Nom Complet : ***ALPHA SOULEYMANE BAH*** *Encadreur* ***: M. N'Gor Seck***	**TAF :** Vous allez déployer l'application stock-ms dans minikube en mode ligne de commande dans un namespace nommé jee.	***Année :*** *2024-2025* *Groupe ISI Dakar (SN)* ***Niveau:*** *M2GL*

Les étapes à suivre de a-z sont :

1. Prérequis

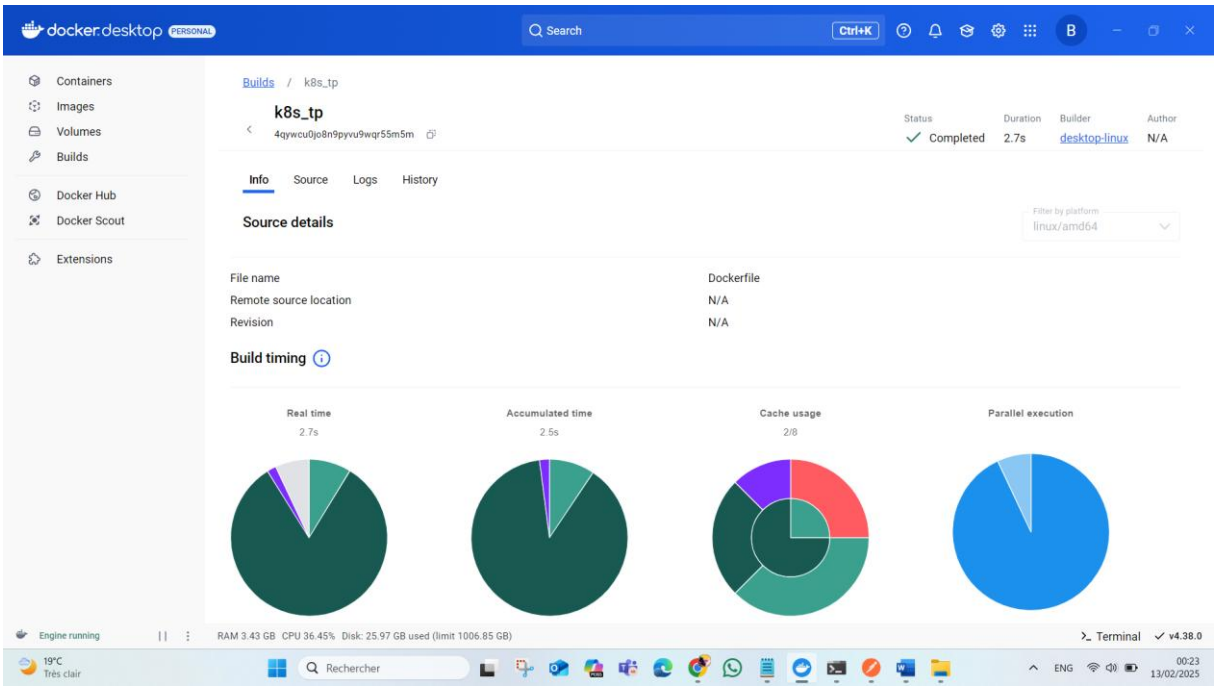
Assurez-vous d'avoir installé et configuré correctement :

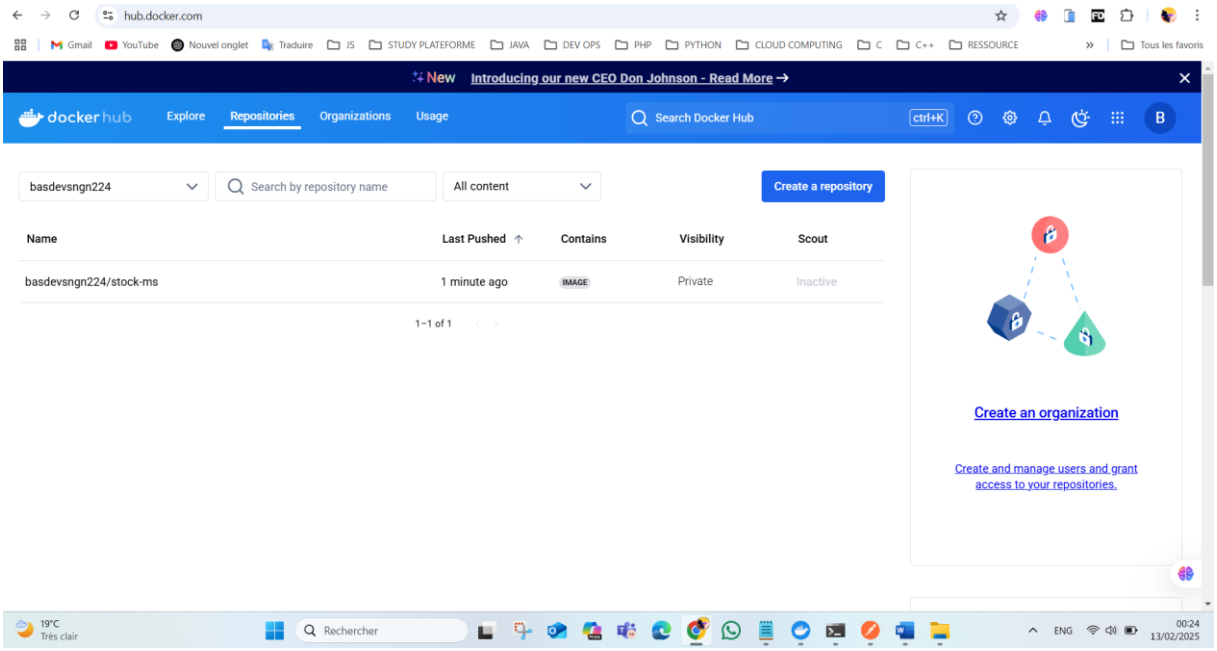
- **Minikube** : Installation Minikube
- **Kubectl** : Installation kubectl
- **Docker Desktop** (déjà installé) avec **Kubernetes activé**
- **Hyper-V ou WSL 2** (si nécessaire pour Minikube)

```
PS C:\Users\LENOVO>  minikube version
minikube version: v1.34.0
commit: 210b148df93a80eb872ecbeb7e35281b3c582c61
PS C:\Users\LENOVO>
PS C:\Users\LENOVO> kubectl version
Client Version: v1.31.4
Kustomize Version: v5.4.2
Server Version: v1.31.0
PS C:\Users\LENOVO>
```

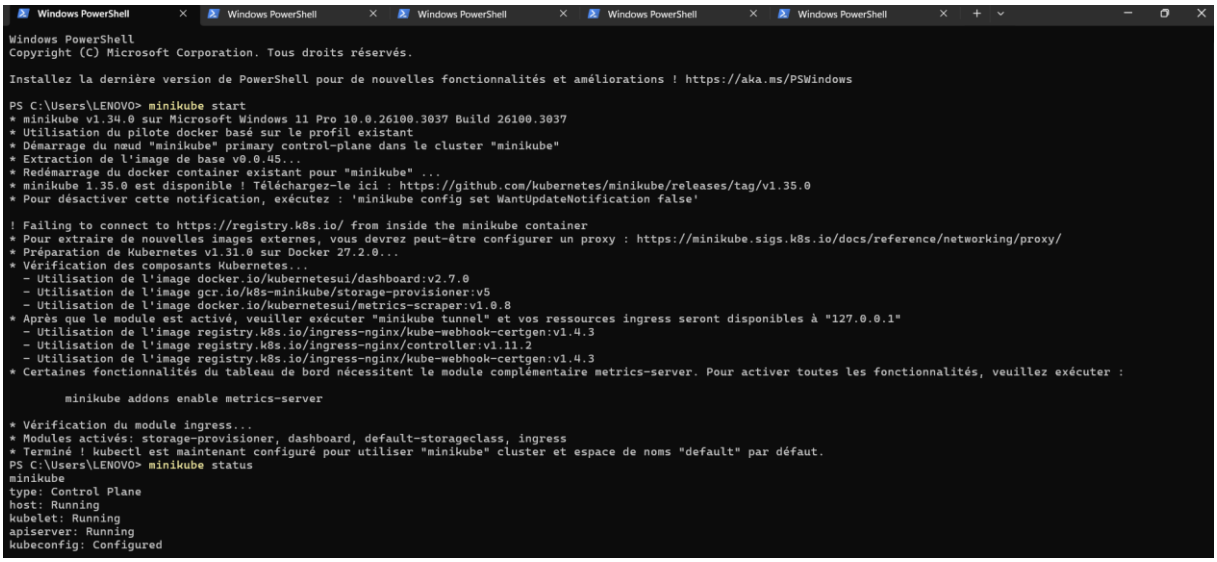
2. Build de l'application et push sur docker hub

```
View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/4qywcu0jo8n9pyvu9wqr55m5m
PS D:\MASTER_II_GL\DEV_OPS\k8s_tp> docker push basdevsngn224
Using default tag: latest
The push refers to repository [docker.io/library/basdevsngn224]
An image does not exist locally with the tag: basdevsngn224
PS D:\MASTER_II_GL\DEV_OPS\k8s_tp> docker push basdevsngn224/stock-ms:latest
The push refers to repository [docker.io/basdevsngn224/stock-ms]
e3d1bc399bc1: Layer already exists
6f9ff1c5de04: Layer already exists
6be690267e47: Layer already exists
13a34b6fff78: Layer already exists
9c1b6dd6c1e6: Layer already exists
latest: digest: sha256:a50956dac165ea3207131d75c9f5f323248c1ea96aa0762e654801ff6ec5c92f size: 1371
PS D:\MASTER_II_GL\DEV_OPS\k8s_tp>
```





3. Lançons Minikube et Vérification



3.2. Créer le Namespace jee et Vérification

```
PS C:\Users\LENOVO> kubectl get namespaces
NAME                   STATUS   AGE
default                Active   7d
devops                 Active   35h
ingress-nginx          Active   35h
jee                    Active   13h
kube-node-lease        Active   7d
kube-public            Active   7d
kube-system            Active   7d
kubernetes-dashboard   Active   7d
PS C:\Users\LENOVO> kubectl delete namespaces jee
namespace "jee" deleted
PS C:\Users\LENOVO> kubectl create namespace jee
```

```
PS C:\Users\LENOVO> kubectl get namespaces
NAME                   STATUS   AGE
default                Active   7d
devops                 Active   35h
ingress-nginx          Active   35h
jee                    Active   21m
kube-node-lease        Active   7d
kube-public            Active   7d
kube-system            Active   7d
kubernetes-dashboard   Active   7d
PS C:\Users\LENOVO>
```

4. Création d'une imagePullSecret pour Docker Hub et Vérification

```
PS C:\Users\LENOVO> kubectl create secret docker-registry docker-hub-secret `
>>   --docker-server=https://index.docker.io/v1/ `
>>   --docker-username=basdevsngn224 `
>>   --docker-password=dckr_pat_pyrgBvuL9d74k-lAHIVMWpf4AoY `
>>   --docker-email=bahalphasouleymane2019@gmail.com `
>>   --namespace=jee
secret/docker-hub-secret created
```

```
PS C:\Users\LENOVO> kubectl get secrets -n jee
NAME                TYPE                             DATA   AGE
docker-hub-secret   kubernetes.io/dockerconfigjson   1      23m
PS C:\Users\LENOVO>
```

5. Déployer l'application stock-ms

```
PS C:\Users\LENOVO> kubectl create deployment stock-ms --image=basdevsngn224/stock-ms:latest --namespace=jee
deployment.apps/stock-ms created
```

5.1. Ajoutons 2 réplicas :

```
PS C:\Users\LENOVO> kubectl scale deployment stock-ms --replicas=2 -n jee
deployment.apps/stock-ms scaled
```

6. Associons le imagePullSecret au déploiement

```
PS C:\Users\LENOVO> kubectl patch deployment stock-ms -n jee --type='json' -p='[
>>   {
>>     "op": "add",
>>     "path": "/spec/template/spec/imagePullSecrets",
>>     "value": [{"name": "docker-hub-secret"}]
>>   }
>> ]'
deployment.apps/stock-ms patched
```

7. Exposons l'application via un service et Verification

On expose le service sur le port 80 avec NodePort et target-port :8088 :

```
PS C:\Users\LENOVO> kubectl expose deployment stock-ms --type=NodePort --port=80 --target-port=8088 --name=stock-ms-service --namespace=jee
```

```
PS C:\Users\LENOVO> kubectl get svc -n jee
NAME               TYPE       CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
stock-ms-service   NodePort   10.97.250.109   <none>        80:30888/TCP   28m
PS C:\Users\LENOVO>
```

8. Vérification des pods

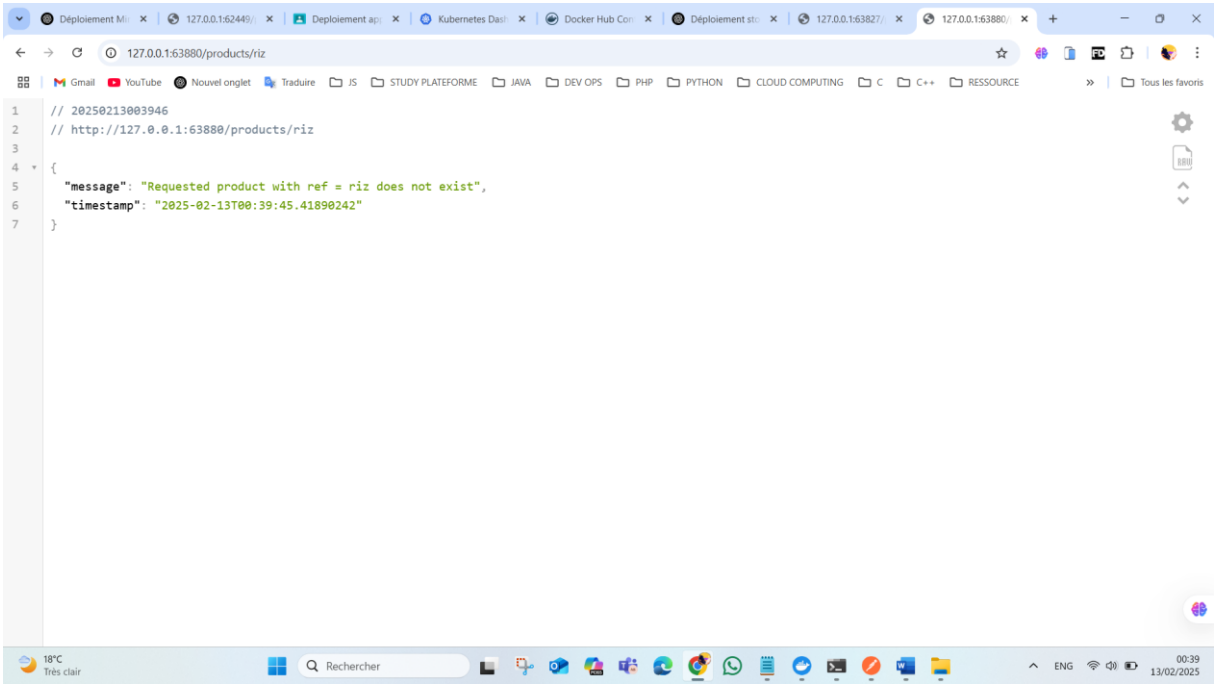
```
PS C:\Users\LENOVO> kubectl get pods -n jee
NAME                        READY   STATUS    RESTARTS   AGE
stock-ms-68b76c8878-kdvmm   1/1     Running   0          29m
stock-ms-68b76c8878-s6dkq   1/1     Running   0          29m
PS C:\Users\LENOVO>
```

9. Ouverture et Test de l'application

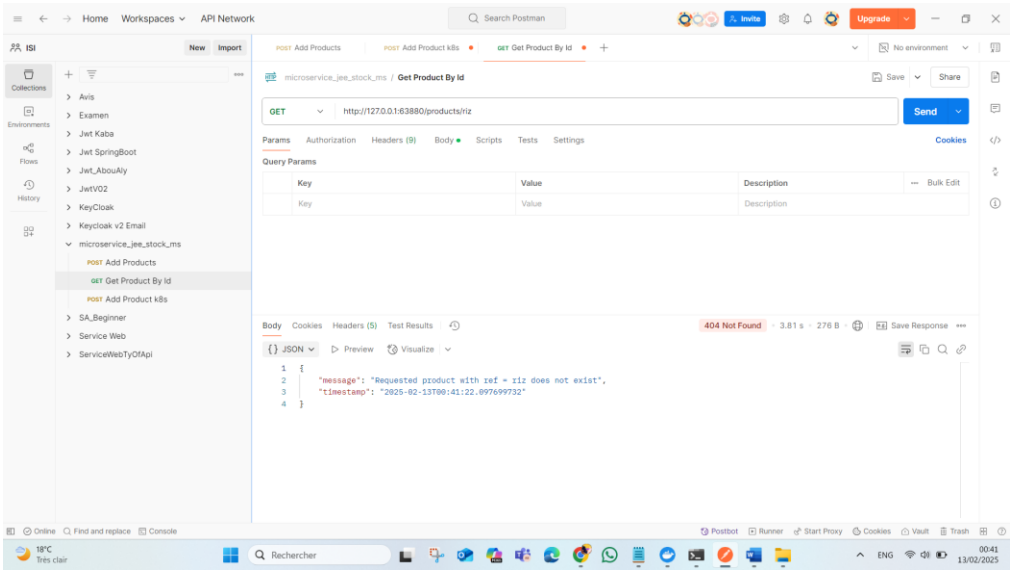
```
PS C:\Users\LENOVO> minikube service stock-ms-service -n jee --url
http://127.0.0.1:63880
! Comme vous utilisez un pilote Docker sur windows, le terminal doit être ouvert pour l'exécuter.
```

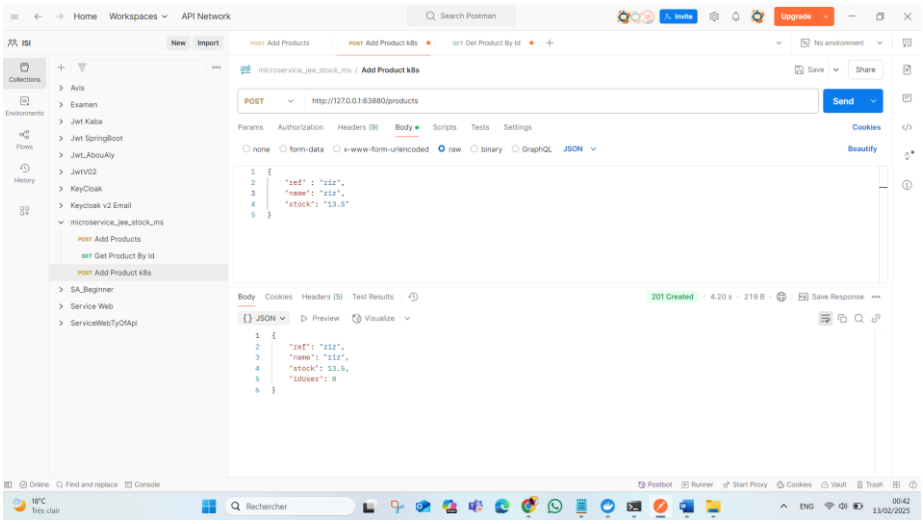
- ✓ **Sur le navigateur avant insertion sur postman**

Ref=riz

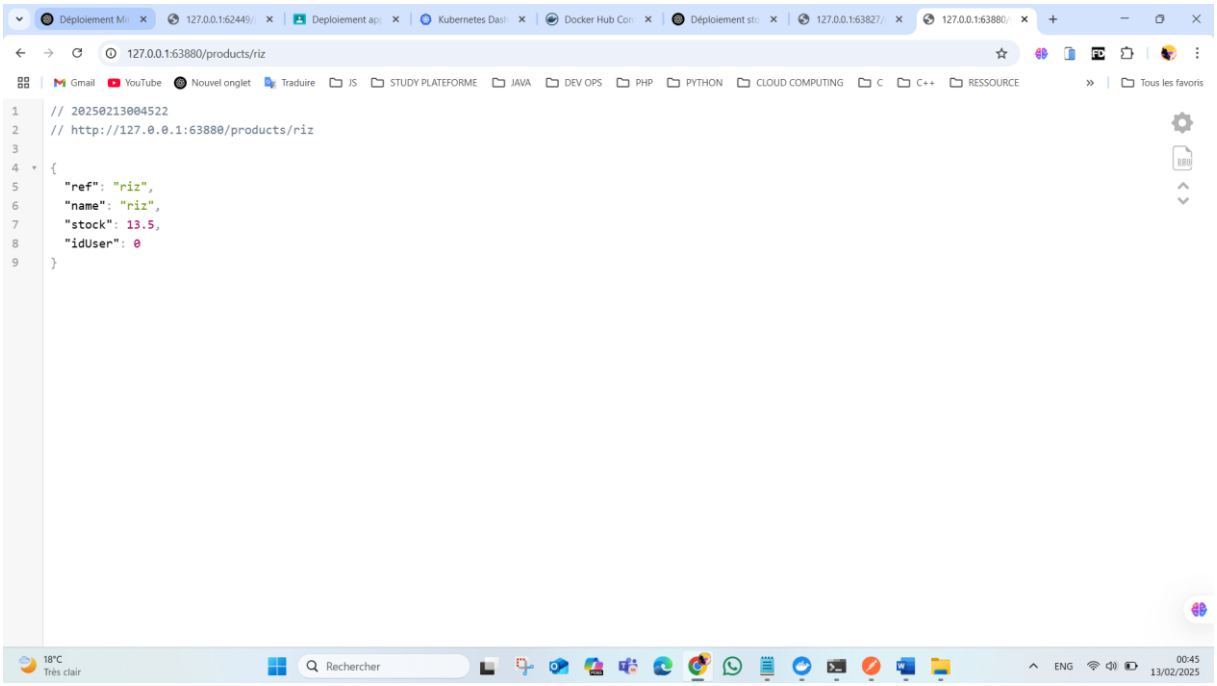


✓ **Insertion sur postman et test**
Sans succès car la ref = riz n'existe





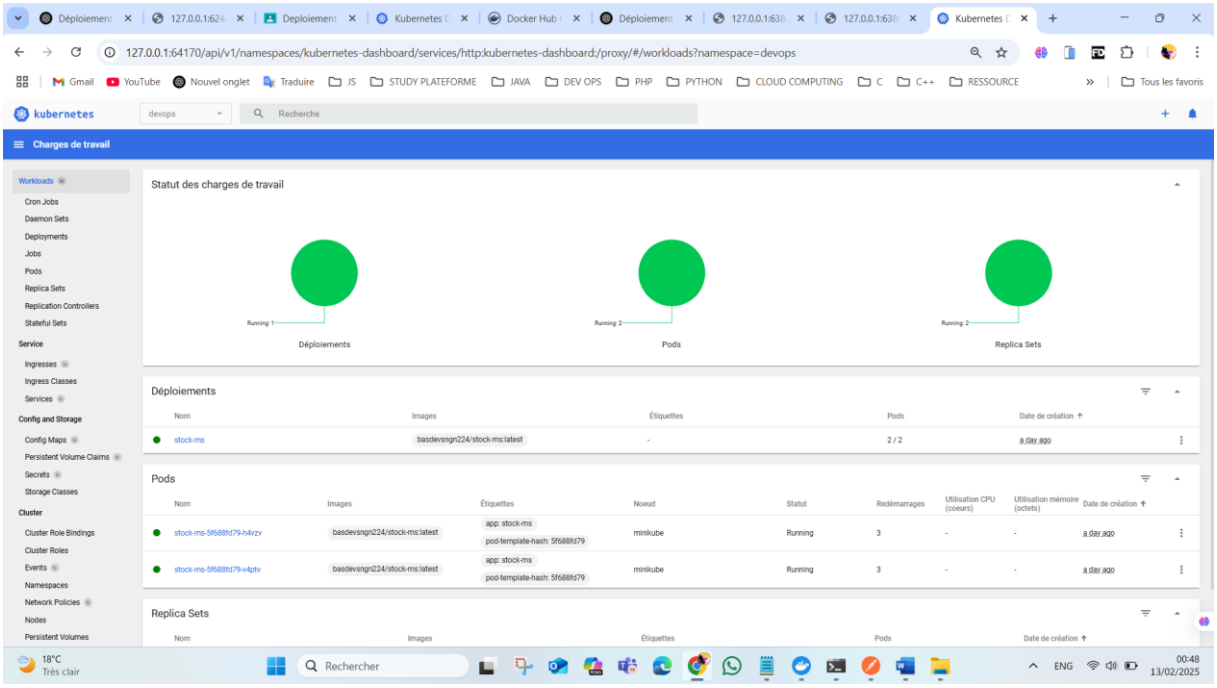
Ajout avec succès

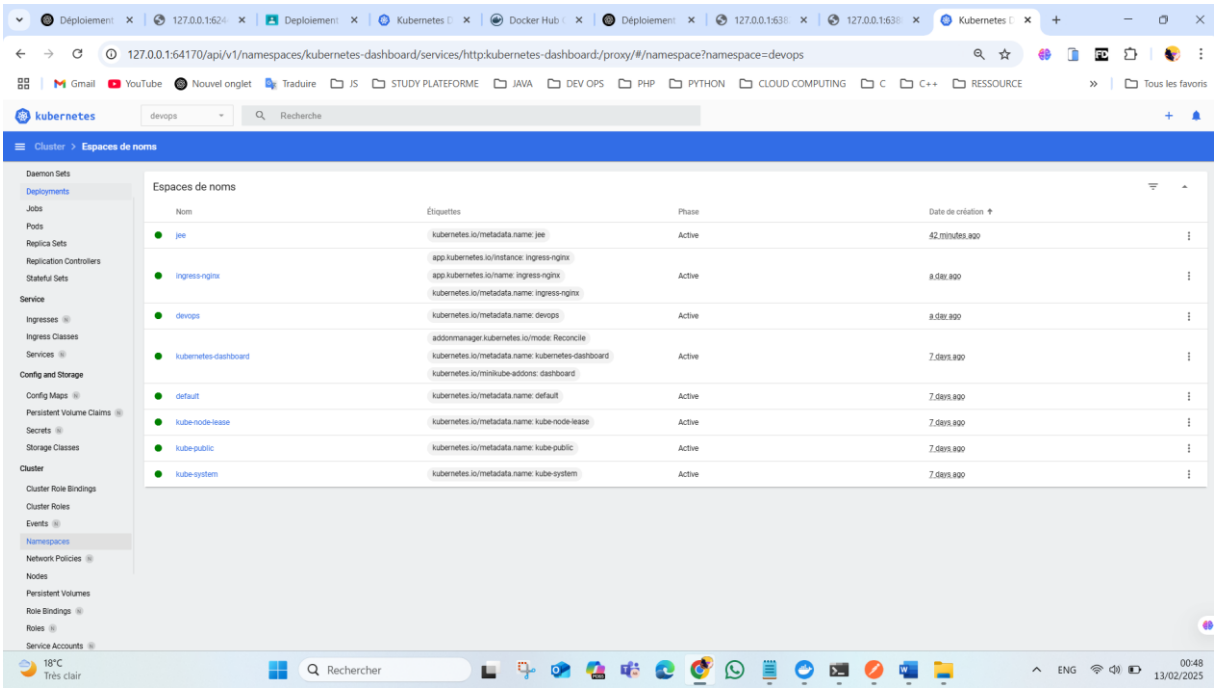


Récupération avec succès

Et enfin

Minikube Dashboard


127.0.0.1:64170/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/workloads?namespace=devops
kubernetes
Charges de travail
Statut des charges de travail
Déploiements
Pods
Replica Sets
Déploiements
stock-ms
Pods
stock-ms-5f688fd79-h4vzv
stock-ms-5f688fd79-v4ptv
Replica Sets


127.0.0.1:64170/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/namespace?namespace=devops
kubernetes
Cluster > Espaces de noms
Espaces de noms
jee
ingress-nginx
devops
kubernetes-dashboard
default
kube-node-lease
kube-public
kube-system

Merci !!!!