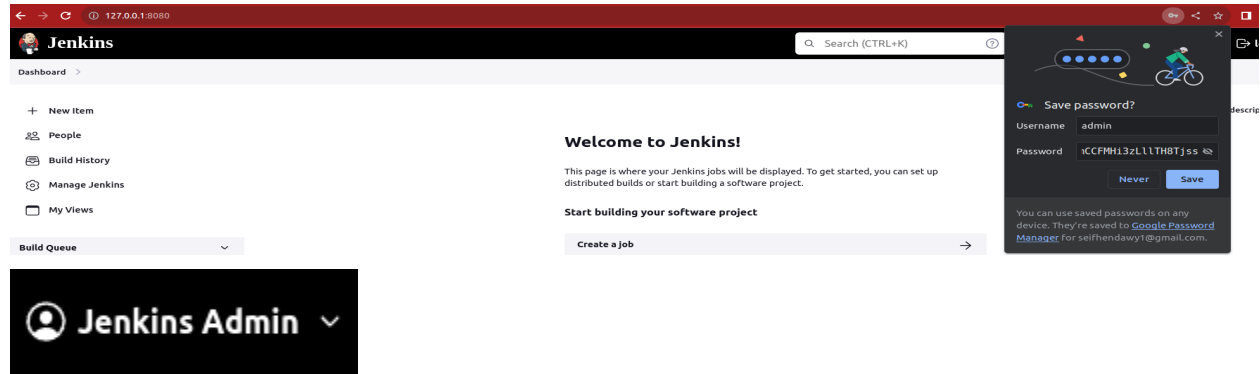# Seif Eldin Mohamed Aboelhassan Mohamed Hendawy
Lab 3

```
seif@seif-Alienware-17-R5:~/Downloads$ tar -zxvf helm-canary-linux-amd64.tar.gz
linux-amd64/
linux-amd64/LICENSE
linux-amd64/helm
linux-amd64/README.md
seif@seif-Alienware-17-R5:~/Downloads$ sudo mv linux-amd64/helm /usr/local/bin/
seif@seif-Alienware-17-R5:~/Downloads$ helm version
version.BuildInfo{Version:"v3.12.3", GitCommit:"3a31588ad33fe3b89af5a2a54ee1d25b
fe6eaa5e", GitTreeState:"clean", GoVersion:"go1.20.7"}
seif@seif-Alienware-17-R5:~/Downloads$ 
```

Lab 1 :

Deploy Jenkins in a Kubernetes cluster using Helm charts , and run a pipeline in Jenkins that's deployed in a Kubernetes cluster

```
seif@seif-Alienware-17-R5:~/Downloads$ helm repo add jenkins https://charts.jenkins.io
helm repo update
"jenkins" has been added to your repositories
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "jenkins" chart repository
Update Complete. ⎈Happy Helming!⎈
seif@seif-Alienware-17-R5:~/Downloads$ 
```


Build #1 (Sep 23, 2023, 11:45:06 AM)

</> No changes.

🕐 Started by user **Jenkins Admin**

🕐 This run spent:

- 1 min 35 sec waiting;
- 7.9 sec build duration;
- 1 min 43 sec total from scheduled to completion.

```yaml
      env:
      - name: "JENKINS_SECRET"
        value: "********"
      - name: "JENKINS_TUNNEL"
        value: "jenkins-agent.cicd.svc.cluster.local:50000"
      - name: "JENKINS_AGENT_NAME"
        value: "default-fvvbk"
      - name: "JENKINS_NAME"
        value: "default-fvvbk"
      - name: "JENKINS_AGENT_WORKDIR"
        value: "/home/jenkins/agent"
      - name: "JENKINS_URL"
        value: "http://jenkins.cicd.svc.cluster.local:8080/"
      image: "jenkins/inbound-agent:3107.v665000b_51092-15"
      imagePullPolicy: "IfNotPresent"
      name: "jnlp"
      resources:
        limits:
          memory: "512Mi"
          cpu: "512m"
        requests:
          memory: "512Mi"
          cpu: "512m"
      tty: false
      volumeMounts:
      - mountPath: "/home/jenkins/agent"
        name: "workspace-volume"
        readOnly: false
      workingDir: "/home/jenkins/agent"
    nodeSelector:
      kubernetes.io/os: "linux"
    restartPolicy: "Never"
    serviceAccountName: "default"
    volumes:
    - emptyDir:
        medium: ""
      name: "workspace-volume"

Building remotely on default-fvvbk (jenkins-jenkins-agent) in workspace /home/jenkins/agent/workspace/lab3
Finished: SUCCESS
```

Lab 2 :

Deploy Prometheus in a Kubernetes cluster using a Helm chart and access it via Grafana and Prometheus

```
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" has been added to your repositories
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ helm repo add grafana https://grafana.github.io/helm-charts
"grafana" has been added to your repositories
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
helm repo update
"prometheus-community" already exists with the same configuration, skipping
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "jenkins" chart repository
...Successfully got an update from the "grafana" chart repository
...Successfully got an update from the "prometheus-community" chart repository
Update Complete. ⎈Happy Helming!⎈
```

```
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ kubectl create namespace monitoring
namespace/monitoring created
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ helm install prometheus prometheus-communi
NAME: prometheus
LAST DEPLOYED: Sat Sep 23 14:53:09 2023
NAMESPACE: monitoring
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
The Prometheus server can be accessed via port 80 on the following DNS name from within y
prometheus-server.monitoring.svc.cluster.local


Get the Prometheus server URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace monitoring -l "app.kubernetes.io/name=pr
  kubectl --namespace monitoring port-forward $POD_NAME 9090


The Prometheus alertmanager can be accessed via port 9093 on the following DNS name from
prometheus-alertmanager.monitoring.svc.cluster.local


Get the Alertmanager URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace monitoring -l "app.kubernetes.io/name=a
  kubectl --namespace monitoring port-forward $POD_NAME 9093
#####################################################################################
######    WARNING: Pod Security Policy has been disabled by default since    #####
######             it deprecated after k8s 1.25+. use                        #####
######             (index .Values "prometheus-node-exporter" "rbac"          #####
###### .           "pspEnabled") with (index .Values                        #####
######             "prometheus-node-exporter" "rbac" "pspAnnotations")       #####
######             in case you still need it.                                #####
#####################################################################################


The Prometheus PushGateway can be accessed via port 9091 on the following DNS name from w
prometheus-prometheus-pushgateway.monitoring.svc.cluster.local


Get the PushGateway URL by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace monitoring -l "app=prometheus-pushgatewa
  kubectl --namespace monitoring port-forward $POD_NAME 9091

For more information on running Prometheus, visit:
https://prometheus.io/
seif@seif-Alienware-17-R5:~/Downloads/jks-k8s$ helm install grafana grafana/grafana --nam
NAME: grafana
LAST DEPLOYED: Sat Sep 23 14:53:21 2023
NAMESPACE: monitoring
STATUS: deployed
REVISION: 1
NOTES:
```

127.0.0.1:9091/graph?g0.expr=&g0.tab=1&g0.stacked=0&g0.show_exemplars=0&g0.range_input=1h

Prometheus   Alerts   Graph   Status ▾   Help

☐ Use local time   ☐ Enable query history   ☑ Enable autocomplete   ☑ Enable highlighting   ☑ Enable linter

🔍 | Expression (press Shift+Enter for newlines)

Table   Graph

< | Evaluation time | >

No data queried yet

Add Panel

ⓘ 127.0.0.1:3000/login

Welcome to Grafana

Email or username
admin

Password
••••••••••••••••••••••••••••••   👁

Log in

Forgot your password?

Home

Welcome to Grafana

Need help?

Remove this panel

Basic

The steps below will guide you to quickly finish setting up your Grafana installation.

TUTORIAL
DATA SOURCE AND DASHBOARDS

Grafana fundamentals

Set up and understand Grafana if you have no prior experience. This tutorial guides you through the entire process and covers the "Data source" and "Dashboards" steps to the right.

Learn how in the docs ⧉

DATA SOURCES

Add your first data source

Learn how in the docs ⧉

DASHBOARDS

Create your first dashboard

Learn how in the docs ⧉

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How universities preserve and protect digital assets with Grafana dashboards

Anthony Leroy has been a software engineer at the Libraries of the Université libre de Bruxelles (Belgium) since 2011. He is in charge of the digitization infrastructure and the digital preservation program of the University Libraries. He coordinates the activities of the SAFE distributed preservation network, an international LOCKSS network operated by seven partner universities. He is an engineer in electronics and telecommunications with a PhD in microelectronics (ULB) and has been a researcher for almost ten years in