

Lab 6 Kubernetes – Jarosław Koldun

Repository link: <https://github.com/jarkol01/Lab-6---Kubernetes>

1. Short description of running the application

Instructions for running the application are available in README.md in the repository.

Process of creating with description:

- Kubernetes Cluster
 - Created using kind, a tool for running Kubernetes clusters locally using Docker containers
- NFS Server + Provisioner
 - Installed using the Helm chart
 - Provides dynamic provisioning of Persistent Volumes via a custom StorageClass
- Persistent Volume Claim (PVC)
 - Created using the custom StorageClass
 - Dynamically binds to a Persistent Volume managed by the NFS provisioner
 - Shared across the nginx deployment and the job that writes sample content
- Job
 - Mounts the PVC and writes a sample HTML file into it
 - Ensures content is available to the nginx server via shared storage.
- Deployment
 - Runs an nginx HTTP server
 - Mounts the PVC to serve the sample web content written by the Job
- Service
 - Exposes the nginx Deployment inside the cluster
- Port Forwarding
 - `kubectl port-forward service/nginx-service 8080:80` is used to access the application locally
 - Accessible at <http://localhost:8080>

2. Architecture diagram of the created application with a description explaining the role of the components and their connections

