FILL IN : Lab 4

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Questions from the lab

A screenshot of a computer

AI-generated content may be incorrect.*In the lab assignment, you’ll see several questions in red boxes. Paste those questions and their respective answers below. Make sure your answer is concise and well-formatted. You may submit this as e.g. a screenshot of a filled-out cell in a copy of the Notion document (e.g. with code, so that code formatting is maintained).*

3.2 Kubernetes Advanced

**Q1 :** How did you test the Persistent Volume?

**A1 :**

* **Explaining:**
* **Deploy pod and service**
  + **kubectl apply -f pv-database.yaml**
  + **kubectl apply -f pvc-database.yaml**
  + **kubectl apply -f deployment-database.yaml**
* **Acces API**
  + **kubectl expose deployment storage-demo --type=NodePort --port=8080**
* **Delete pod**
  + **Kubectl delete pod**
* **The data is still there so it is persistent**
* **Deployment Yaml file:**

apiVersion: apps/v1

kind: Deployment

metadata:

name: storage-demo

spec:

replicas: 1

selector:

matchLabels:

app: storage-demo

template:

metadata:

labels:

app: storage-demo

spec:

containers:

- name: storage-demo

image: ghcr.io/nathansegers/kubernetes-storage-test

ports:

- containerPort: 8080

volumeMounts:

- name: storage-data

mountPath: /data

volumes:

- name: storage-data

persistentVolumeClaim:

claimName: pvc-database

**Q2 :** Can you search in the Kubernetes documentation how you can mount other things than a Persistent Volume, such as a ConfigMap as a volume to your application?

**A2 :** You can use configMap instead of persistentVolumeClaim in volumes section.

volumes:

    - name: config-volume

      configMap:

        name: my-configmap

3.3 Kubernetes Helm

**Q3 :** What is the Repository, Chart name and Release name in the command executed above?

**A3 :**

Repository: howest

Release name: example-v2

Chart name: helm-demo

**A screen shot of a computer program

AI-generated content may be incorrect.Q4 :** Which command did you use?

**A4 :** helm install my-wordpress bitnami/wordpress -f wordpress-values.yaml

!!! helm upgrade --install my-wordpress bitnami/wordpress -f wordpress-values.yaml

( if it is already installed but you don’t want another name )

**Q5 :** Explain in your own words why a Helm chart is useful for applications.

**A5 :** Helm charts help automate and standardize Kubernetes application deployments, saving time and reducing errors.

3.4 Kubernetes Load Balancer

**Q6 :** How did you setup the Default Backend as a fallback?

**A6 :**

apiVersion: networking.k8s.io/v1

kind: Ingress

metadata:

  name: ingress-router

  annotations:

    ingress.kubernetes.io/ssl-redirect: "false"

spec:

  rules:

  - host: nginx.localhost

    http:

      paths:

      - path: /

        pathType: Prefix

        backend:

          service:

            name: svc-nginx

            port:

              number: 80

  - host: vue.localhost

    http:

      paths:

      - path: /

        pathType: Prefix

        backend:

          service:

            name: svc-vue-app

            port:

              number: 80

Questions to answer for every lab

**What did you learn?**

*Fill in your three take aways that you learned during this lesson.*

1. How to work with volumes ( storage )
2. How to utilize Helm repos for multiple projects
3. Utilising Ingress as route handlers

**Givethree interesting exam questions about the contents of the lab and/or the theory**.

*Thinking about this will make sure you remember the key take-aways and important details better and longer.*

1. What is persistent volume and what can it do ?
2. What does the utilization of Helm make possible ?
3. What do Ingress serve as

**Check the following:**

* I have made the entire lab assignment (be careful, some labs consist out of two or more Notion documents!).
* I have answered all the questions from the lab assignment.
* I have submitted my code as a zip file and/or as a link to a *public* Git repository.
* <For labs on Azure> I have shut down any resources that are in use, in order to avoid unexpected costs.