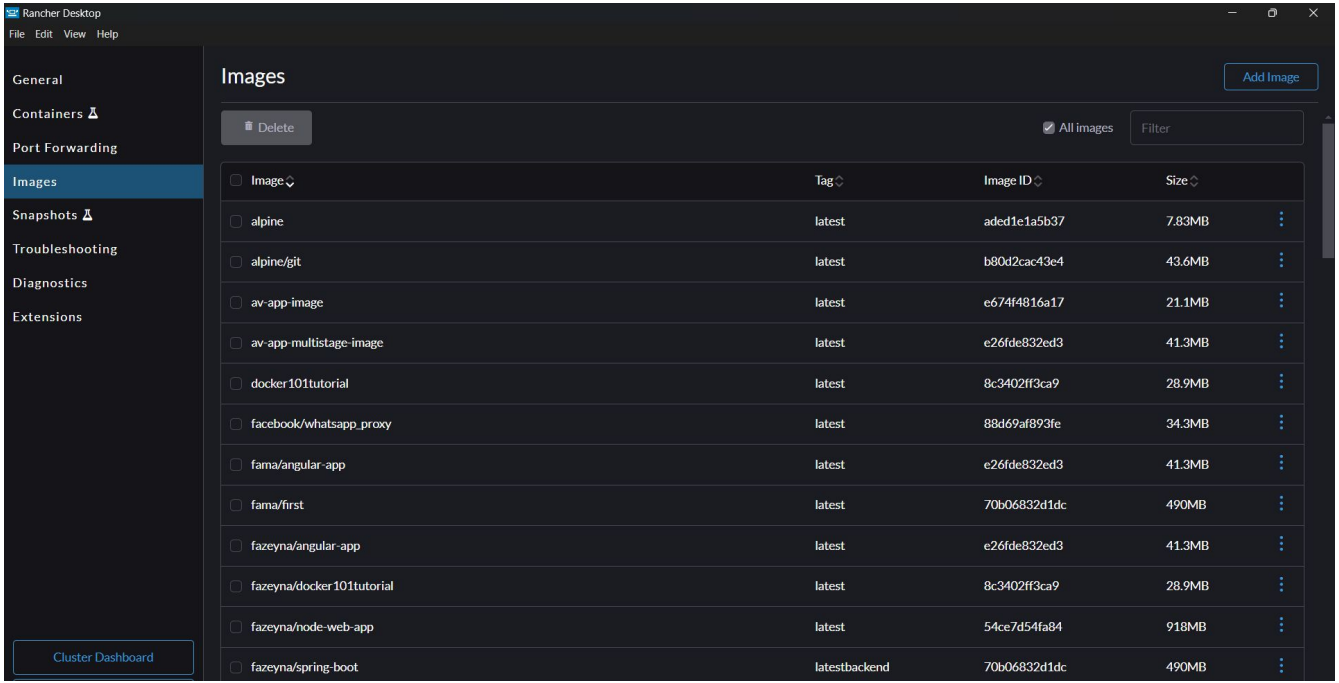
TP4 Projet K8S - helm - GitLab - stock-ms

Vous allez utiliser le document partagé dans classroom pour mettre en place une pipeline CICD de déploiement avec heml

Ressources : https://gitlab.com/cicd-devops3/k8s-data

1- Installation de RANCHER DESKTOP

https://docs.rancherdesktop.io/getting-started/installation/

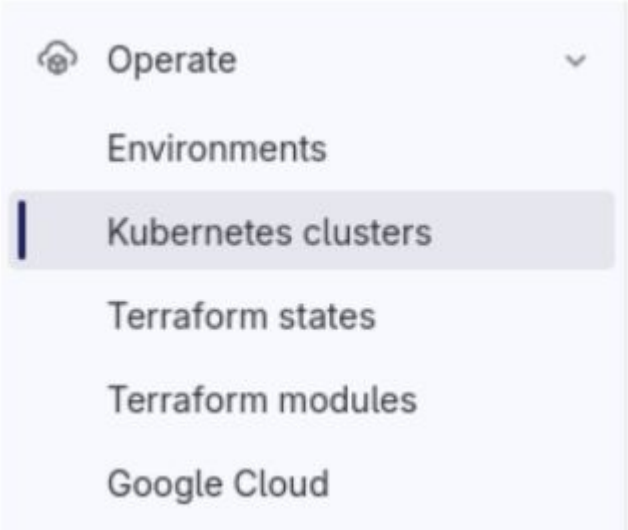


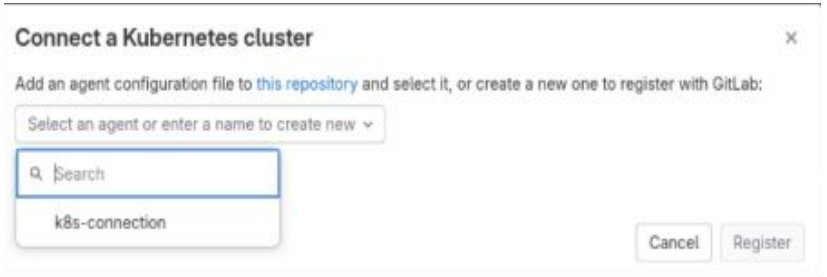
1- Vérifions les nodes

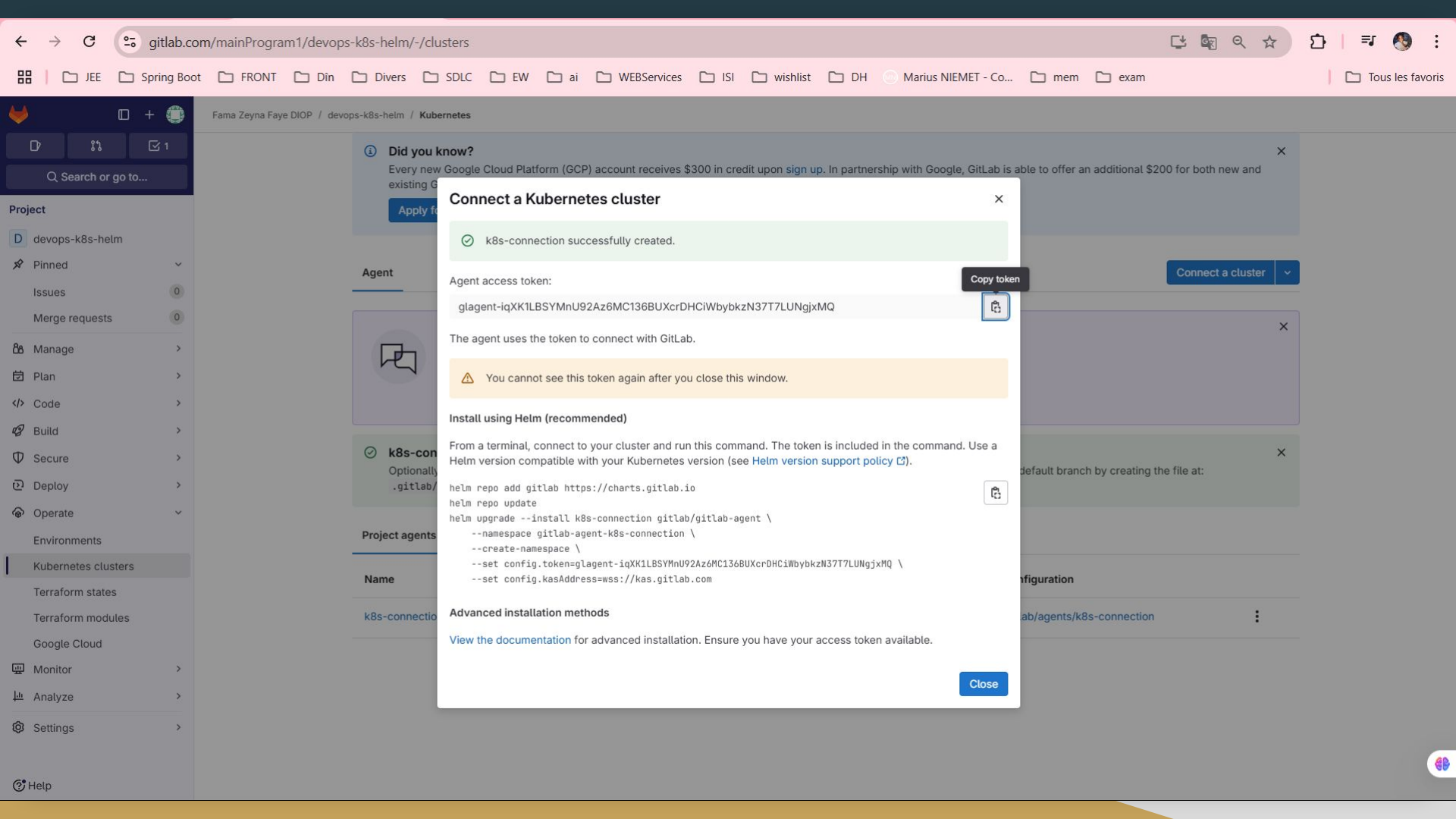
```
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles fonctionnalités et améliorations

PS C:\Users\fazeyna> kubectl get nodes
NAME              STATUS   ROLES                  AGE    VERSION
desktop-c885p0b   Ready    control-plane,master   133m   v1.31.5+k3s1
PS C:\Users\fazeyna>
PS C:\Users\fazeyna>
```

1- Installation d’un agent gitlab dans un cluster kubernetes

Name	Last commit	Last update
.gitlab/agents/k8s-connection	Add new file	11 minutes ago






gitlab.com/mainProgram1/devops-k8s-helm/-/clusters
Fama Zeyna Faye DIOP / devops-k8s-helm / Kubernetes
Did you know?
Every new Google Cloud Platform (GCP) account receives $300 in credit upon sign up. In partnership with Google, GitLab is able to offer an additional $200 for both new and existing G
Apply fo
Agent
Connect a cluster
Project agents
Name
k8s-connectio
ab/agents/k8s-connection
k8s-con
Optionally
.gitlab/
default branch by creating the file at:
Connect a Kubernetes cluster
k8s-connection successfully created.
Agent access token:
Copy token
glagent-iqXK1LBSYMnU92Az6MC136BUXcrDHCiWbybkzN37T7LUNgjxMQ
The agent uses the token to connect with GitLab.
You cannot see this token again after you close this window.
Install using Helm (recommended)
From a terminal, connect to your cluster and run this command. The token is included in the command. Use a Helm version compatible with your Kubernetes version (see Helm version support policy).
helm repo add gitlab https://charts.gitlab.io
helm repo update
helm upgrade --install k8s-connection gitlab/gitlab-agent \
--namespace gitlab-agent-k8s-connection \
--create-namespace \
--set config.token=glagent-iqXK1LBSYMnU92Az6MC136BUXcrDHCiWbybkzN37T7LUNgjxMQ \
--set config.kasAddress=wss://kas.gitlab.com
Advanced installation methods
View the documentation for advanced installation. Ensure you have your access token available.
Close
Project
devops-k8s-helm
Pinned
Issues
Merge requests
Manage
Plan
Code
Build
Secure
Deploy
Operate
Environments
Kubernetes clusters
Terraform states
Terraform modules
Google Cloud
Monitor
Analyze
Settings
Help

1- Installation d’un agent gitlab dans un cluster kubernetes

```
Common actions for Helm:

- helm search:    search for charts
- helm pull:      download a chart to your local directory to view
- helm install:   upload the chart to Kubernetes
- helm list:      list releases of charts

Environment variables:
```

```
PS C:\Users\fazeyna> helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "gitlab" chart repository
Update Complete. ⎈Happy Helming!⎈
PS C:\Users\fazeyna>
```

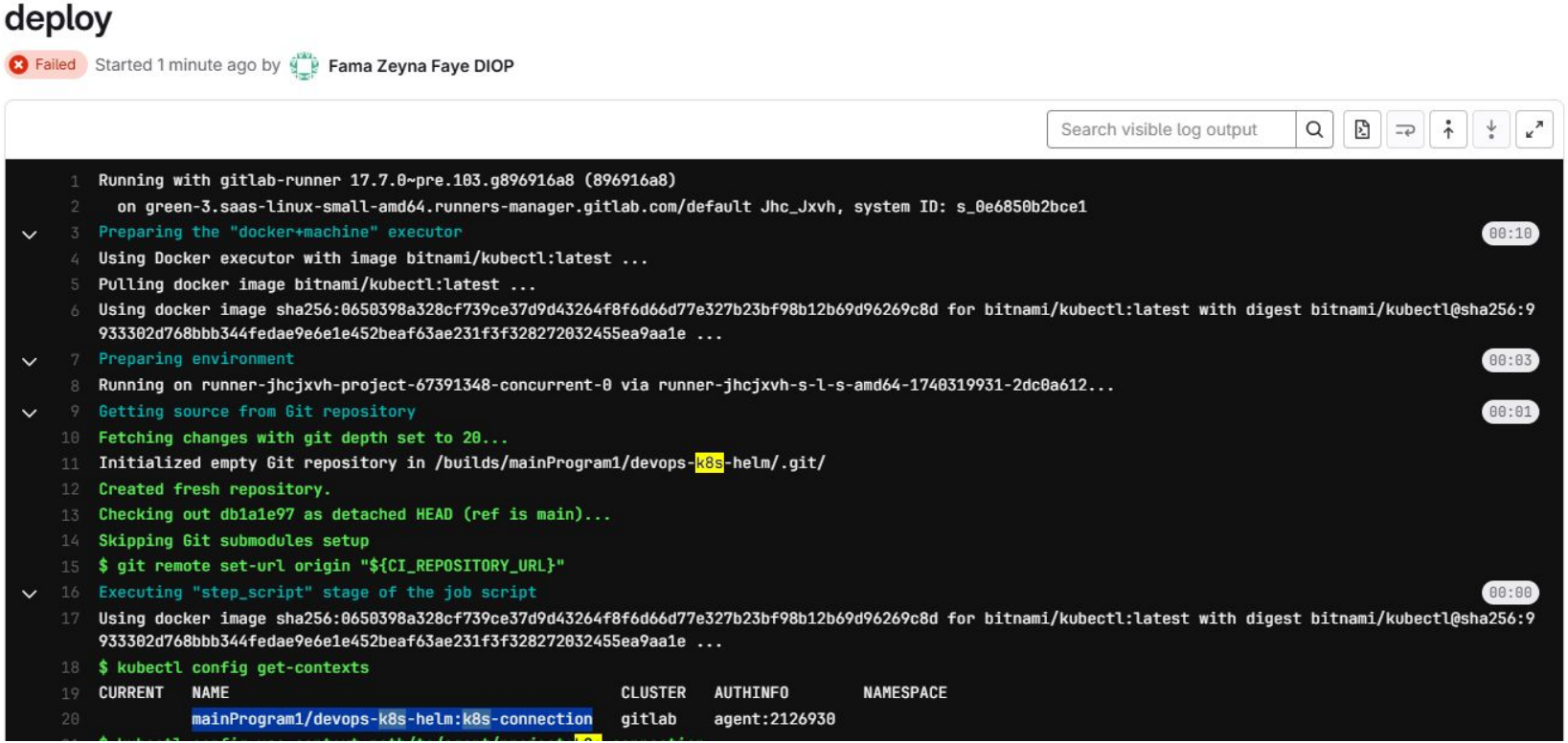
1- Installation d’un agent gitlab dans un cluster kubernetes

```
PS C:\Users\fazeyna> helm upgrade --install k8s-connection gitlab/gitlab-agent --namespace gitlab-agent-k8s-connection  --create-namespace  --set config.tok
en=glagent-iqXK1LBSYMnU92Az6MC136BUXcrDHCiWbybkzN37T7LUNgjxMQ --set config.kasAddress=wss://kas.gitlab.com
Release "k8s-connection" does not exist. Installing it now.
NAME: k8s-connection
LAST DEPLOYED: Sun Feb 23 14:00:17 2025
NAMESPACE: gitlab-agent-k8s-connection
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
Thank you for installing gitlab-agent.

Your release is named k8s-connection.

## Changelog

### 1.17.0

- The default replica count has been increased from `1` to `2` to allow a zero-downtime upgrade experience.
  You may use `--set replicas=1` to restore the old default behavior.
PS C:\Users\fazeyna>
```

Project agents

Name	Connection status	Last contact	Version	Agent ID	Configuration
k8s-connection	Connected	just now	17.9.0	2126930	.gitlab/agents/k8s-connection

2- Test de la connexion entre gitlab et k8s

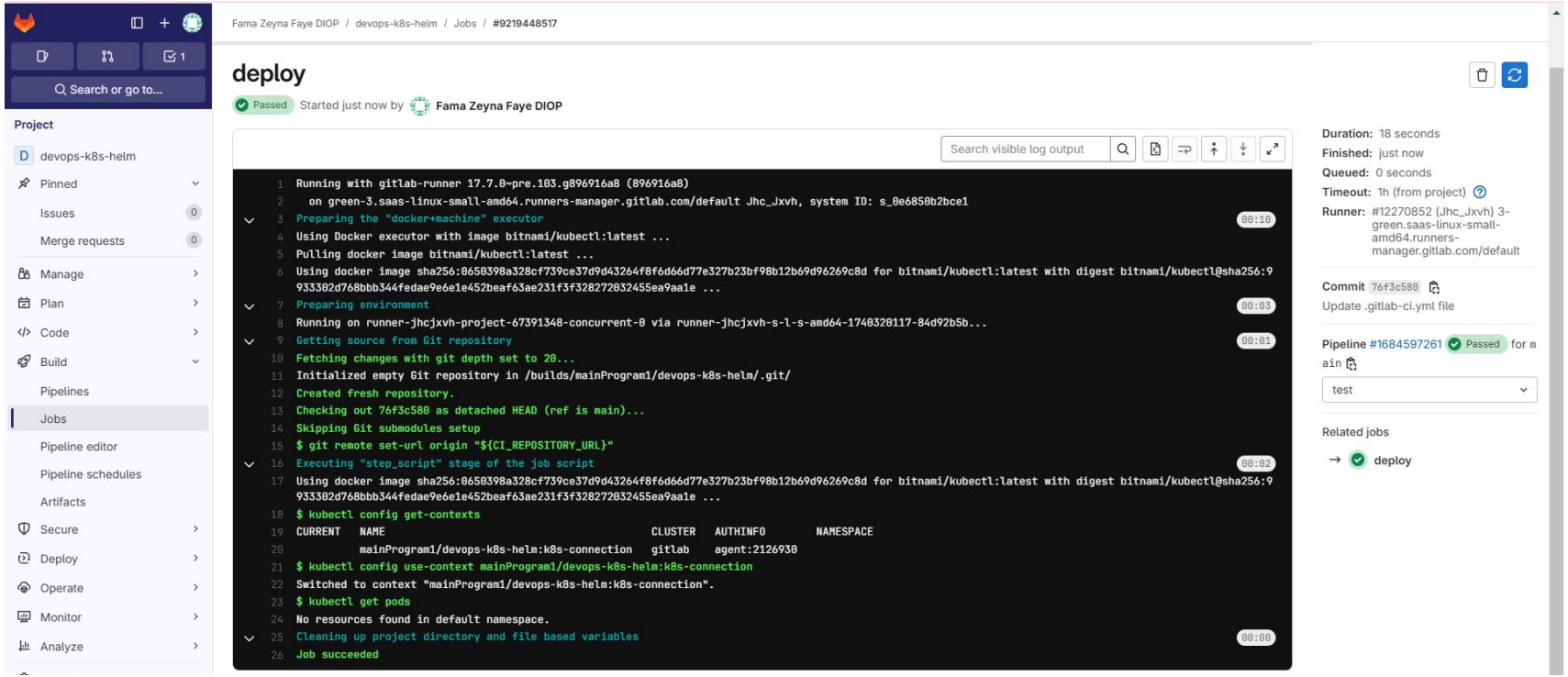


2- Test de la connexion entre gitlab et k8s

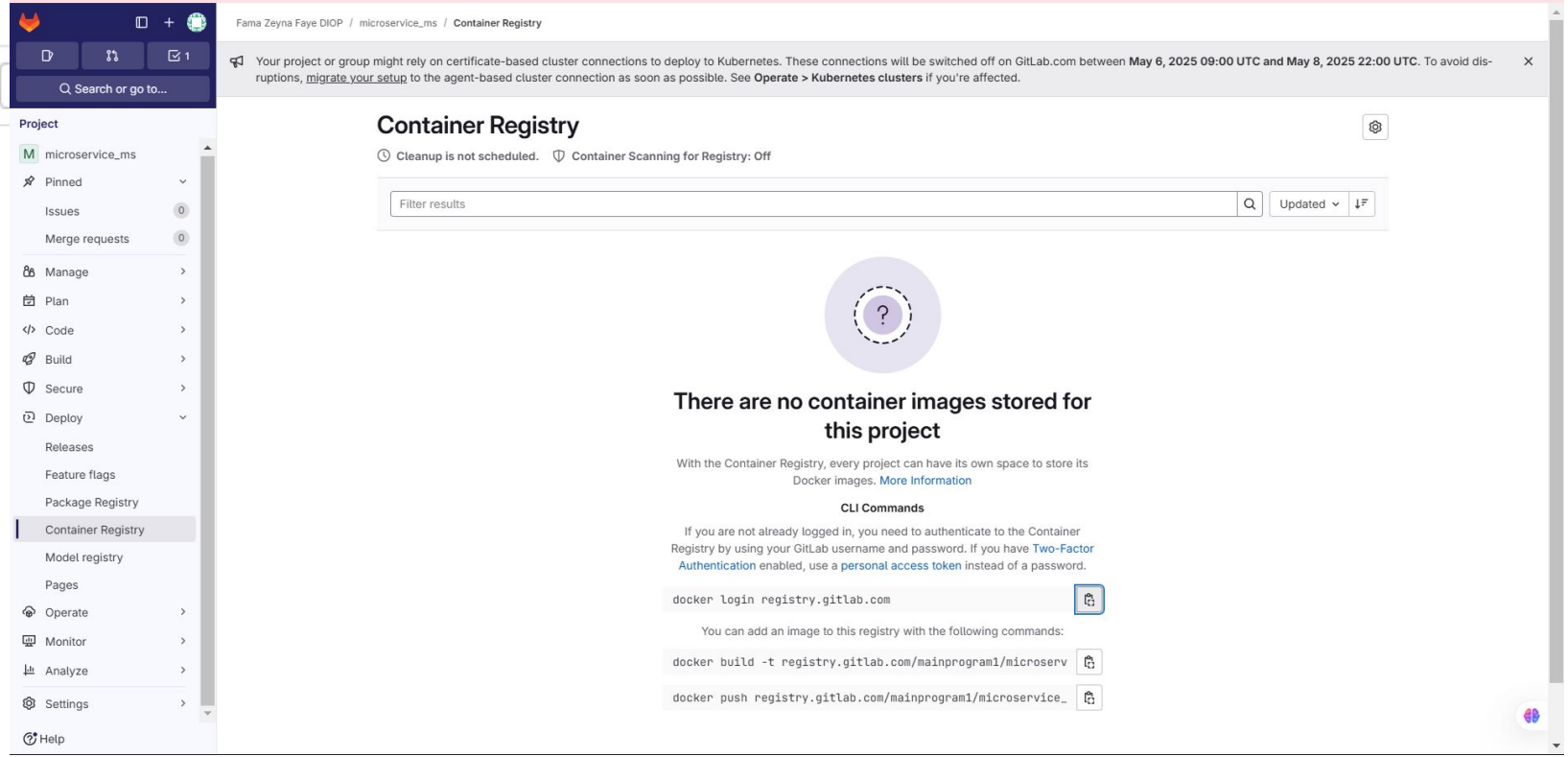
CI/CD Catalog | Help

```
deploy:
  image:
    name: bitnami/kubectl:latest
    entrypoint: ['']
  script:
    - kubectl config get-contexts
    - kubectl config use-context mainProgram1/devops-k8s-helm:k8s-connection
    - kubectl get pods
```

2- Test de la connexion entre gitlab et k8s



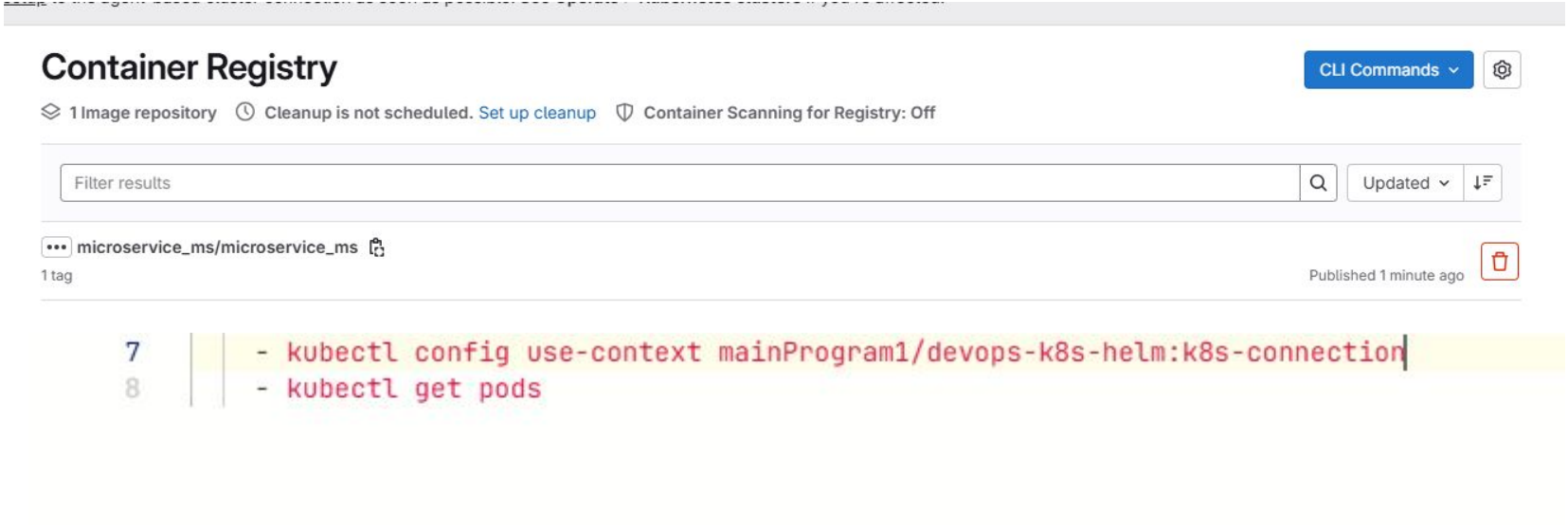
2- Préparation de k8s et création de charts dans helm



2- Préparation de k8s et création de charts dans helm

```
PS C:\Users\fazeyna> docker login registry.gitlab.com
Username: mainProgram1
Password:

Login Succeeded
PS C:\Users\fazeyna> docker build -t registry.gitlab.com/mainprogram1/microservice_ms .
[+] Building 0.6s (1/1) FINISHED                                                                                    docker:desktop-linux
 => [internal] load build definition from Dockerfile                                                                                0.3s
 => => transferring dockerfile: 2B                                                                                                  0.0s
ERROR: failed to solve: failed to read dockerfile: open Dockerfile: no such file or directory

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/e6rrdp8qufrqkamdaiadfyc08
PS C:\Users\fazeyna>
PS C:\Users\fazeyna>
PS C:\Users\fazeyna> docker push registry.gitlab.com/mainprogram1/microservice_ms
Using default tag: latest
The push refers to repository [registry.gitlab.com/mainprogram1/microservice_ms]
An image does not exist locally with the tag: registry.gitlab.com/mainprogram1/microservice_ms
PS C:\Users\fazeyna> docker push registry.gitlab.com/mainprogram1/microservice_ms:lastest
The push refers to repository [registry.gitlab.com/mainprogram1/microservice_ms]
An image does not exist locally with the tag: registry.gitlab.com/mainprogram1/microservice_ms
PS C:\Users\fazeyna>
PS C:\Users\fazeyna>
PS C:\Users\fazeyna> $dockerConfig = @{
>>     auths = @{
>>         "registry.gitlab.com" = @{
>>             username = "mainProgram1"
>>             password = "MonCompteGithubSA2122"
>>             email = "fazeyfadiop@gmail.com"
>>             auth = [System.Convert]::ToBase64String([System.Text.Encoding]::UTF8.GetBytes("${mainProgram1}:${MonCompteGithubSA2122}"))
>>         }
>>     }
>> } | ConvertTo-Json -Compress
PS C:\Users\fazeyna> $base64Config = [System.Convert]::ToBase64String([System.Text.Encoding]::UTF8.GetBytes($dockerConfig))
PS C:\Users\fazeyna> Write-Output $base64Config
eyJhdXRocyI6eyJyZWdpc3RyeS5naXRsYWIuY29tIjp7InVzZXJuYW1lIjoibWFpblByb2dyYW0xIiwiZW1haWwiOiJmYXpleWZhZGlvcEBnbWFpbC5jb20iLCJwYXNzd29yZCI6Ik1vbkNvbXB0ZUdpdGh1
```

2- Préparation de k8s et création de charts dans helm



3- CI-CD pour stock-ms

.gitlab-ci.yml +14 −1 View file @ dbdabecd

```
stages:
    - build
    - containerize

build_jar:
  image: maven:3.8-openjdk-17
  stage: build
  script:
    - mvn clean package
  artifacts:
    paths:
      - target/stock-ms.jar

build_image:
  image: docker
  stage: build
  stage: containerize
  services:
    - docker:dind
  needs:
    - build_jar
  script:
    - echo "$CI_REGISTRY_PASSWORD" | docker login $CI_REGISTRY -u $CI_REGISTRY_USER --password-stdin
    - docker build -t $CI_REGISTRY/mainprogram1/microservice_ms/microservice_ms:latest .
```

4- Création du chart et mise en place du template

```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS> cd .\helm\
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> helm create test-stock-ms
Creating test-stock-ms
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm>
```

```
    Répertoire : C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm\test-stock-ms


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        23/02/2025     15:26                charts
d-----        23/02/2025     15:26                templates
-a----        23/02/2025     15:26            349 .helmignore
-a----        23/02/2025     15:26           1149 Chart.yaml
-a----        23/02/2025     15:26           4299 values.yaml
```

4- Création du chart et mise en place du template

```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS> cd .\helm\
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> helm create test-stock-ms
Creating test-stock-ms
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm>
```

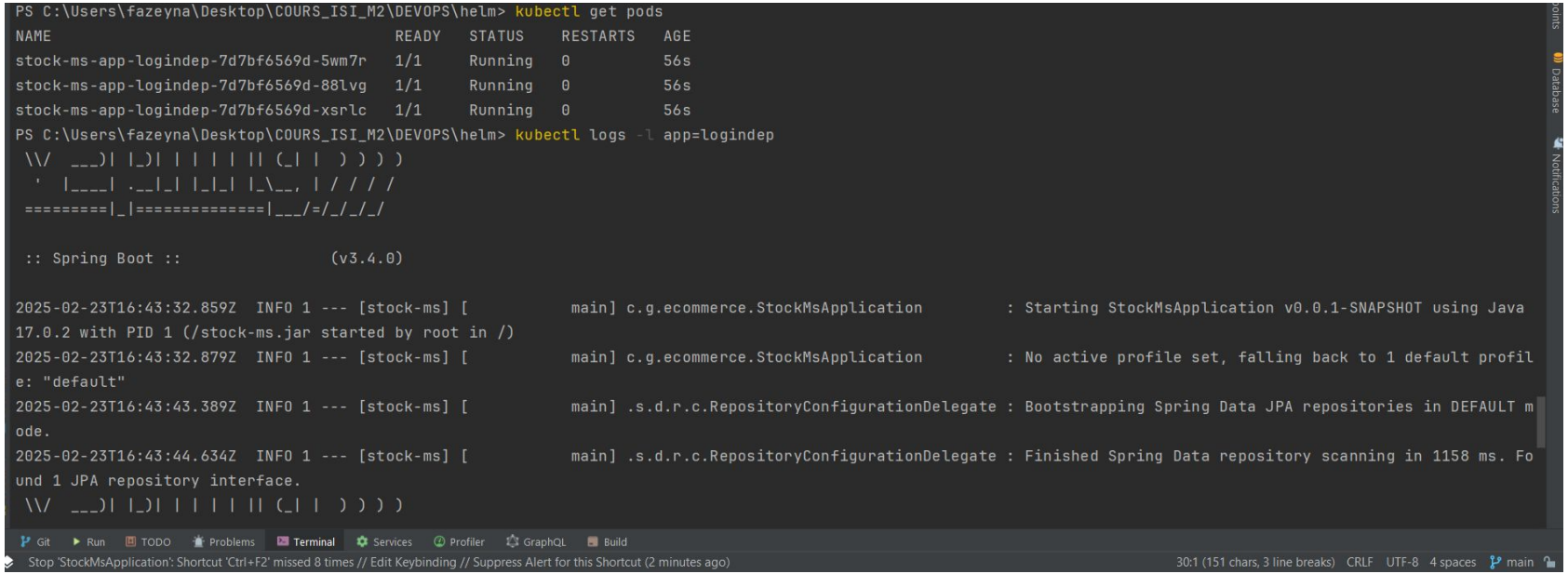
```
    entrypoint: ['']
  script:
```

```
    Répertoire : C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm\test-stock-ms


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        23/02/2025     15:26                charts
d-----        23/02/2025     15:26                templates
-a----        23/02/2025     15:26            349 .helmignore
-a----        23/02/2025     15:26           1149 Chart.yaml
-a----        23/02/2025     15:26           4299 values.yaml
```

4- Création du chart et mise en place du template

```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> helm install stock-ms-app .\test-stock-ms
NAME: stock-ms-app
LAST DEPLOYED: Sun Feb 23 15:51:18 2025
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> kubectl get pods
NAME                                  READY   STATUS    RESTARTS   AGE
stock-ms-app-logindep-6684d8664-m6nqn   1/1     Running   0          14s
stock-ms-app-logindep-6684d8664-qkl5v   1/1     Running   0          14s
stock-ms-app-logindep-6684d8664-sxqjk   1/1     Running   0          14s
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm>
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> kubectl get services
NAME                    TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)   AGE
kubernetes              ClusterIP   10.43.0.1       <none>        443/TCP   4h8m
stock-ms-app-webapp-svc   ClusterIP   10.43.162.245   <none>        80/TCP    73s
```

4- Création du chart et mise en place du template



5- Test du déploiement

```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\helm> kubectl get svc stock-ms-app-webapp-svc
NAME                       TYPE       CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
stock-ms-app-webapp-svc    NodePort   10.43.119.187   <none>        8080:32574/TCP   78s
```

```
2   image:
```