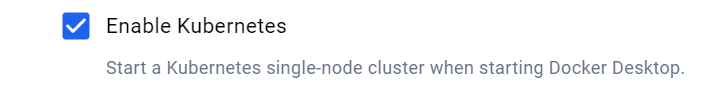
# Starting Kubernetes using Docker Desktop

Docker Desktop 🡺 Settings  
  
  
Starting Kubernetes Dashboard

helm commands for starting Kubernetes-dashboard

\eazybank-kubernetes-manifests\kubernetes-dashboard> **helm repo add kubernetes-dashboard https://kubernetes.github.io/dashboard/**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **helm upgrade --install kubernetes-dashboard kubernetes-dashboard/kubernetes-dashboard --create-namespace --namespace kubernetes-dashboard**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **kubectl -n kubernetes-dashboard port-forward svc/kubernetes-dashboard-kong-proxy 8443:443**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **kubectl apply -f .\dashboard-adminuser.yaml**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **kubectl apply -f .\dashboard-rolebinding.yaml**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **kubectl -n kubernetes-dashboard create token admin-user**

\eazybank-kubernetes-manifests\kubernetes-dashboard> **kubectl apply -f .\long-lived-secret-dashboard-token.yaml**

Creating eazybank-common helm charts

eazybank-helm> helm create eazybank-common

DELETE ALL FILES INSIDE templates FOLDER  
DELETE ALL CONTENT INSIDE values.yaml

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\eazybank-common\Chart.yaml

Update appVersion

Copy the template files from to templates folder

Keep the values.yaml empty for this chart, we will override it each respective microservice.

# Creating accounts microservice helm chart

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\eazybank-services> helm create cards

Delete all files inside templates folder and empty the values.yaml file

The only thing we will change is the appVersion to 1.0.0, rest all is fine.

Add eazybank-common Chart dependencies in Chart.yaml

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\eazybank-services\cards\Chart.yaml

Copy the template files from

<https://github.com/eazybytes/microservices/blob/3.2.3/section_16/helm/eazybank-services/accounts/templates/deployment.yaml>

<https://github.com/eazybytes/microservices/blob/3.2.3/section_16/helm/eazybank-services/accounts/templates/service.yaml>

Update values.yaml

https://github.com/eazybytes/microservices/blob/3.2.3/section\_16/helm/eazybank-services/accounts/values.yaml  
D:\Experiments\Microservices\sb-bank-application\eazybank-helm\eazybank-services\cards\values.yaml

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\eazybank-services\cards> helm dependencies build

Follow same for cards, loans, configserver, eurekaserver, gatewayserver, message

# Install keycloak using helm

Copy the keycloak bitnami helm chart and paste

As a first step, I am going to use the Keycloak Helm chart from the bitnami folder

C:\Users\niles\Downloads\charts-main\charts-main\bitnami\keycloak

And paste it in   
D:\Experiments\Microservices\sb-bank-application\eazybank-helm

Modify the values.yaml

type: LoadBalancer

adminPassword: "password"

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\keycloak> helm dependencies build

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> helm install keycloak keycloak

To start keycloak dashboard

niles@Nilesh MINGW64 ~

export SERVICE\_IP=$(kubectl get svc --namespace default keycloak -o jsonpath='{.status.loadBalancer.ingress[0].ip}')

niles@Nilesh MINGW64 ~

export HTTP\_SERVICE\_PORT=$(kubectl get --namespace default -o jsonpath="{.spec.ports[?(@.name=='http')].port}" services keycloak)

niles@Nilesh MINGW64 ~

echo "http://${SERVICE\_IP}:${HTTP\_SERVICE\_PORT}/"

http://:80/

niles@Nilesh MINGW64 ~

echo Username: user

niles@Nilesh MINGW64 ~

echo Password: $(kubectl get secret --namespace default keycloak -o jsonpath="{.data.admin-password}" | base64 -d)

Username: user

Password: password

<http://localhost>

It might take 5-10 minutes for the dashboard UI to come up.

# Install Prometheus using helm

Copy the keycloak bitnami helm chart and paste

As a first step, I'm going to use the Keycloak Helm chart from the bitnami folder

C:\Users\niles\Downloads\charts-main\charts-main\bitnami\kube-prometheus

And paste it in   
D:\Experiments\Microservices\sb-bank-application\eazybank-helm\kube-prometheus

Modify values.yaml

 additionalScrapeConfigs:

    enabled: true

    type: internal

    internal:

      jobList: [

        {

            "job\_name": "configserver",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["configserver:8071"]

              }

            ]

       },

       {

            "job\_name": "eurekaserver",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["eurekaserver:8070"]

              }

            ]

       },

       {

            "job\_name": "accounts",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["accounts:8080"]

              }

            ]

       },

       {

            "job\_name": "loans",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["loans:8090"]

              }

            ]

       },

       {

            "job\_name": "cards",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["cards:9000"]

              }

            ]

       },

       {

            "job\_name": "gatewayserver",

            "metrics\_path": "/actuator/prometheus",

            "static\_configs": [

              {

                "targets": ["gatewayserver:8072"]

              }

            ]

       }

      ]

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\kube-prometheus> helm dependencies build

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> helm install prometheus kube-prometheus

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> kubectl port-forward --namespace default svc/prometheus-kube-prometheus-prometheus 9090:9090

# Install Grafana-Loki and Temp using helm

Copy the folder  
C:\Users\niles\Downloads\charts-main\charts-main\bitnami\grafana-loki

C:\Users\niles\Downloads\charts-main\charts-main\bitnami\grafana-tempo

To

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana-tempo

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana-loki

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana-loki> helm dependencies build

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> helm install loki grafana-loki

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana-tempo\values.yaml

    otlp:

      http: true

      grpc: true

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana-tempo> helm dependencies build

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> helm install tempo grafana-tempo

# Install Grafana using helm

Copy the folder  
C:\Users\niles\Downloads\charts-main\charts-main\bitnami\grafana

To   
D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana\values.yaml

  ## secretDefinition:

  ##   apiVersion: 1

  ##   datasources:

  ##   - name: Prometheus

  ##     type: prometheus

  ##     url: http://prometheus-prometheus-server

  ##     access: proxy

  ##     isDefault: true

  ##

secretDefinition:

    apiVersion: 1

    deleteDatasources:

      - name: Prometheus

      - name: Loki

      - name: Tempo

    datasources:

      - name: Prometheus

        type: prometheus

        uid: prometheus

        url: http://prometheus-kube-prometheus-prometheus:9090

        access: proxy

        orgId: 1

        basicAuth: false

        isDefault: false

        version: 1

        editable: true

        jsonData:

          httpMethod: GET

      - name: Tempo

        type: tempo

        uid: tempo

        url: http://tempo-grafana-tempo-query-frontend:3200

        access: proxy

        orgId: 1

        basicAuth: false

        isDefault: false

        version: 1

        editable: true

        jsonData:

          httpMethod: GET

          serviceMap:

            datasourceUid: 'prometheus'

      - name: Loki

        type: loki

        uid: loki

        access: proxy

        orgId: 1

        editable: true

        url: http://loki-grafana-loki-gateway:80

        jsonData:

          httpHeaderName1: "X-Scope-OrgID"

          derivedFields:

            - datasourceUid: tempo

              matcherRegex: "\\[.+,(.+),.+\\]"

              name: TraceID

              url: '$${\_\_value.raw}'

        secureJsonData:

          httpHeaderValue1: "tenant1"

## Create notifiers from a configMap

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm\grafana> helm dependencies build

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> helm install grafana grafana

PS D:\Experiments\Microservices\sb-bank-application\eazybank-helm> kubectl port-forward svc/grafana 3000:3000

$ echo "Password: $(kubectl get secret grafana-admin --namespace default -o jsonpath="{.data.GF\_SECURITY\_ADMIN\_PASSWORD}" | base64 -d)"

Password: KybFfFcUB7

PS C:\Users\niles> helm % helm ls

Error: unknown command "%" for "helm"

Run 'helm --help' for usage.

PS C:\Users\niles> helm ls

NAME NAMESPACE REVISION UPDATED STATUS CHART APP VERSION

grafana default 1 2024-07-21 12:10:48.4725797 +0530 IST deployed grafana-11.3.9 11.1.0

keycloak default 1 2024-07-21 09:54:17.6032412 +0530 IST deployed keycloak-21.7.1 24.0.5

loki default 1 2024-07-21 10:41:27.8490512 +0530 IST deployed grafana-loki-4.6.6 3.1.0

prometheus default 1 2024-07-21 10:04:51.8986524 +0530 IST deployed kube-prometheus-9.5.8 0.75.1

tempo default 1 2024-07-21 10:49:53.0566687 +0530 IST deployed grafana-tempo-3.7.0 2.5.0

PS C:\Users\niles>

# Install eazybank microservices using helm

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\environments

D:\Experiments\Microservices\sb-bank-application\eazybank-helm\environments\dev-env