

Cloud Native Development

- CodeReady Workspaces

Developer Advocates

Teck talk :

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Agenda

- Traditional Development Approach
- Challenges
- Kubernetes/Containerized Develop Approach
- CodeReady Workspaces

TRADITIONAL IDE + LAPTOP APPROACH

Managed
in Git

- Project sources
- Dependencies
- Developer Tools: language servers, debuggers, testing tools, security tools, etc...

Managed
in the IDE

- Commands
- Build and packaging tools
- Terminal

Managed
on the
Laptop

- Operating system
- Web server / application server
- Database
- (All other runtime components)

This set is needed for each service that is used. Microservices mean many more of these sets to manage.

Everything is versioned and needs updating.

If anything is different across the team inconsistent behaviors can result.

TRADITIONAL IDE + LAPTOP APPROACH

Shareable
with all

- Project sources
- Dependencies
- Developer Tools: language servers, debuggers, testing tools, security tools, etc...

Shareable
with some

- Commands
- Build and packaging tools
- Terminal

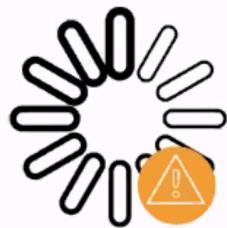
Hard to
share
consistently

- Operating system
- Web server / application server
- Database
- (All other runtime components)



A laptop makes it hard to share and secure
everything a developer needs.

...AND HAS BROUGHT NEW CHALLENGES



Config and Setup

24%

Of time spent building and maintaining developer environments.



Dev Tool Integration

41%

Of enterprises see non-integrated tools as an inhibitor to container adoption.

“>80% of my development teams aren’t
Kubernetes and container experts”

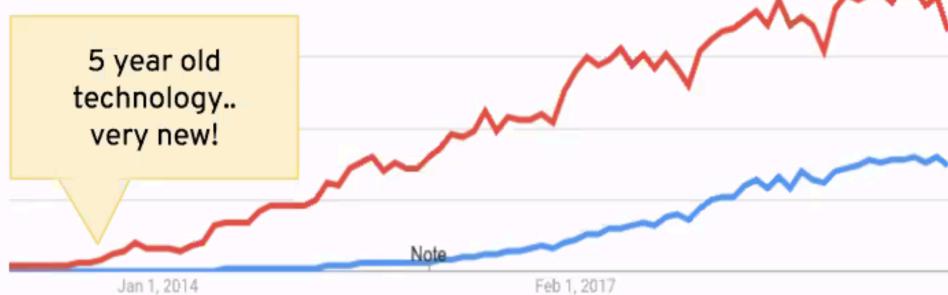


Challenge

- Development happens on laptops: not in Kubernetes, sometimes in containers
- IT is moving to Kubernetes in production
- Devs have programming knowledge, but little experience with containers and Kubernetes
- Training every developer to become a container and Kube expert isn’t viable: too hard, too long

Need a way to make devs productive on Kube now,
but enable their learning journey going forward

Google Search Trend: Kubernetes and Linux Containers



THE KEY QUESTION



What's needed to enable a developer to contribute to a project quickly, easily and safely without relying on containers on the laptop?



Based on Eclipse Che!

CODEREADY WORKSPACES

A collaborative container-native development solution that
runs in OpenShift on-premises or in the cloud.

Container Workspaces



Workspace replicas to end
“works on my machine” and
enable team collaboration.

DevOps Integrations



Reference developer
workspaces from any issue,
failed build, or git notification.

Protect Source Code



Full access to source code
without any of it landing on
hard-to-secure laptops.

Built In Security: OpenShift running on Red Hat Linux, with development containers using secure Red Hat Linux.

Use It To: Simplify container-based development and increase efficiency.

Private Developer Workspace Pods, Centrally Hosted



Browser
IDE



Project Files

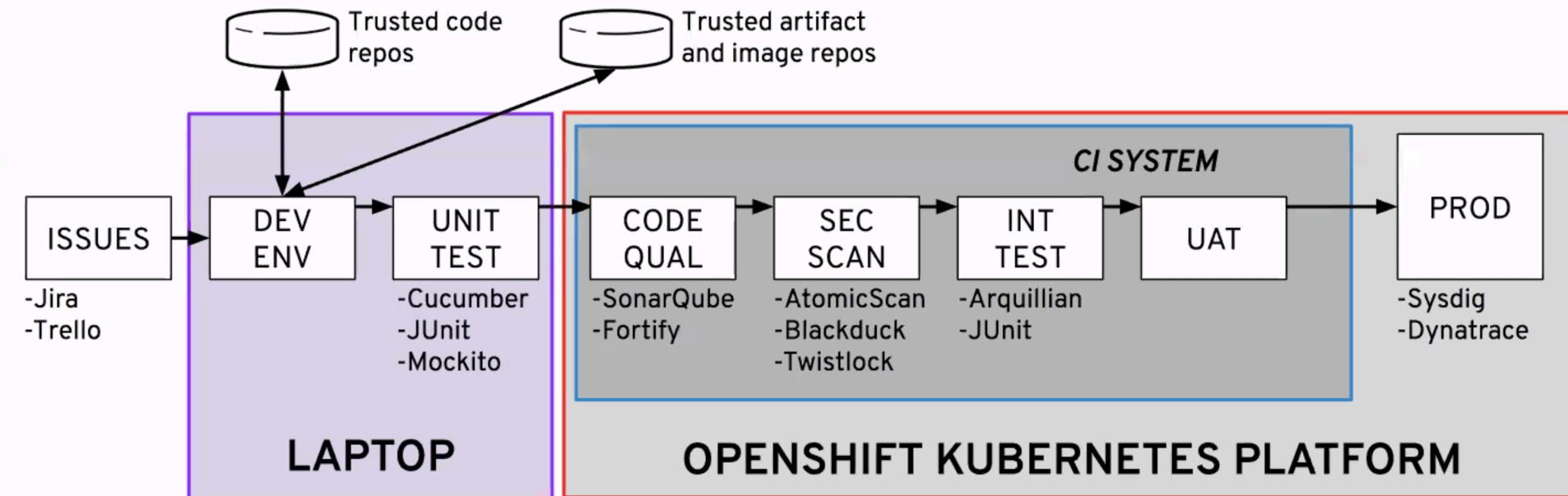


Container
Runtime

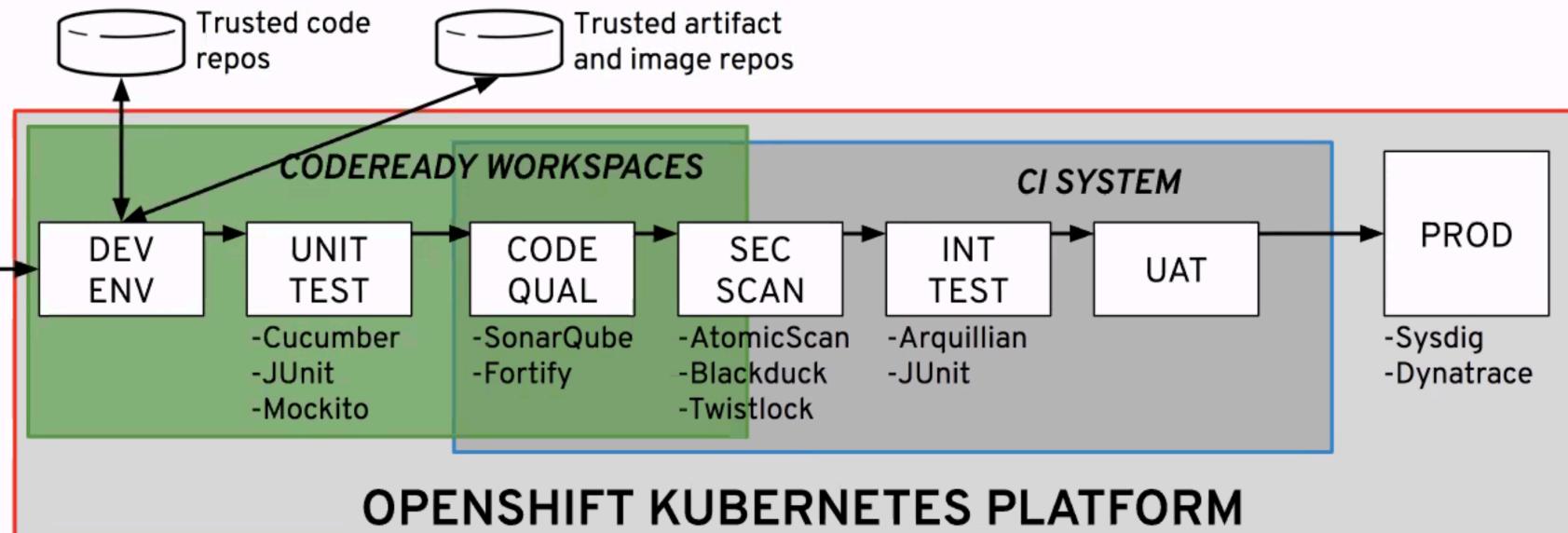
EASY to Share + EASY to Manage + SECURE

TODAY

THE TRUSTED SOFTWARE SUPPLY CHAIN POWERED BY WORKSPACES ON OPENSHIFT

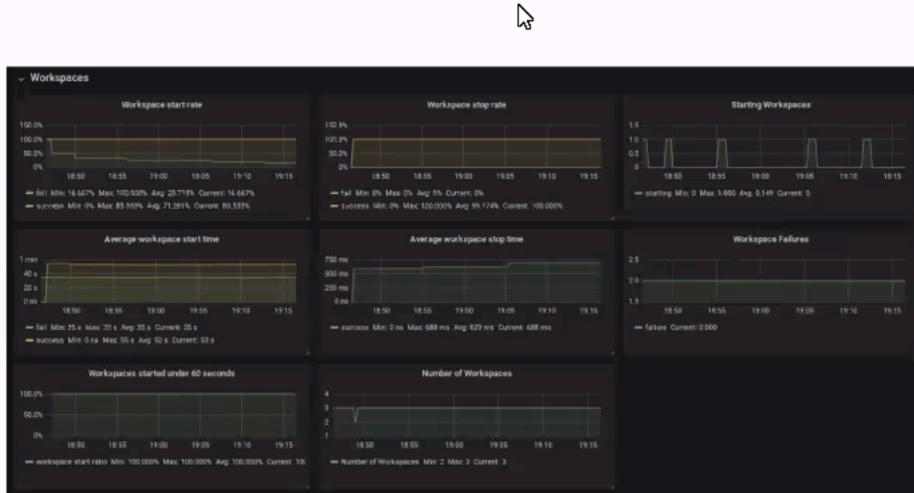


THE TRUSTED SOFTWARE SUPPLY CHAIN POWERED BY WORKSPACES ON OPENSHIFT



Monitoring Capabilities

- CodeReady Workspaces provides support for OpenTracing API. Connect to tracing tools (ex:Jaeger) to analyze the behaviour of transactions happening when Workspaces is deployed on your infrastructure.
- Combined with Grafana and Prometheus, get CodeReady Workspaces Metrics to help you monitor your deployment. Number of users, workspaces running, startup time, JVM state and many other aspects to help operating and monitoring your installation are getting available.



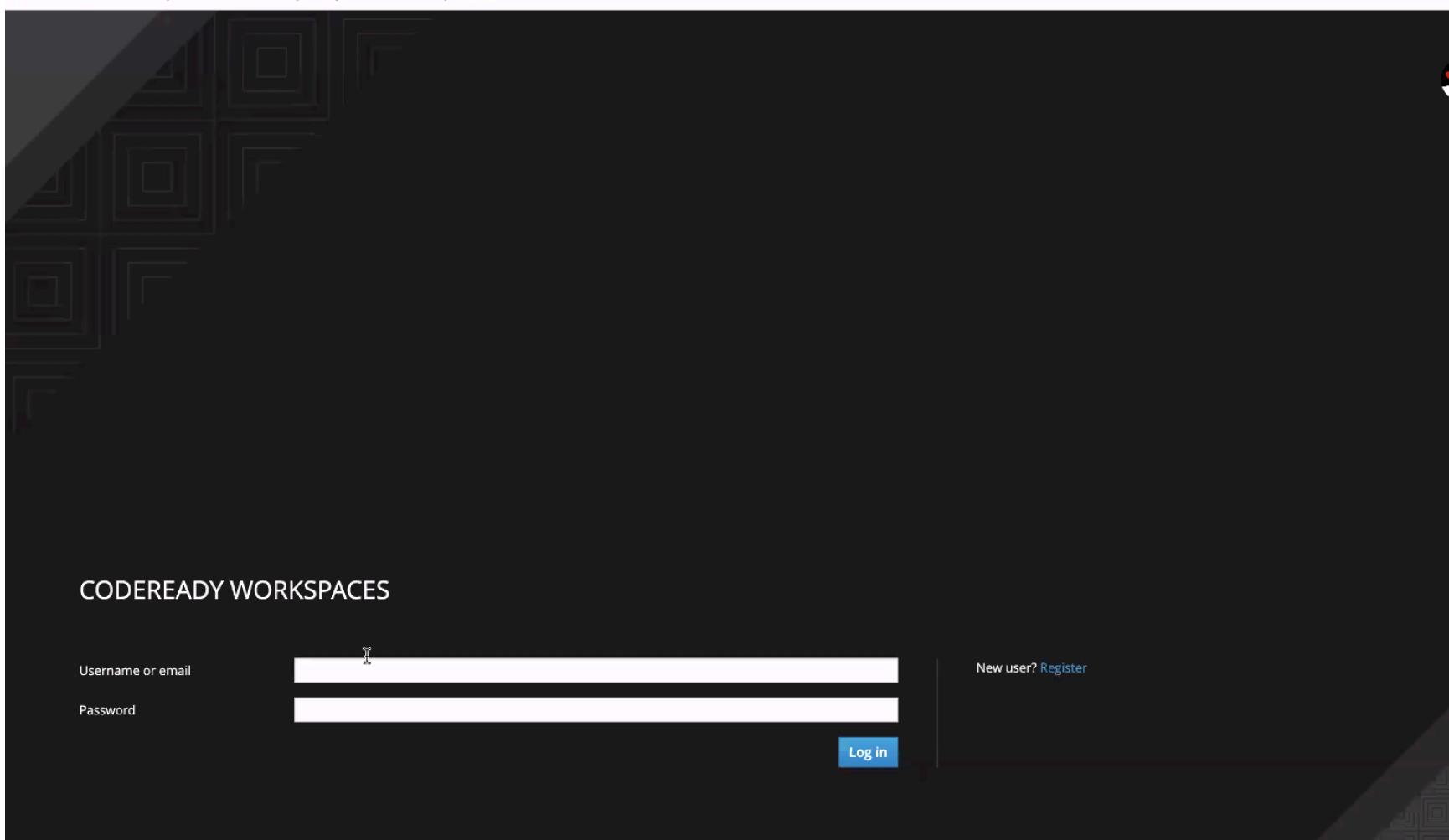
Installing CodeReady Workspaces



1. Installing CodeReady Workspaces on OpenShift using deployment Script.

Download @Red Hat Customer Portal : <https://access.redhat.com/>

2. Installing CodeReady Workspaces on OpenShift from OperatorHub



CODEREADY WORKSPACES TEAMS SPEND MORE TIME CODING



39% MORE TIME FOR CODING.



Key use cases

- Replace slow VDI for developers working in the company
 - Third-party consultants
 - High turnover / offshore developers
- Accelerate container development for teams that aren't yet Kubernetes experts
- Accelerate “task-based” (not daily) use cases
 - Diagnosing and fixing failed CI jobs
 - Fixing issues in legacy codebases
 - Stakeholder or QA/Docs reviews of new code



CODEREADY WORKSPACES AND ECLIPSE CHE

- CodeReady Workspaces is a supported subscription for the open Eclipse Che project.
- It is **not** a fork.
- CodeReady Workspaces and Eclipse Che have nearly identical functionality, the only differences are:
 - Workspaces is supported by Red Hat's global support organization
 - Workspaces includes only Red Hat Enterprise Linux based secure stacks
 - Workspaces is released quarterly (Che is released every 3 weeks)
 - Workspaces releases are tested more thoroughly due to the slower cadence
 - Any bugs fixed are contributed to the upstream Eclipse Che sources for inclusion into a future release (no proprietary code)
- The CodeReady Workspaces development team includes several Che committers, making it easier and faster for us to contribute bug fixes back to the community.

KEY TAKEAWAYS

CODE READY WORKSPACES make developing container-based applications and services on the Red Hat OpenShift Kubernetes platform easy.

1. **Accelerates projects** and onboarding of developers.
2. **Removes inconsistencies** and “it works on my machine...” delays.
3. **Protects source code** by removing it from hard-to-secure laptops.
4. **Reduction in the TCO** compared to multi-vendor developer workspaces solution stack
5. **User Experience** is as fast and familiar as running IDE on laptop

Cloud Pak for Applications: Technical Value

Run existing apps

WebSphere Application Server

WebSphere ND | WebSphere Base

Liberty Core | Mobile Foundation

JBoss Enterprise Application Server

Build new Cloud Native apps

Kabanero Enterprise is evolving to ...

ACCELERATORS FOR TEAMS & ENTERPRISE GOVERNANCE

Equipping teams with content, tools, architectures and methods so they can focus on business problems from day 1

Modernize existing apps

IBM Modernization & Developer Tools

Included with all components

Transformation Advisor

Application Navigator

WebSphere Migration Toolkit

Enterprise Dev tools & extensions for local IDE's

Supported when used with Cloud Pak for Applications, no charge

Red Hat Runtimes

Java/Jakarta EE
Open Liberty, JBoss EAP

Javascript
node.js

MicroProfile
Open Liberty , Thorntail

Distributed Data
Data Grid

Java SE
OpenJDK

Spring
Spring Boot

Reactive
VERT.X

Messaging
AMQ Broker

Java Web
JBoss WS

Java.next
QUARKUS

Serverless
Cloud Functions

WebSphere

Traditional
WebSphere

Liberty

Mobile Foundation

Red Hat OpenShift Container Platform

Perpetual and Term licensing options available w/ no functional restrictions to OpenShift



@MangeshPatank

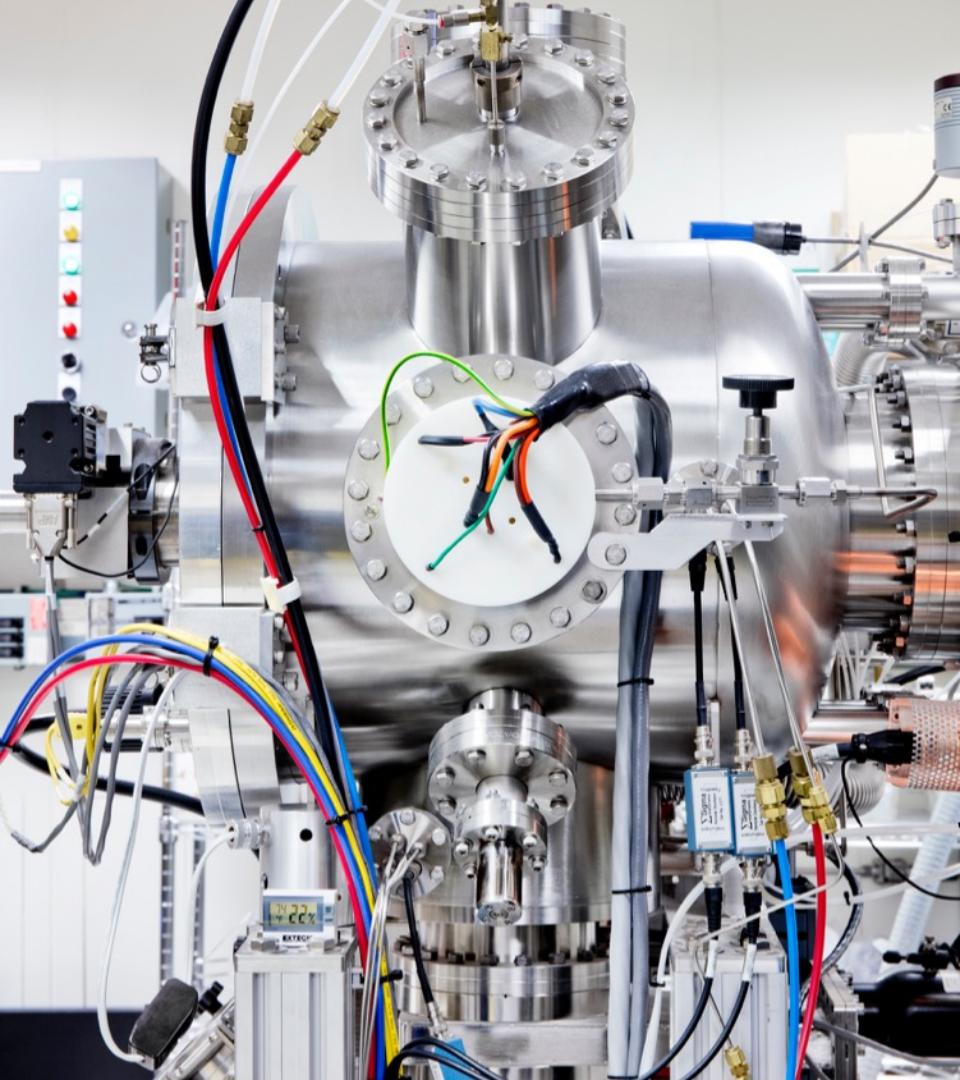
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Demo - Lab Time!



Lab links for CodeReady Workspace:

- To install Codeready Workspaces on CP4A using operators
- To create codeready workspace and create a sample node js application

