Eclipse Che on K8S

Manage projects and distributed teams with open source in-browser IDE

$ whoami
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Agenda

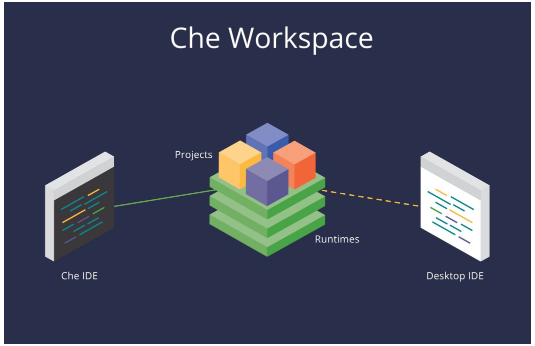
- What is Eclipse Che
- Architecture
- Integrations with K8S
- Runtimes and Workspaces
- Factory
- Demo

Eclipse Che

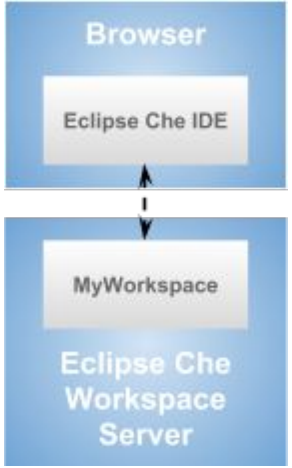
The Kubernetes-Native IDE for Developer Teams

Eclipse Che

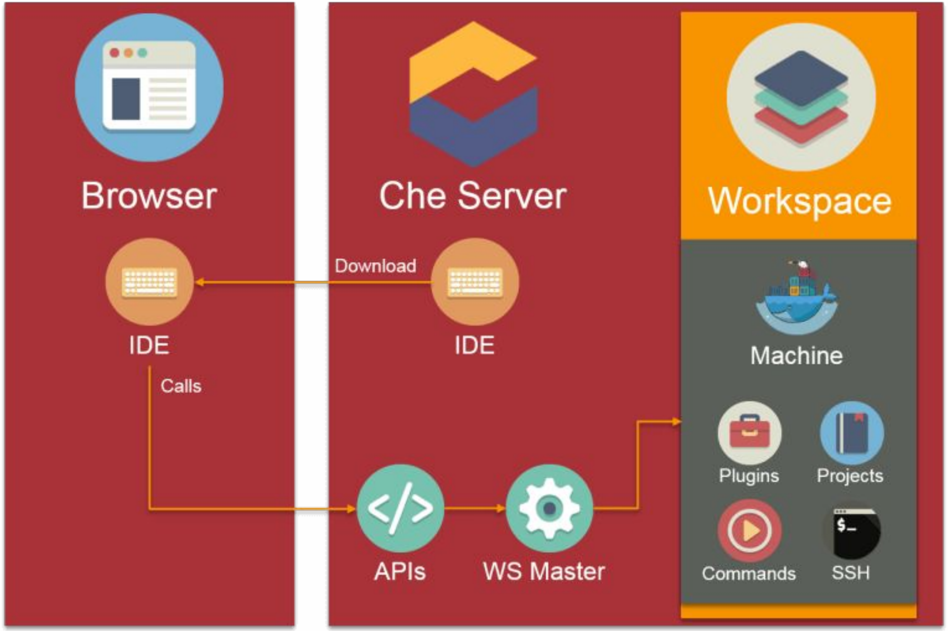
- In-Browser IDE
- Containerized extendible Workspaces
- Support most used Runtimes and Framework (and more!)
- Support Eclipse Theia for Visual Studio Code look’n’feel
- Support for Multi-tenancy
- **Open Source**



Eclipse Che


Browser
Eclipse Che IDE
MyWorkspace
Eclipse Che Workspace Server

Eclipse Che Architecture

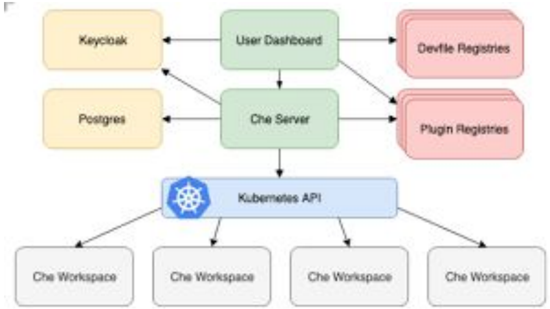


Integrations with K8S

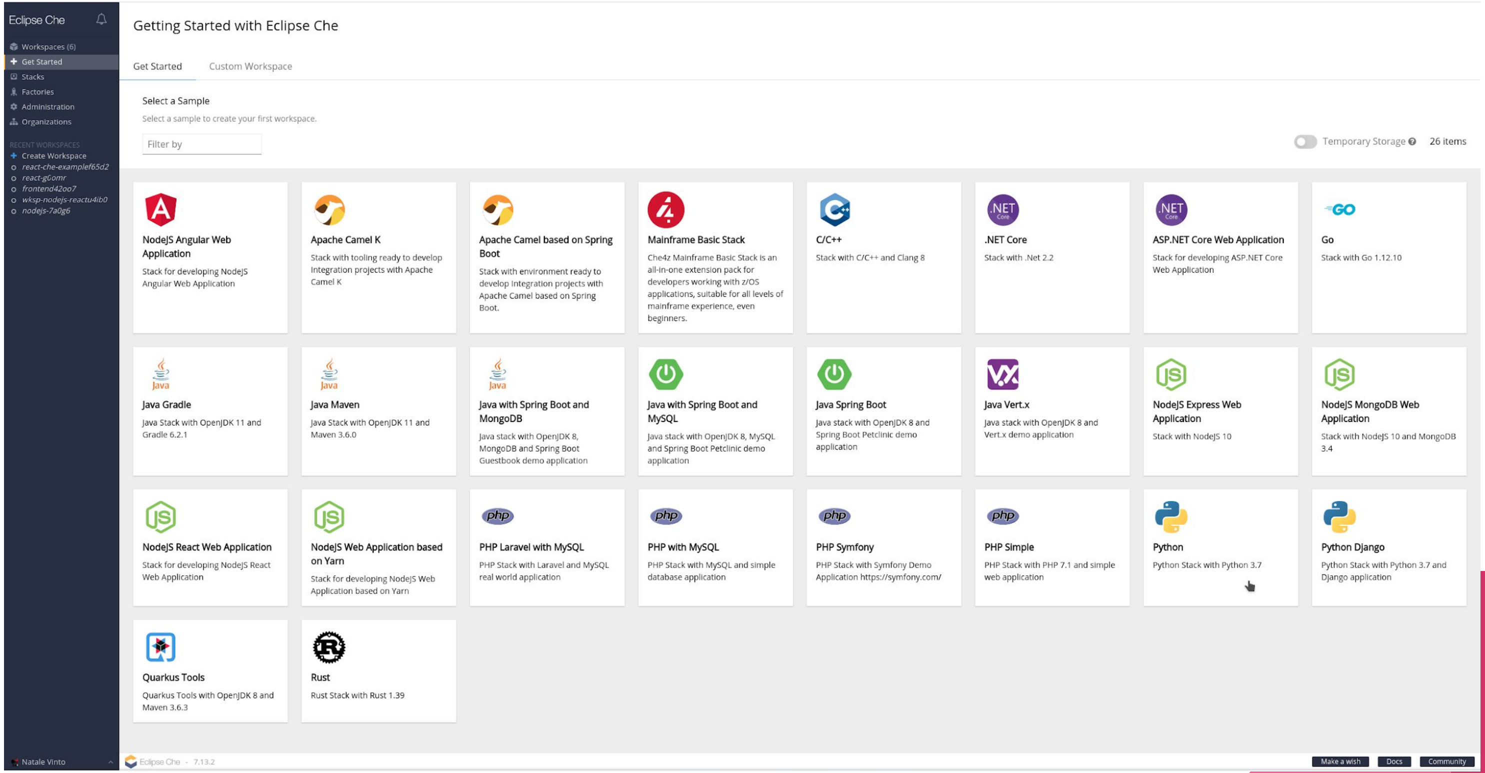
- Helm charts
  - You can use **chectl** to install on any k8s
- Operator
  - Available from OperatorHub.io
- Minikube addon
  - minikube addons enable olm

Integrations with K8S

- Persistence (PVC)
- Multi-tenancy (Keycloack SSO)
- Custom Resource



Runtimes and Workspaces



Eclipse Che

- Workspaces (6)
- Get Started
- Stacks
- Factories
- Administration
- Organizations

RECENT WORKSPACES

- Create Workspace
- *react-che-examplef65d2*
- *react-g6omr*
- *frontend42oo7*
- *wksp-nodejs-reactu4ib0*
- *nodejs-7a0g6*

Natale Vinto

Getting Started with Eclipse Che

Get Started | Custom Workspace

Select a Sample

Select a sample to create your first workspace.

Filter by

Temporary Storage 26 items

NodeJS Angular Web Application
Stack for developing NodeJS Angular Web Application

Apache Camel K
Stack with tooling ready to develop Integration projects with Apache Camel K

Apache Camel based on Spring Boot
Stack with environment ready to develop Integration projects with Apache Camel based on Spring Boot.

Mainframe Basic Stack
Che4z Mainframe Basic Stack is an all-in-one extension pack for developers working with z/OS applications, suitable for all levels of mainframe experience, even beginners.

C/C++
Stack with C/C++ and Clang 8

.NET Core
Stack with .Net 2.2

ASP.NET Core Web Application
Stack for developing ASP.NET Core Web Application

Go
Stack with Go 1.12.10

Java Gradle
Java Stack with OpenJDK 11 and Gradle 6.2.1

Java Maven
Java Stack with OpenJDK 11 and Maven 3.6.0

Java with Spring Boot and MongoDB
Java stack with OpenJDK 8, MongoDB and Spring Boot Guestbook demo application

Java with Spring Boot and MySQL
Java stack with OpenJDK 8, MySQL and Spring Boot Petclinic demo application

Java Spring Boot
Java stack with OpenJDK 8 and Spring Boot Petclinic demo application

Java Vert.x
Java stack with OpenJDK 8 and Vert.x demo application

NodeJS Express Web Application
Stack with NodeJS 10

NodeJS MongoDB Web Application
Stack with NodeJS 10 and MongoDB 3.4

NodeJS React Web Application
Stack for developing NodeJS React Web Application

NodeJS Web Application based on Yarn
Stack for developing NodeJS Web Application based on Yarn

PHP Laravel with MySQL
PHP Stack with Laravel and MySQL real world application

PHP with MySQL
PHP Stack with MySQL and simple database application

PHP Symfony
PHP Stack with Symfony Demo Application https://symfony.com/

PHP Simple
PHP Stack with PHP 7.1 and simple web application

Python
Python Stack with Python 3.7

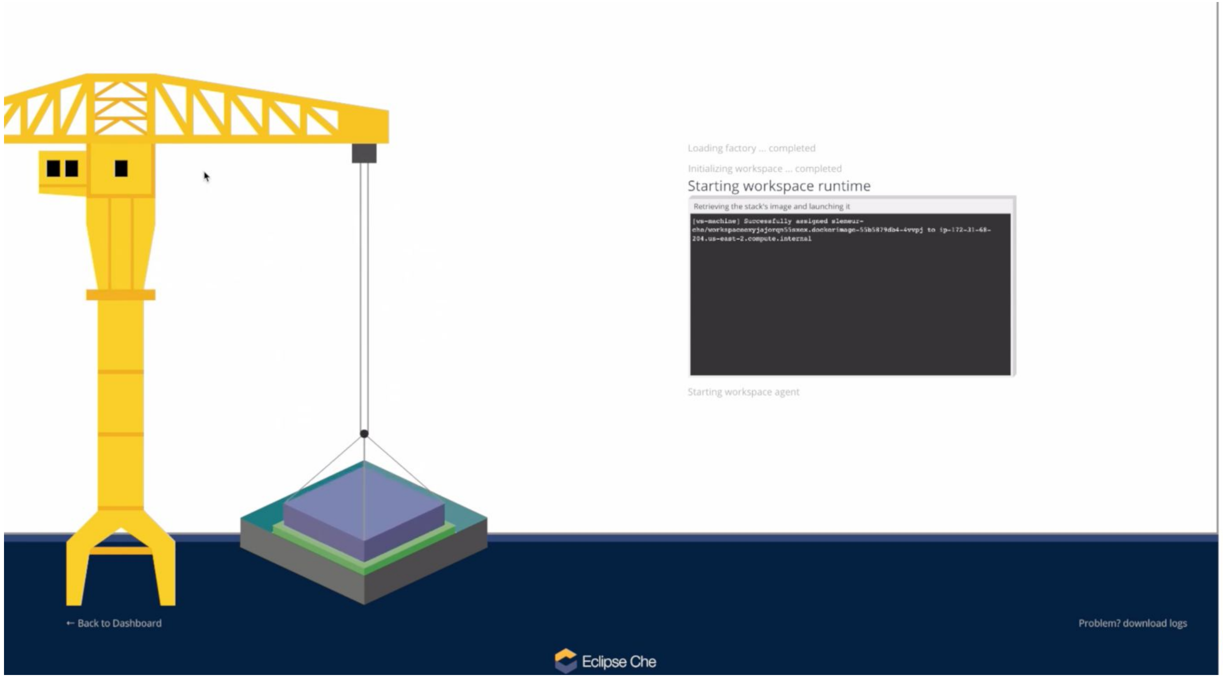
Python Django
Python Stack with Python 3.7 and Django application

Quarkus Tools
Quarkus Tools with OpenJDK 8 and Maven 3.6.3

Rust
Rust Stack with Rust 1.39

Eclipse Che · 7.13.2

Factory & Devfile



Loading factory ... completed

Initializing workspace ... completed

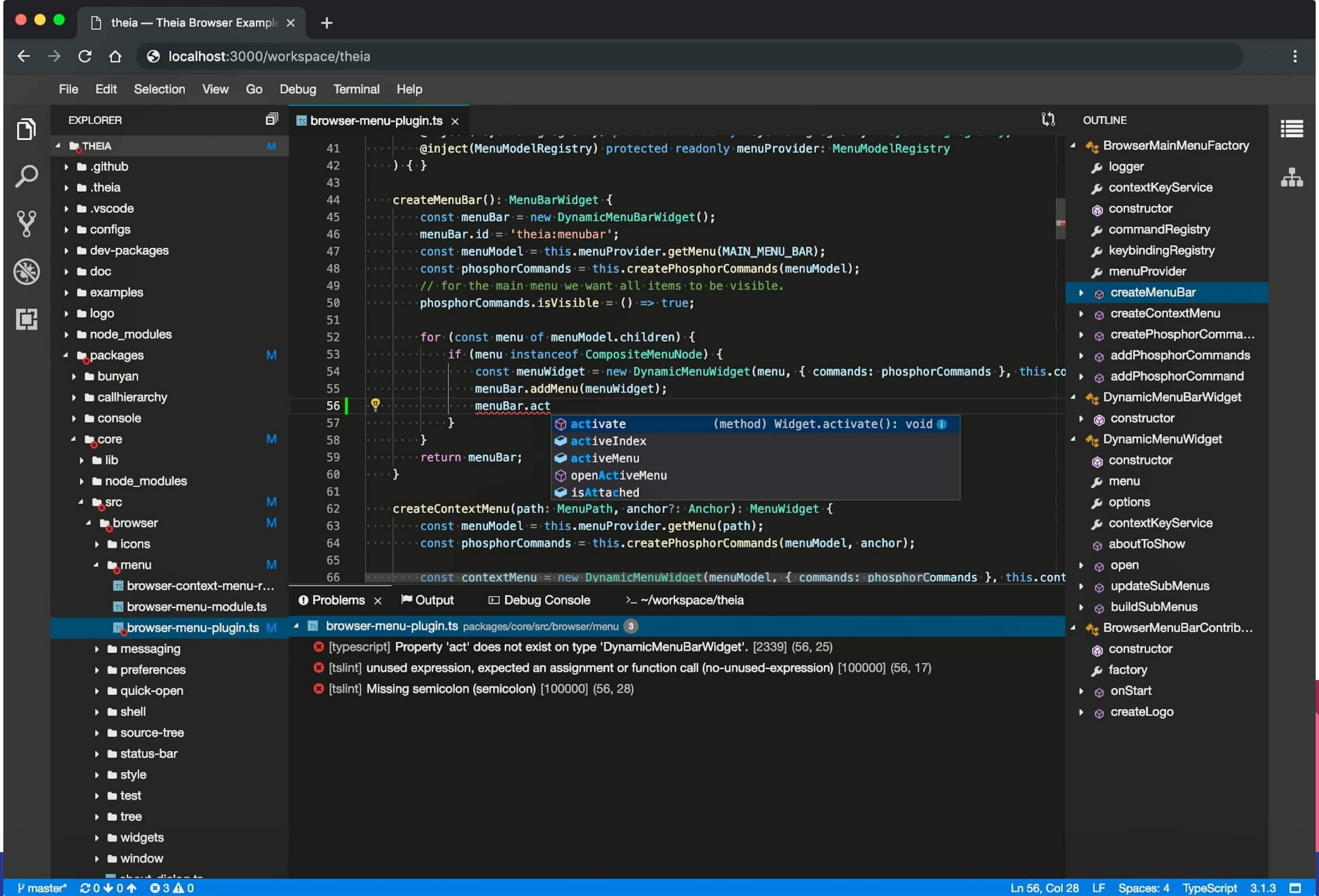
Starting workspace runtime

Retrieving the stack's image and launching it

```
[ws-machine] Successfully assigned sleneur-
che/workspacexyjajorqn55sxex.dockerimage-55b5879db4-4vvpj to ip-172-31-68-
204.us-east-2.compute.internal
```

Starting workspace agent

- Create Workspaces from devfile
- Devfile is a YAML containing description of Workspace
- Easy to extend
- Fork and Click Developer Workspace



```
        @inject(MenuModelRegistry) protected readonly menuProvider: MenuModelRegistry
    ) { }

    createMenuBar(): MenuBarWidget {
        const menuBar = new DynamicMenuBarWidget();
        menuBar.id = 'theia:menubar';
        const menuModel = this.menuProvider.getMenu(MAIN_MENU_BAR);
        const phosphorCommands = this.createPhosphorCommands(menuModel);
        // for the main menu we want all items to be visible.
        phosphorCommands.isVisible = () => true;

        for (const menu of menuModel.children) {
            if (menu instanceof CompositeMenuNode) {
                const menuWidget = new DynamicMenuWidget(menu, { commands: phosphorCommands }, this.co
                menuBar.addMenu(menuWidget);
                menuBar.act
            }
        }
        return menuBar;
    }

    createContextMenu(path: MenuPath, anchor?: Anchor): MenuWidget {
        const menuModel = this.menuProvider.getMenu(path);
        const phosphorCommands = this.createPhosphorCommands(menuModel, anchor);

        const contextMenu = new DynamicMenuWidget(menuModel, { commands: phosphorCommands }, this.cont
```

```
browser-menu-plugin.ts packages/core/src/browser/menu 3
[typescript] Property 'act' does not exist on type 'DynamicMenuBarWidget'. [2339] (56, 25)
[tslint] unused expression, expected an assignment or function call (no-unused-expression) [100000] (56, 17)
[tslint] Missing semicolon (semicolon) [100000] (56, 28)
```

Demo

- Installation on Minikube
- Using and Extending React Workspace
- Test into a workspace with auto generated ingress to access app
- Push changes to Github, triggering Quay.io image build and use K8S resource for deployment of the app on Minikube cluster

https://github.com/blues-man/eclipse-che-minikube-demo

Thank you!

- Visit **OperatorHub.io**
- Get more about Eclipse Che and CodeReady Workspaces at **learn.openshift.com**