Sandbox.

Try Red Hat's products and technologies without setup or configuration.

Red Hat

Red Hat Developer