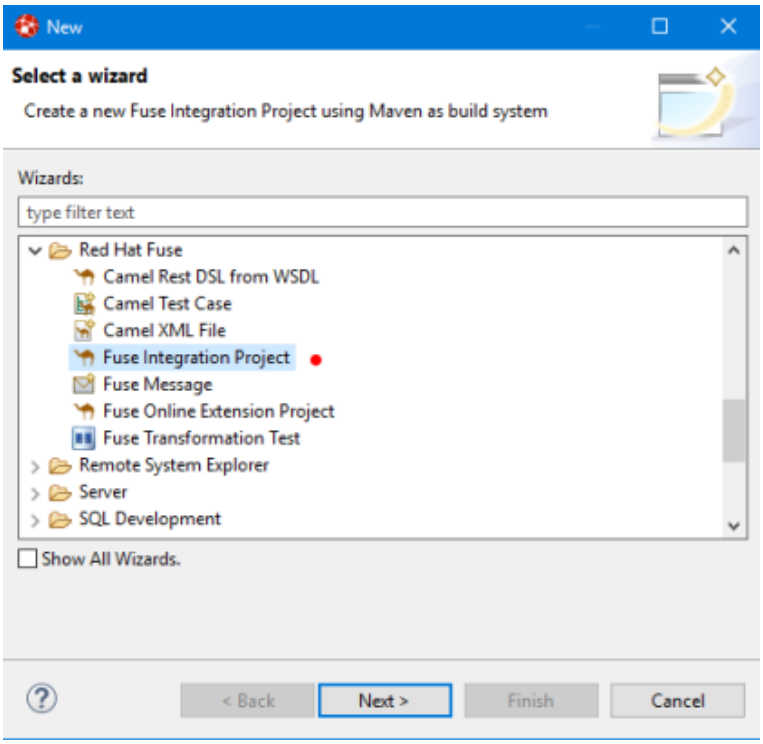
Taher Maamouri Rania Ben Romdhane Samed Fkiri
FIA2-02

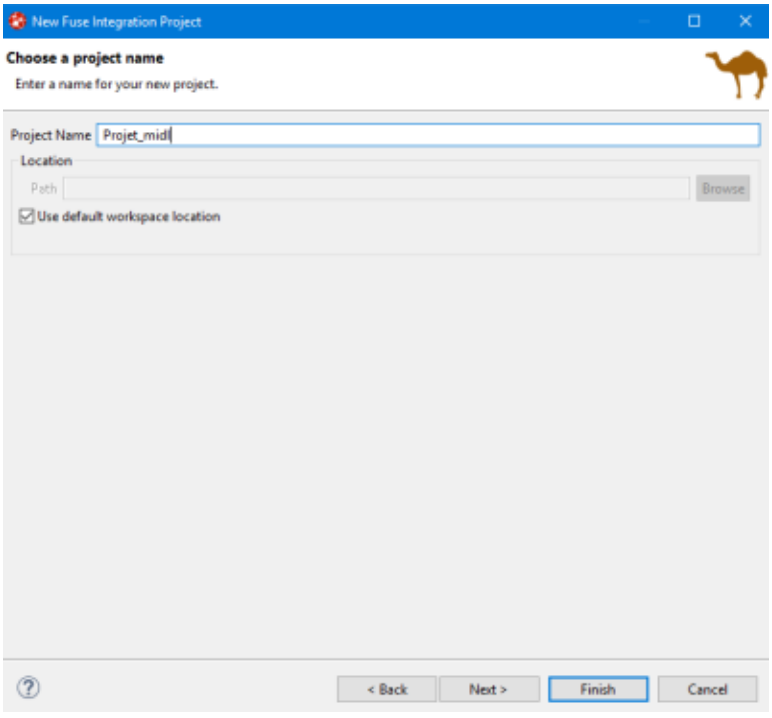
Rapport

Fuse REST API sur OpenShift

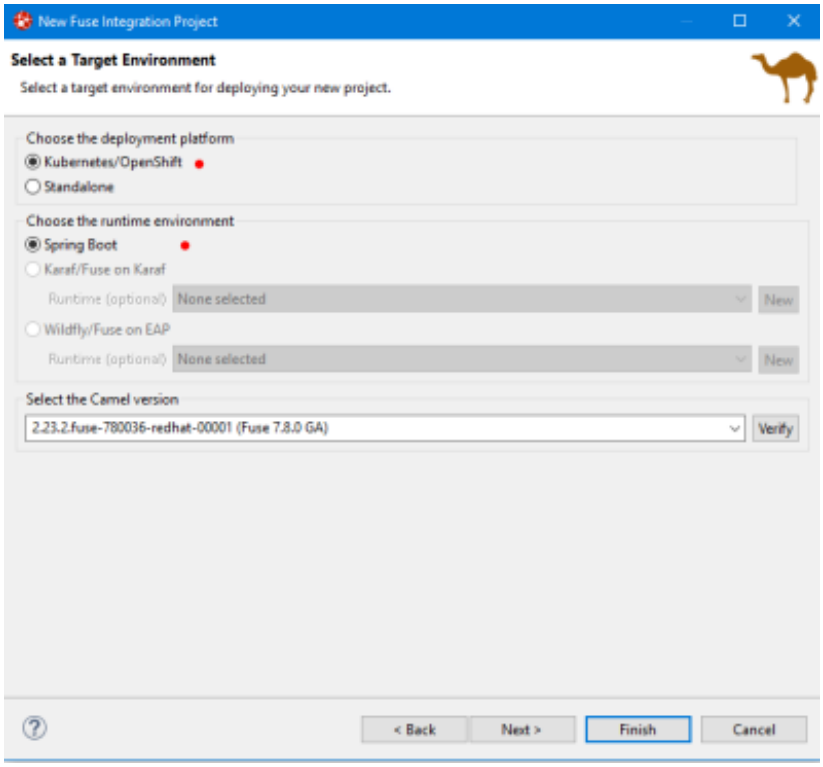
Création de projet



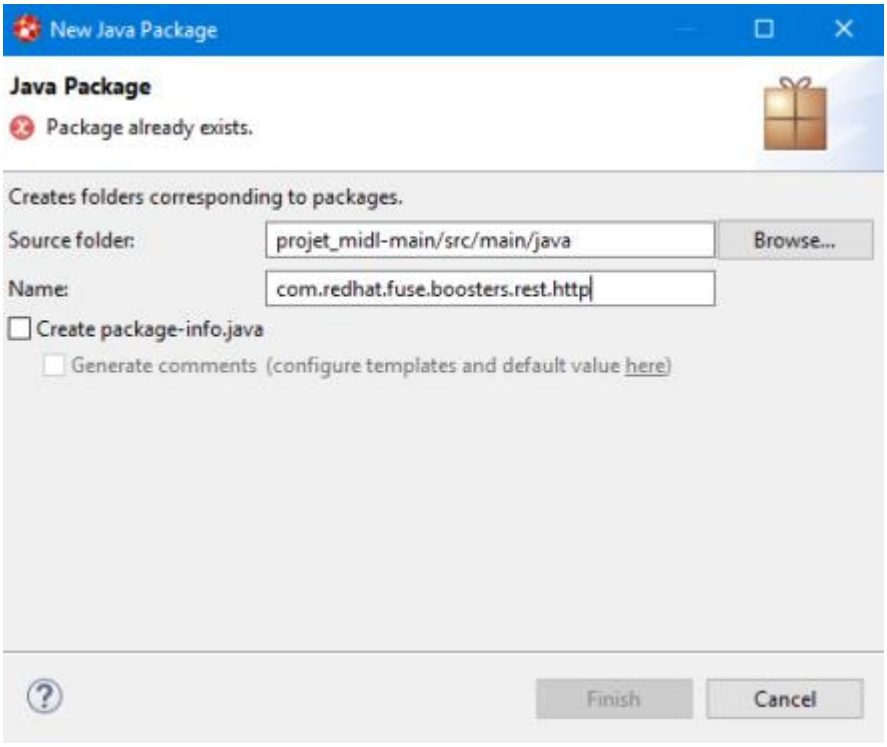
Nom de projet :



Choix de la plateforme de déploiement, l'environnement de runtime ainsi que la version de fuse :



Création de package dans le répertoire : **src/main/java**



Classe Application responsable a l'exécution du projet :

```java
package com.redhat.fuse.boosters.rest.http;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class Application {

    /**
     * Main method to start the application.
     */
    public static void main(String[] args) {
        SpringApplication.run(Application.class, args);
    }

}
```

Création de la classe CamelRouter pour la configuration et l'implémentation du

Api router :

```java
package com.redhat.fuse.boosters.rest.http;

import org.apache.camel.builder.RouteBuilder;
import org.apache.camel.model.rest.RestBindingMode;
import org.springframework.stereotype.Component;


@Component
public class CamelRouter extends RouteBuilder {

    @Override
    public void configure() throws Exception {

        restConfiguration()
                .apiContextPath("/api-doc")
                .apiProperty("api.title", "Taher's REST API")
                .apiProperty("api.version", "1.0")
                .apiProperty("cors", "true")
                .apiProperty("base.path", "camel/")
                .apiProperty("api.path", "/")
                .apiProperty("host", "")
                .apiContextRouteId("doc-api")
            .component("servlet")
            .bindingMode(RestBindingMode.json);

        rest("/Haamouri").description("Greeting to {name}")
            .get("/{name}").outType(Greetings.class)
                .route().routeId("greeting-api")
                .to("direct:greetingsImpl");

        from("direct:greetingsImpl").description("API route implementation")
            .streamCaching()
            .to("bean:greetingsService?method=getGreetings");
           }

}
```

Création de la class Greetings :

```java
package com.redhat.fuse.boosters.rest.http;

public class Greetings {

    private String greetings;

    public Greetings() {
    }

    public Greetings(String greetings) {
        this.greetings = greetings;
    }

    public String getGreetings() {
        return greetings;
    }

    public void setGreetings(String greetings)
        this.greetings = greetings;
    }
```

Création de l'interface GreetingsService :

```java
package com.redhat.fuse.boosters.rest.http;

public interface GreetingsService {

    /**
     * @return a string greetings
     */
    Greetings getGreetings( String name);

}
```

Implémentation de l'interface GreetingsService avec la récupération du paramètre nom à l'aide de la méthode **GET**:

```
package com.redhat.fuse.boosters.rest.http;

import org.apache.camel.Header;
import org.springframework.stereotype.Service;

@Service("greetingsService")
public class GreetingsServiceImpl implements GreetingsService {

    private static final String THE_GREETINGS = "username: ";

    @Override
    public Greetings getGreetings(@Header("name") String name ) {
        return new Greetings( THE_GREETINGS + name );
    }

}
```

Création du fichier **indexrootmapper** pour la redirection du client vers la page web :

```
package com.redhat.fuse.boosters.rest.http;

import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
import org.springframework.web.servlet.config.annotation.ViewControllerRegistry;
import org.springframework.web.servlet.config.annotation.WebMvcConfigurer;

@Configuration
@ComponentScan
public class IndexRootMapper implements WebMvcConfigurer {

    public void addViewControllers(ViewControllerRegistry registry) {
        registry.addViewController("/").setViewName("forward:/rest-http-index.html");
    }

}
```

Choix du port pour le lancement de l'application dans le fichier : **application.properties**

```
server.port=9999

endpoints.enabled = false
endpoints.health.enabled = true
management.health.defaults.enabled=false

camel.health.enabled=false
```

Création du fichier **deployment.yml** dans **src/main/fabric8** pour la configuration du déploiement sur openshift

```yaml
spec:
  template:
    spec:
      containers:
        -
          resources:
           requests:
             cpu: "0.2"
             memory: 256Mi
           limits:
             cpu: "1.0"
             memory: 256Mi
          env:
          - name: SPRING_APPLICATION_JSON
            value: '{"server":{"undertow":{"io-threads":1, "worker-threads":2 }}}'
```

Création de l'interface du client (GUI) avec les fichiers **rest-http-index.html** et **style.css**

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <link rel="stylesheet" href="./style.css">
</head>

<body>
    <div class="login-box">
        <h2>API test :</h2>
        <form>

            <div class="user-box">
                <input type="text" name="username" required="" id="id1">
                <label>Username</label>
            </div>


            <a href="/test.html" onclick="location.href='/camel/maamouri/'+document.getElementById('id1').value ;return false;">
                <span></span>
                <span></span>
                <span></span>
                <span></span> Submit
            </a>
        </form>
    </div>
</body>

</html>
```

L'ajout des « dependencies » necessaires dans le fichier **Pom.xml** :

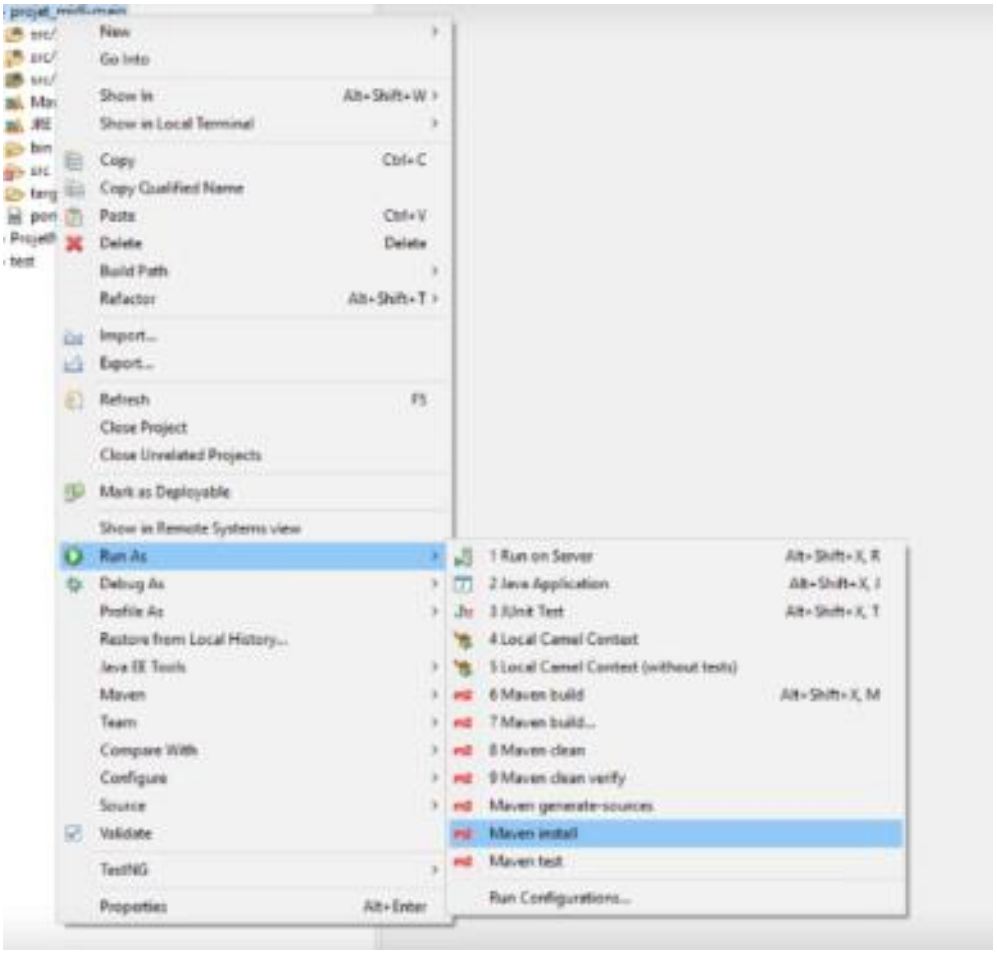
```xml
<dependency>
  <groupId>io.fabric8</groupId>
  <artifactId>openshift-client</artifactId>
</dependency>
```

```
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-spring-boot-starter</artifactId>
</dependency>
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-http-starter</artifactId>
</dependency>
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-servlet-starter</artifactId>
</dependency>
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-jackson-starter</artifactId>
</dependency>
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-swagger-java-starter</artifactId>
</dependency>
<dependency>
```

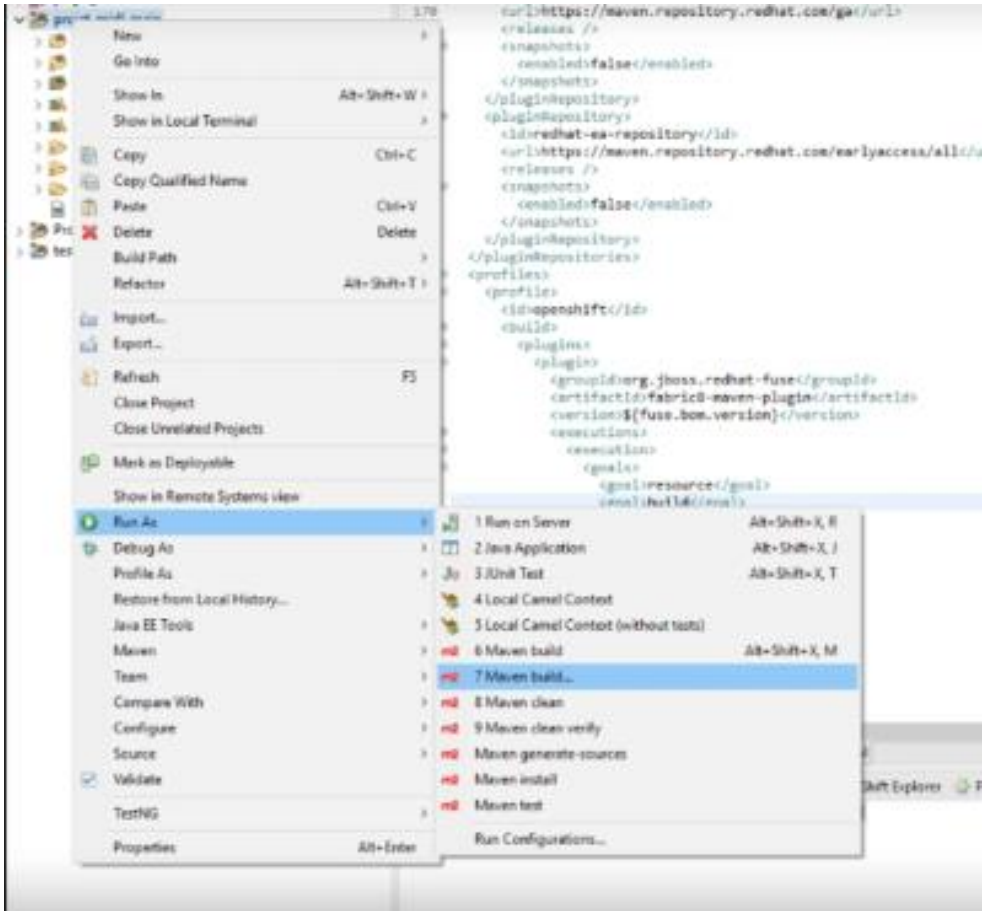
Lancement de projet sur Fuse

On doit suivre ces étapes :

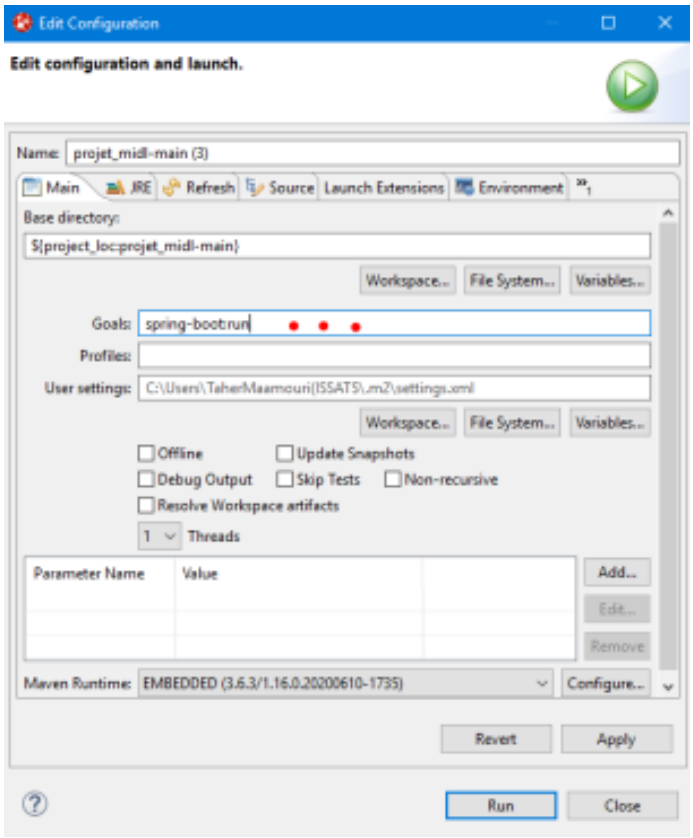
Maven install



Maven Build



On doit taper la commande suivante : « **spring-boot:run** »

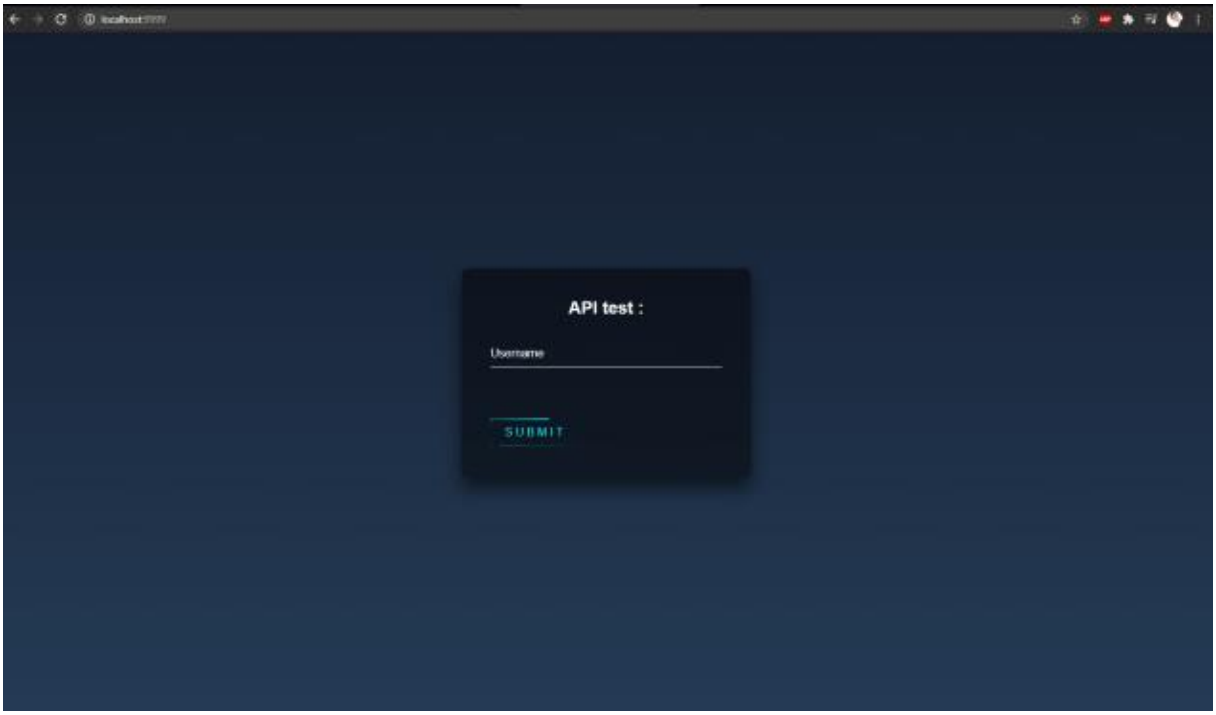


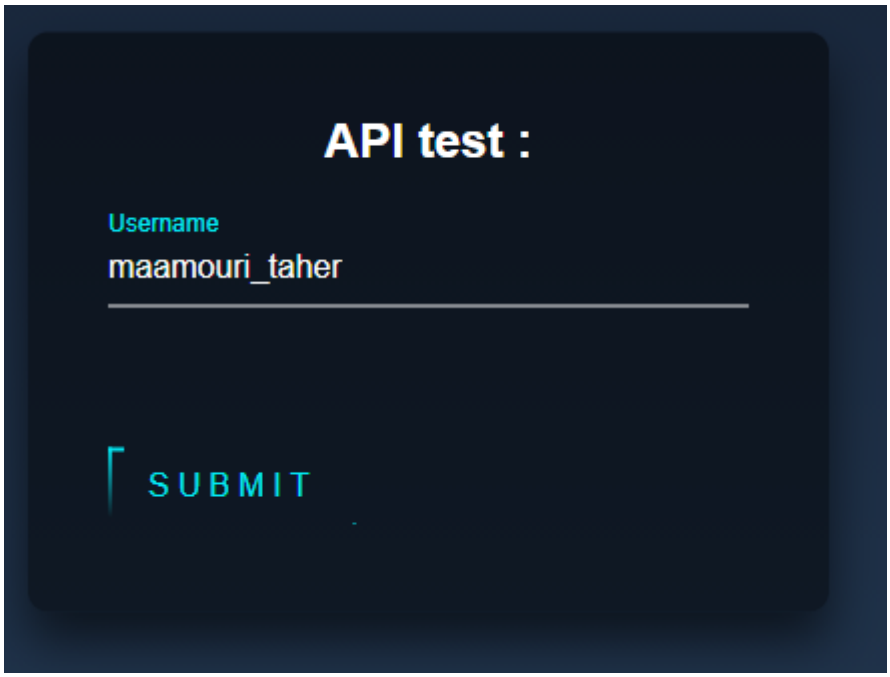
L'application a été bien lancé sur le port 9999

```
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ fuse-demo-app ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\Users\TaherMaamouri(ISSATS\workspaceCR\projet_mid1-main\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.7.0:testCompile (default-testCompile) @ fuse-demo-app ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] <<< spring-boot-maven-plugin:7.6.0.fuse-sb2-760028-redhat-00001:run (default-cli) < test-compile @ fuse-demo-app <<<
[INFO]
[INFO]
[INFO] --- spring-boot-maven-plugin:7.6.0.fuse-sb2-760028-redhat-00001:run (default-cli) @ fuse-demo-app ---
```

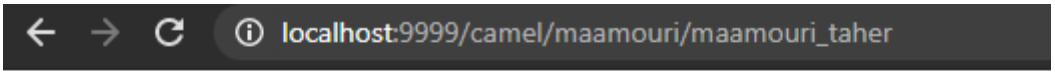
```
 :: Spring Boot ::        (v2.1.6.RELEASE)

2021-01-29 20:48:00.255  INFO 5076 --- [           main] c.r.fuse.boosters.rest.http.Application  : Starting Application on DESKTOP-VBIU35K with PID 5076 (C:\Users\TaherMaamouri(ISSATS\w
2021-01-29 20:48:00.263  INFO 5076 --- [           main] c.r.fuse.boosters.rest.http.Application  : No active profile set, falling back to default profiles: default
2021-01-29 20:48:02.744  INFO 5076 --- [           main] o.a.c.i.converter.DefaultTypeConverter   : Type converters loaded (core: 195, classpath: 10)
2021-01-29 20:48:03.094  WARN 5076 --- [           main] io.undertow.websockets.jsr               : UT026010: Buffer pool was not set on WebSocketDeploymentInfo, the default pool will be
2021-01-29 20:48:03.117  INFO 5076 --- [           main] io.undertow.servlet                      : Initializing Spring embedded WebApplicationContext
2021-01-29 20:48:03.118  INFO 5076 --- [           main] o.s.web.context.ContextLoader            : Root WebApplicationContext: initialization completed in 2792 ms
2021-01-29 20:48:03.924  INFO 5076 --- [           main] o.s.s.concurrent.ThreadPoolTaskExecutor  : Initializing ExecutorService 'application-TaskExecutor'
2021-01-29 20:48:04.594  INFO 5076 --- [           main] o.s.b.a.e.web.EndpointLinksResolver      : Exposing 2 endpoint(s) beneath base path '/actuator'
2021-01-29 20:48:04.878  INFO 5076 --- [           main] o.a.camel.spring.boot.RoutesCollector    : Loading additional Camel XML routes from: classpath:camel/*.xml
2021-01-29 20:48:04.878  INFO 5076 --- [           main] o.a.camel.spring.boot.RoutesCollector    : Loading additional Camel XML rests from: classpath:camel-rest/*.xml
2021-01-29 20:48:04.895  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Apache Camel 2.23.2.fuse-760030-redhat-00001 (CamelContext: camel-1) is starting
2021-01-29 20:48:04.898  INFO 5076 --- [           main] o.a.c.m.ManagedManagementStrategy        : JMX is enabled
2021-01-29 20:48:05.219  INFO 5076 --- [           main] o.a.c.impl.DefaultStreamCachingStrategy  : StreamCaching in use with spool directory: C:\Users\TAHERM~1\AppData\Local\Temp\camel\
2021-01-29 20:48:05.349  INFO 5076 --- [           main] o.a.c.c.jackson.JacksonDataFormat        : Found single ObjectMapper in Registry to use: com.fasterxml.jackson.databind.ObjectMap
2021-01-29 20:48:05.351  INFO 5076 --- [           main] o.a.c.c.jackson.JacksonDataFormat        : Found single ObjectMapper in Registry to use: com.fasterxml.jackson.databind.ObjectMap
2021-01-29 20:48:05.357  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Route: route1 started and consuming from: direct://greetingsImpl
2021-01-29 20:48:05.359  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Route: greeting-api started and consuming from: servlet://Maamouri%7B%7Bname%7D%7D?httpMetho
2021-01-29 20:48:05.361  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Route: doc-api started and consuming from: servlet://api-doc?httpMethodRestrict=GET&mat
2021-01-29 20:48:05.363  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Total 3 routes, of which 3 are started
2021-01-29 20:48:05.365  INFO 5076 --- [           main] o.a.camel.spring.SpringCamelContext      : Apache Camel 2.23.2.fuse-760030-redhat-00001 (CamelContext: camel-1) started in 0.470
2021-01-29 20:48:05.373  INFO 5076 --- [           main] o.a.c.c.s.CamelHttpTransportServlet      : Initialized CamelHttpTransportServlet[name=CamelServlet, contextPath=]
2021-01-29 20:48:05.393  INFO 5076 --- [           main] org.xnio                                 : XNIO version 3.3.8.Final
2021-01-29 20:48:05.413  INFO 5076 --- [           main] org.xnio.nio                             : XNIO NIO Implementation Version 3.3.8.Final
2021-01-29 20:48:05.935  INFO 5076 --- [           main] o.s.b.w.e.u.UndertowServletWebServer     : Undertow started on port(s) 9999 (http) with context path ''
2021-01-29 20:48:05.940  INFO 5076 --- [           main] c.r.fuse.boosters.rest.http.Application  : Started Application in 6.178 seconds (JVM running for 12.724)
2021-01-29 20:48:16.552  INFO 5076 --- [ XNIO-1 task-1] io.undertow.servlet                      : Initializing Spring DispatcherServlet 'dispatcherServlet'
2021-01-29 20:48:16.553  INFO 5076 --- [ XNIO-1 task-1] o.s.web.servlet.DispatcherServlet        : Initializing Servlet 'dispatcherServlet'
2021-01-29 20:48:16.567  INFO 5076 --- [ XNIO-1 task-1] o.s.web.servlet.DispatcherServlet        : Completed initialization in 14 ms
```





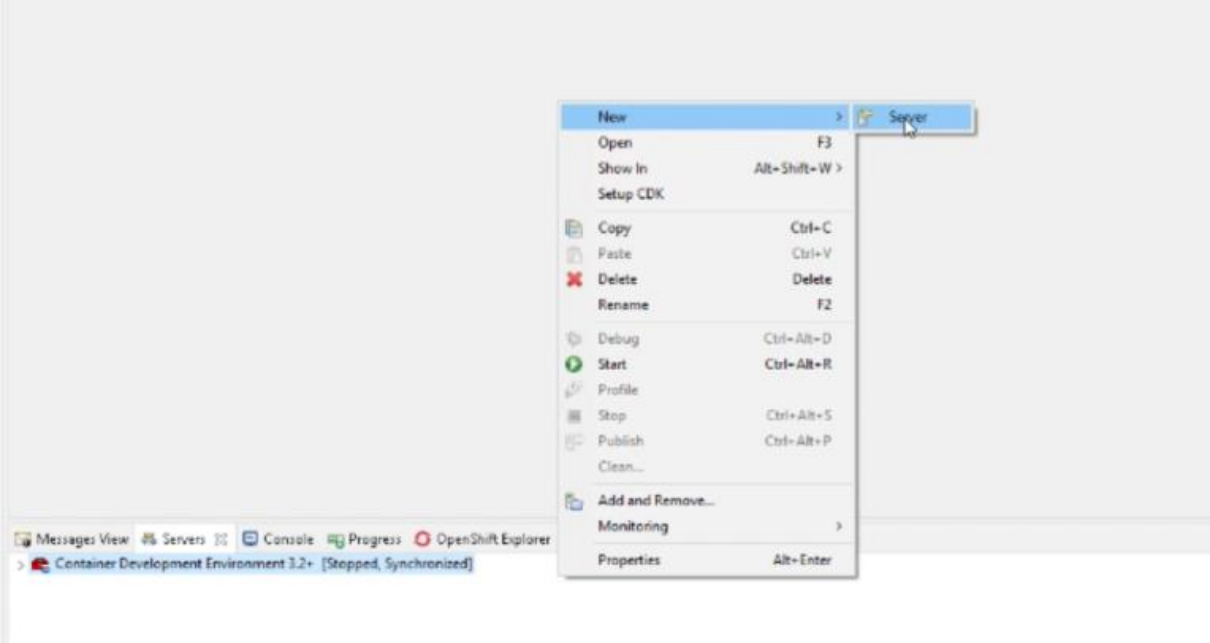
Le retour de l'Api sous forme **JSON**

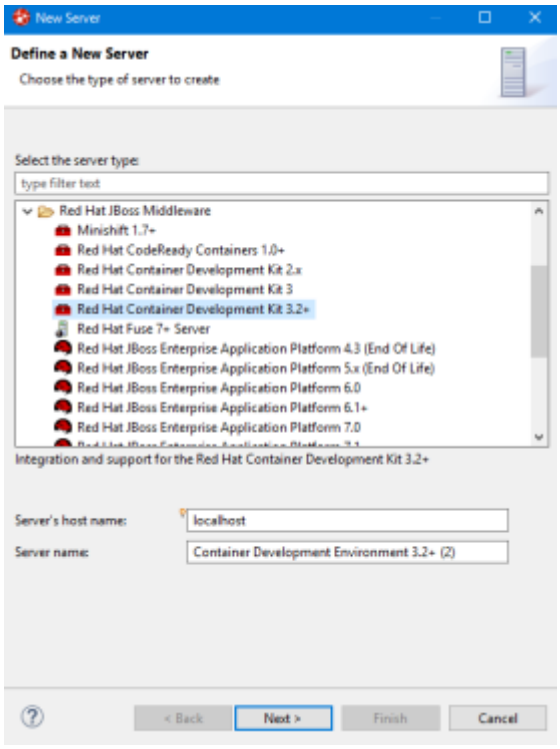


{"greetings":"username: maamouri_taher"}

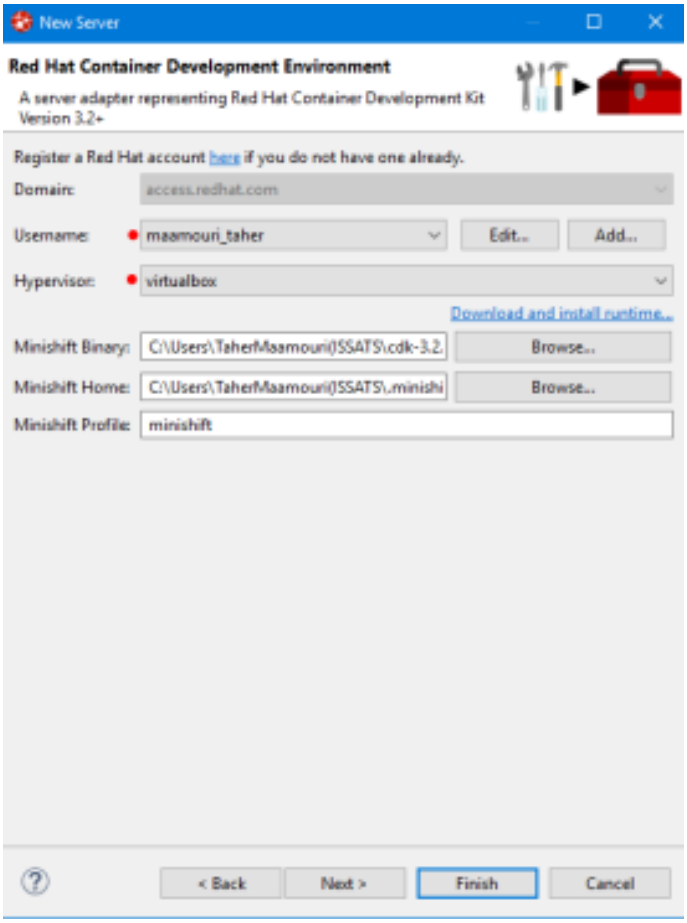
Deploiment sur OpenShift

Création de container Openshift

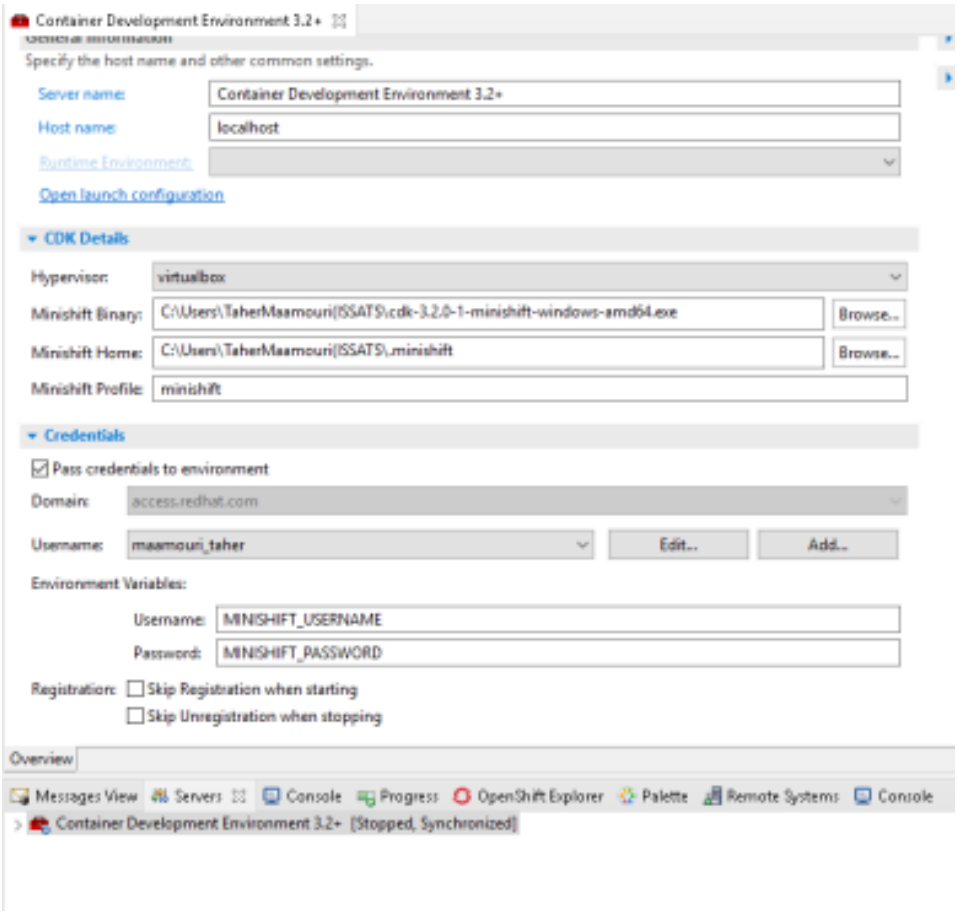




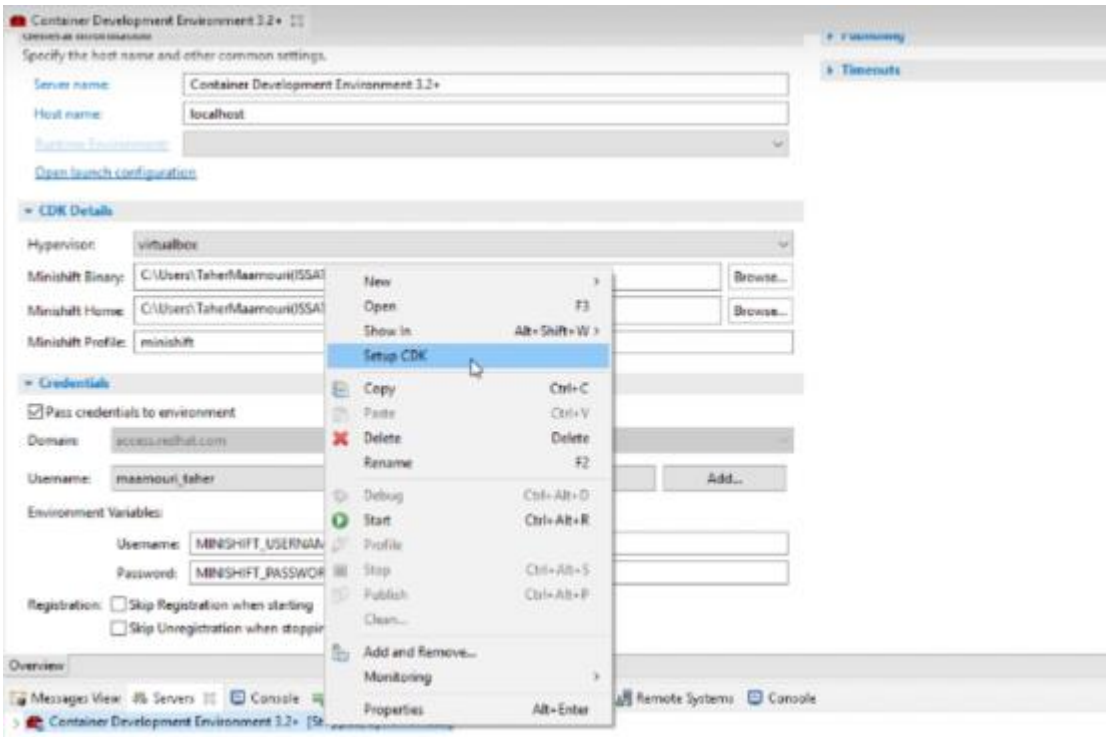
L'ajout du compte Redhat et le choix de l'hyperviseur de la machine virtuelle



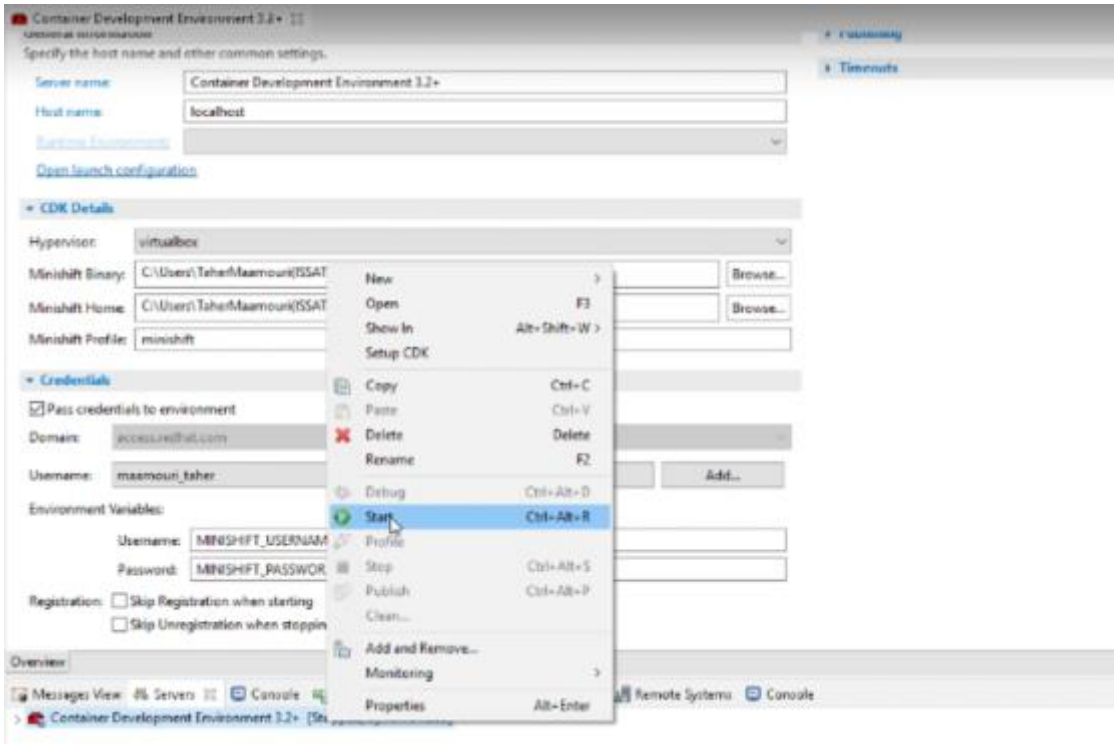
La configuration des variables d'environnement :



Setup **CDK** pour la création de l'image virtuelle minishift.



Lancement de minshif :



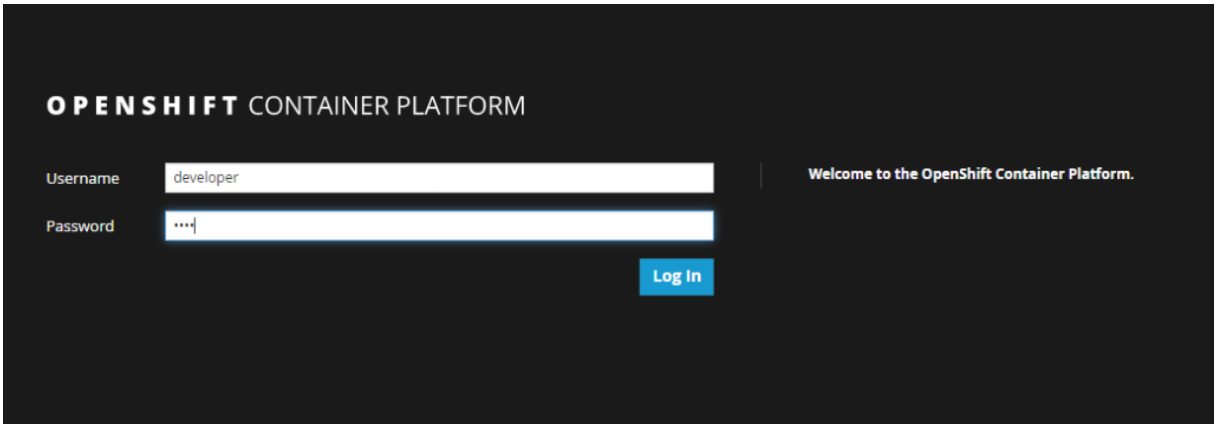
Messages View | Servers | Console | Progress | OpenShift Explorer | Palette | Remote Systems

<terminated> Container Development Environment 3.2+ [Red Hat CRC / CDK / Minishift Server Startup Configuration] C:\Users\T

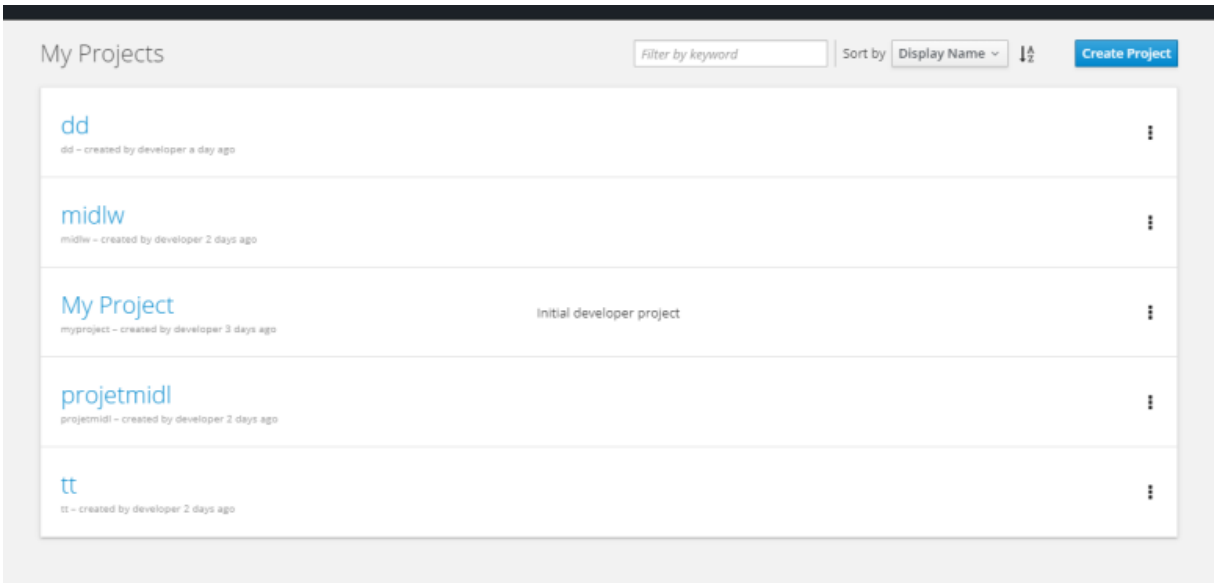
```
-- Starting local OpenShift cluster using 'virtualbox' hypervisor ...
-- Starting Minishift VM ........................... OK
-- Registering machine using subscription-manager
   Registration in progress ..... OK [32s]
-- Checking for IP address ... OK
-- Checking if external host is reachable from the Minishift VM ...
   Pinging 8.8.8.8 ... OK
-- Checking HTTP connectivity from the VM ...
   Retrieving http://minishift.io/index.html ... OK
-- Checking if persistent storage volume is mounted ... OK
-- Checking available disk space ... 37% used OK
-- OpenShift cluster will be configured with ...
   Version: v3.6.173.0.21
-- Checking `oc` support for startup flags ...
   host-data-dir ... OK
   host-pv-dir ... OK
   host-volumes-dir ... OK
   routing-suffix ... OK
   host-config-dir ... OK
Starting OpenShift using registry.access.redhat.com/openshift3/ose:v3.6.173.0.21 ...
OpenShift server started.

The server is accessible via web console at:
    https://192.168.99.103:8443
```

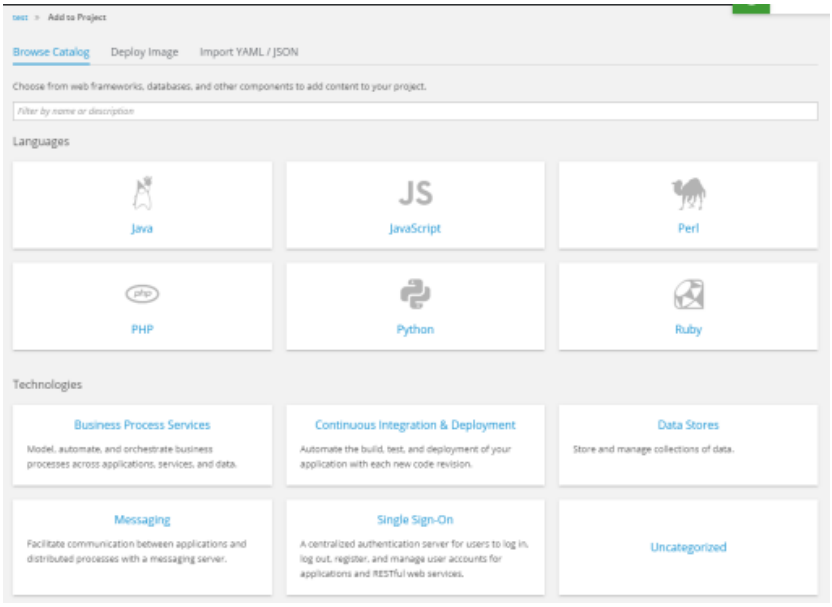
Connexion avec le compte développeur créé par défaut avec l'installation minishift

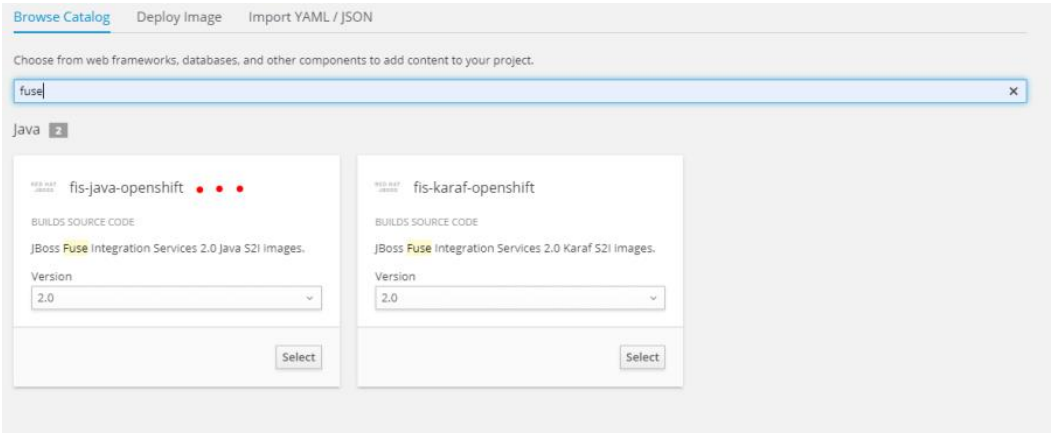


Création d'un projet en OpenShift :

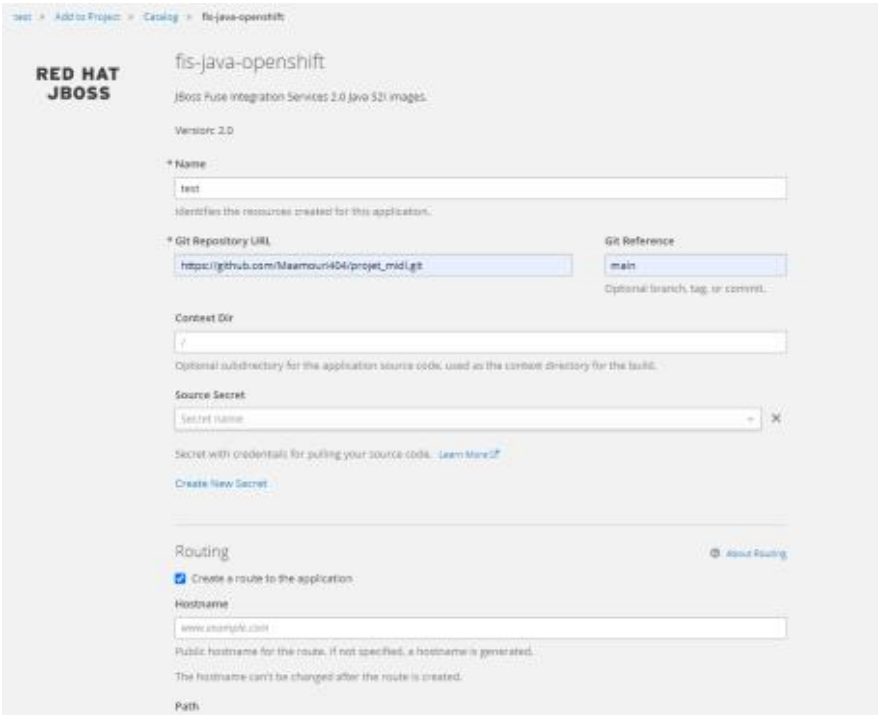


Choix de type de l'image (l'enveloppe) de notre projet :

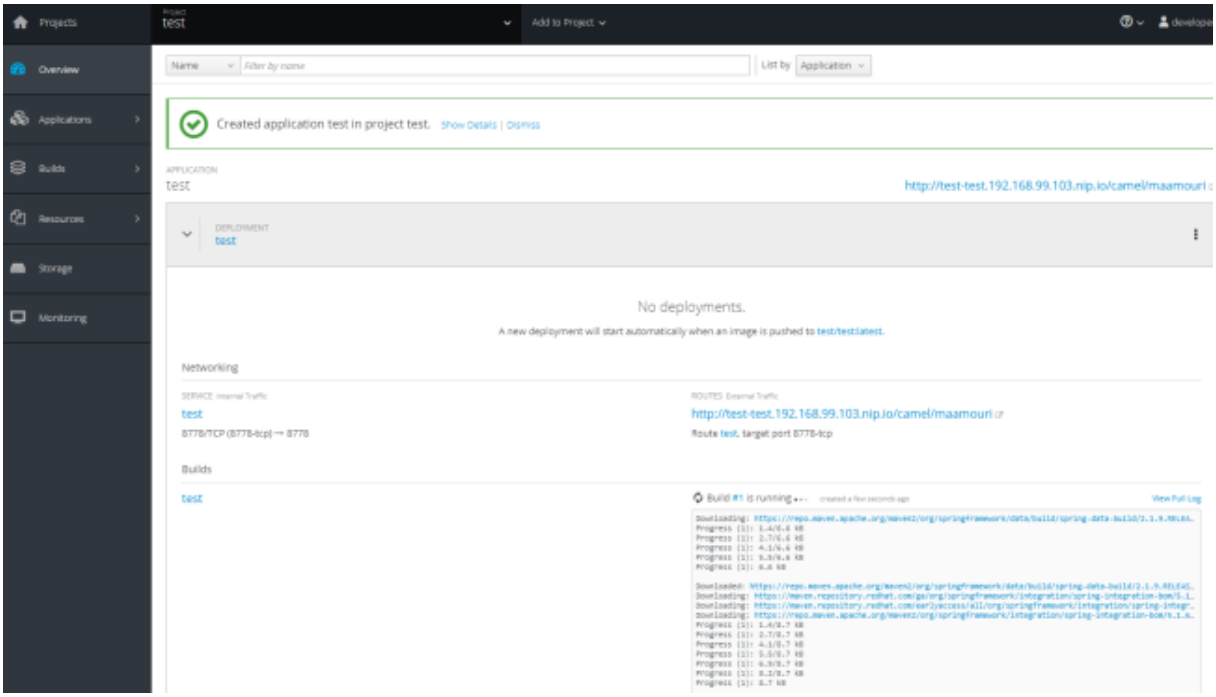




Configuration de l'image :



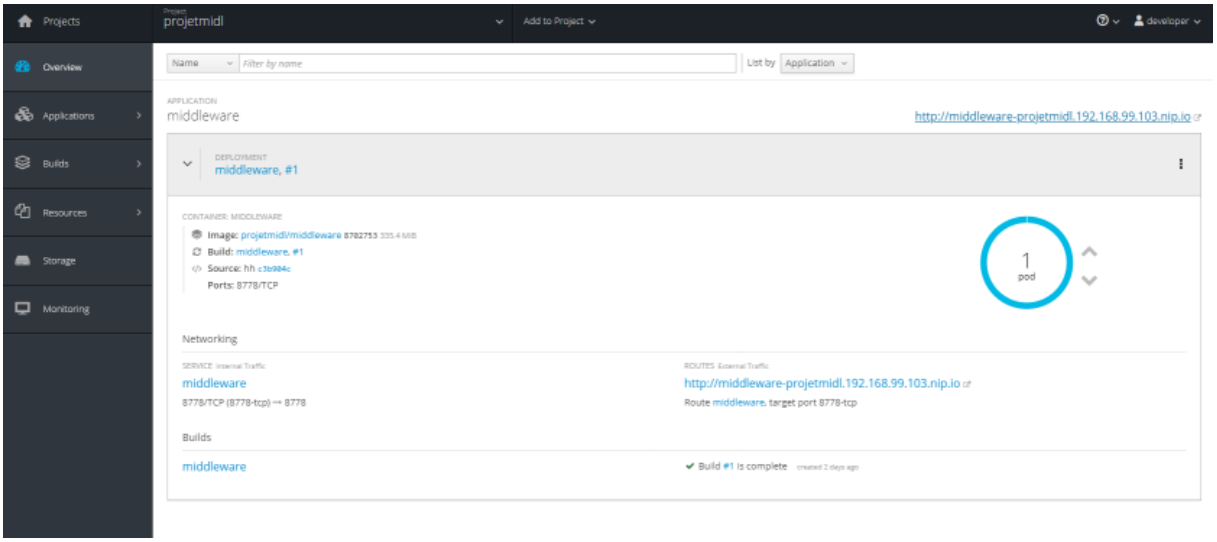
Building de projet :

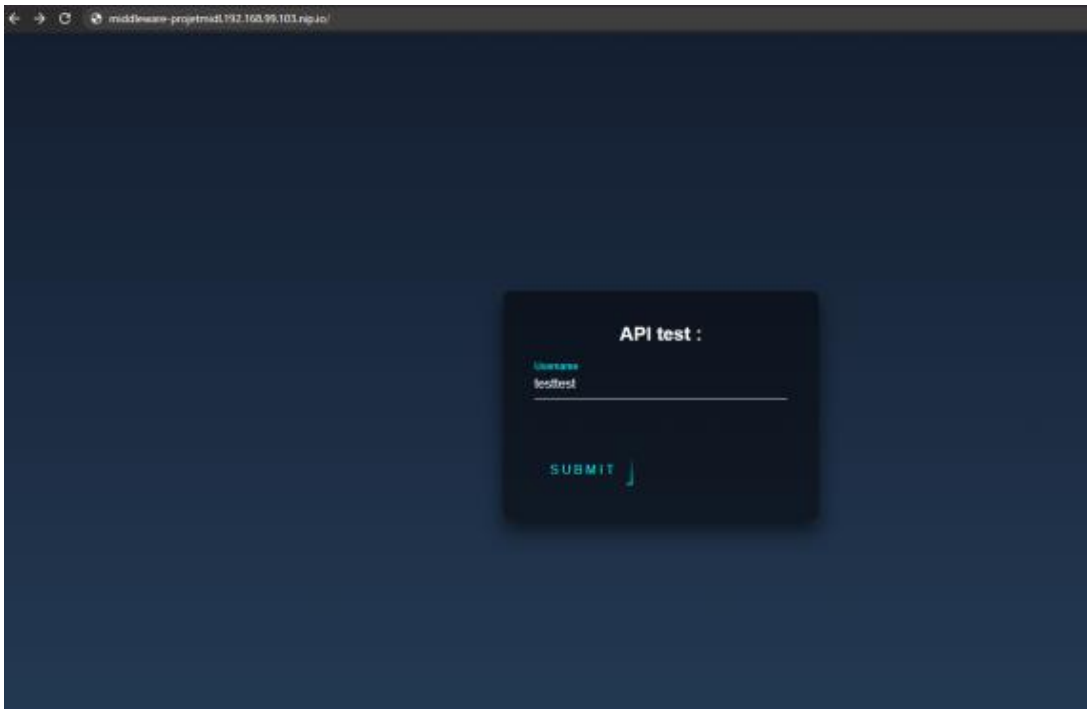


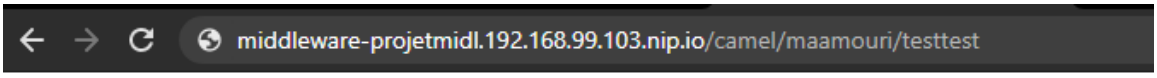
la fin de build et le deploiement de projet :

```
Downloaded: https://repo.maven.apache.org/maven2/com/google/guava/guava/11.0.2/guava-11.0.2.jar (1.6 MB at 491 kB/s)
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 10:21 min
[INFO] Finished at: 2021-01-29T20:54:36Z
[INFO] Final Memory: 55M/2174M
[INFO] ------------------------------------------------------------------------
Copying Maven artifacts from /tmp/src/target to /deployments ...
Running: cp *.jar /deployments
... done
Pushing image 172.30.1.1:5000/test/test:latest ...
Pushed 0/6 layers, 0% complete
Pushed 1/6 layers, 19% complete
Pushed 2/6 layers, 38% complete
Pushed 3/6 layers, 61% complete
Pushed 4/6 layers, 91% complete
Pushed 5/6 layers, 93% complete
Pushed 6/6 layers, 100% complete
Push successful
```

On va ouvrir le lien généré par OpenShift







{"greetings":"username: testtest"}