# LongHorn

## Déployer une solution de stockage

**Installation des prérequits sur TOUS LES NOEUDS :**

```
sudo apt-get update
sudo apt-get install -y open-iscsi nfs-common
sudo systemctl enable --now iscsid
```

**Installation de Helm sur le master 1 :**

```
curl -fsSL -o get_helm.sh https://raw.githubusercontent.com/helm/helm/main/scripts/get-helm-3
bash get_helm.sh
```

**Préparation et déploiement de Longhorn :**

```
helm repo add longhorn https://charts.longhorn.io
helm repo update
```

**Dans le fichier : /root/longhorn-values.yaml :**

```
defaultSettings:
  defaultDataPath: "/opt/longhorn"
```

**Déploiement de longhorn :**

```
helm install longhorn longhorn/longhorn \
  --namespace longhorn-system \
  --create-namespace \
```

```
  -f /root/longhorn-values.yaml
```

Résultat :

```
LAST DEPLOYED: Wed Apr 15 22:49:57 2026
NAMESPACE: longhorn-system
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
Longhorn is now installed on the cluster!

Please wait a few minutes for other Longhorn components such as CSI deployments, Engine Images, and
Instance Managers to be initialized.

Visit our documentation at https://longhorn.io/docs/
```

**Vérifications :**

```
kubectl get pods -n longhorn-system
```

```
NAME                                        READY   STATUS    RESTARTS      AGE
csi-attacher-5bcb65bf95-44fv7               1/1     Running   1 (66s ago)   2m27s
csi-attacher-5bcb65bf95-jvqxj               1/1     Running   0             2m27s
csi-attacher-5bcb65bf95-pgf8h               1/1     Running   0             2m27s
csi-provisioner-5d498c6944-d65sl            1/1     Running   0             2m27s
csi-provisioner-5d498c6944-dfl96            1/1     Running   0             2m27s
csi-provisioner-5d498c6944-wvmvs            1/1     Running   0             2m27s
csi-resizer-6c6474c996-9k94v                1/1     Running   0             2m26s
csi-resizer-6c6474c996-mjtsj                1/1     Running   0             2m27s
csi-resizer-6c6474c996-t94bs                1/1     Running   0             2m26s
csi-snapshotter-5cc5fb45d9-pxz5r            1/1     Running   0             2m26s
csi-snapshotter-5cc5fb45d9-swr6x            1/1     Running   0             2m26s
csi-snapshotter-5cc5fb45d9-wsdh6            1/1     Running   0             2m26s
engine-image-ei-75a03ec3-8r6p4              1/1     Running   0             3m23s
engine-image-ei-75a03ec3-nmbdp              1/1     Running   0             3m23s
engine-image-ei-75a03ec3-tl4x2              1/1     Running   0             3m23s
```

```
engine-image-ei-75a03ec3-vcq2q                  1/1     Running   0          3m23s
instance-manager-8904e58b7c0d881b70d813ddd4fe86f4   1/1     Running   0          2m54s
instance-manager-9176dd8e42515fe6146f445c7a1bc3ad   1/1     Running   0          2m53s
instance-manager-9805597396c5db2820496e3f125bc6bc   1/1     Running   0          2m53s
instance-manager-eaeed3ca06747e29c0f3aa8b9557c5c8   1/1     Running   0          2m53s
longhorn-csi-plugin-7vtx8                       3/3     Running   0          2m26s
longhorn-csi-plugin-brx6d                       3/3     Running   0          2m26s
longhorn-csi-plugin-d4fxc                       3/3     Running   0          2m26s
longhorn-csi-plugin-tsrrg                       3/3     Running   0          2m26s
longhorn-driver-deployer-746f54969f-9gmlb       1/1     Running   0          4m5s
longhorn-manager-b7q7k                          2/2     Running   0          4m5s
longhorn-manager-fk6f4                          2/2     Running   0          4m5s
longhorn-manager-xghbf                          2/2     Running   0          4m5s
longhorn-manager-xt4xq                          2/2     Running   0          4m5s
longhorn-ui-5df99fc477-7zt5s                    1/1     Running   0          4m5s
longhorn-ui-5df99fc477-tzwdp                    1/1     Running   0          4m5s
```

**Accéder à l'interface graphique :**

```
kubectl patch svc longhorn-frontend -n longhorn-system -p '{"spec": {"type": "NodePort"}}'
```

Afficher le port :

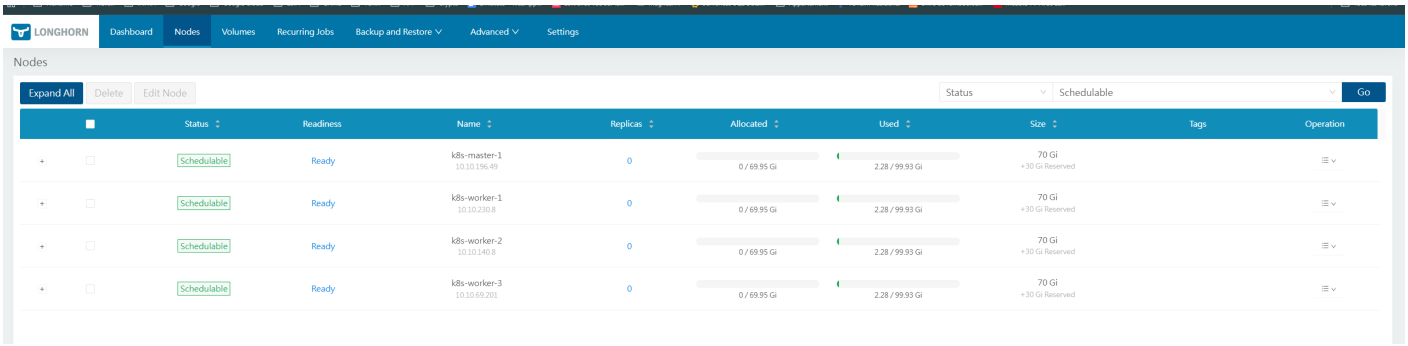
```
kubectl get svc longhorn-frontend -n longhorn-system
```

**On va utiliser le port :**

```
NAME              TYPE       CLUSTER-IP     EXTERNAL-IP   PORT(S)       AGE
longhorn-frontend   NodePort   10.102.85.80   <none>        80:32555/TCP   6m22s
```

Exemple ici : http://192.168.1.104:32555/#/dashboard

> On peut utiliser n'importe quelle IP du cluster.




# Tester le stockage (pour aller plus loin) :

## Déclaration du PVC :

hello-pvc.yaml

```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: longhorn-hello-pvc
spec:
  accessModes:
    - ReadWriteOnce
  storageClassName: longhorn # On utilise le driver Longhorn
  resources:
    requests:
      storage: 1Gi # 1 Go c'est largement assez pour un test
```

## Création d'un conteneur utilisant le PVC :

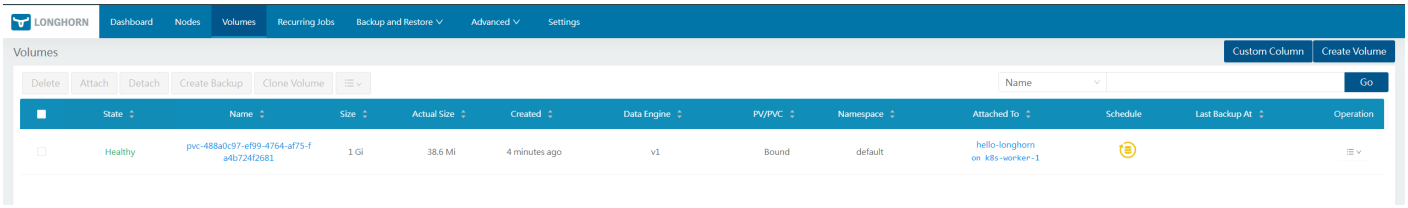
hello-app.yaml

```
apiVersion: v1
kind: Pod
metadata:
  name: hello-longhorn
spec:
  containers:
  - name: hello-world
    image: busybox
    # On écrit la date dans /data/coucou.txt en boucle
    command: ["sh", "-c", "while true; do date >> /data/coucou.txt; echo 'Donnée écrite !'; sleep 5; done"]
    volumeMounts:
    - name: storage-volume
      mountPath: /data
  volumes:
  - name: storage-volume
    persistentVolumeClaim:
      claimName: longhorn-hello-pvc
```

## Application des changements :

```
kubectl apply -f hello-pvc.yaml
kubectl apply -f hello-app.yaml
```

## Côté interface graphique :




## Suppression du pod :

```
kubectl delete pod hello-longhorn
```

## Suppression du pvc :

```
kubectl delete pvc longhorn-hello-pvc
```

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