Deploy to Kubernetes in Google Cloud: Challenge Lab

{ This is little difficult compared to other challenge labs. Just do steps as quick as you can 😊 }

Task 1: Create a Docker image and store the Dockerfile

```
gsutil cat gs://cloud-training/gsp318/marking/setup_marking.sh | bash
gcloud source repos clone valkyrie-app
cd valkyrie-app
cat > Dockerfile <<EOF
FROM golang:1.10
WORKDIR /go/src/app
COPY source .
RUN go install -v
ENTRYPOINT ["app","-single=true","-port=8080"]
EOF
docker build -t valkyrie-app:v0.0.1 .
cd ..
cd marking
./step1.sh
```

Task 2: Test the created Docker image

```
cd ..
cd valkyrie-app
docker run -p 8080:8080 valkyrie-app:v0.0.1 &
cd ..
cd marking
./step2.sh
```

Task 3: Push the Docker image in the Google Container Repository

```
cd ..
cd valkyrie-app
docker tag valkyrie-app:v0.0.1 gcr.io/$GOOGLE_CLOUD_PROJECT/valkyrie-app:v0.0.1
docker push gcr.io/$GOOGLE_CLOUD_PROJECT/valkyrie-app:v0.0.1
```

Task 4: Create and expose a deployment in Kubernetes


```
sed -i s#IMAGE_HERE#gcr.io/$GOOGLE_CLOUD_PROJECT/valkyrie-app:v0.0.1#g k8s/deployment.yaml
gcloud container clusters get-credentials valkyrie-dev --zone us-east1-d
kubectl create -f k8s/deployment.yaml
kubectl create -f k8s/service.yaml
```


Task 5: Update the deployment with a new version of valkyrie-app


```
git merge origin/kurt-dev
kubectl edit deployment valkyrie-dev
### change replicas from 1 to 3
docker build -t gcr.io/$GOOGLE_CLOUD_PROJECT/valkyrie-app:v0.0.2 .
docker push gcr.io/$GOOGLE_CLOUD_PROJECT/valkyrie-app:v0.0.2
kubectl edit deployment valkyrie-dev
### change 0.0.1 to 0.0.2 in two places
```


Task 6: Create a pipeline in Jenkins to deploy your app

```
docker ps
### get container id
docker kill container_id
export POD_NAME=$(kubectl get pods --namespace default -l
"app.kubernetes.io/component=jenkins-master" -l "app.kubernetes.io/instance=cd" -o
jsonpath="{.items[0].metadata.name}")
kubectl port-forward $POD_NAME 8080:8080 >> /dev/null &
printf $(kubectl get secret cd-jenkins -o jsonpath="{.data.jenkins-admin-password}" | base64 --
decode);echo
# Open web-preview and login as admin with password from last command
# click credentials -> -> Global Credentials
# Click add credentials
# select Google Service Account from metadata
# Click ok
# Click jenkins (top left)
# Click new item
# enter valkyrie-app
# click pipeline
# click ok
# select pipeline script from SCM
# Set SCM to Git
# Add the source code repo ( find it using gcloud source repos list)
# Set credentials to qwiklabs-...
```

```
# Click save
# Change color
sed -i "s/green/orange/g" source/html.go
# Update project in Jenkinsfile
sed -i "s/YOUR_PROJECT/$GOOGLE_CLOUD_PROJECT/g" Jenkinsfile
git config --global user.email "you@example.com"
git config --global user.name "student"
git add .
git commit -m "build pipeline init"
git push
# in jenkins click build now on the job
# initial build takes a while, just wait
```