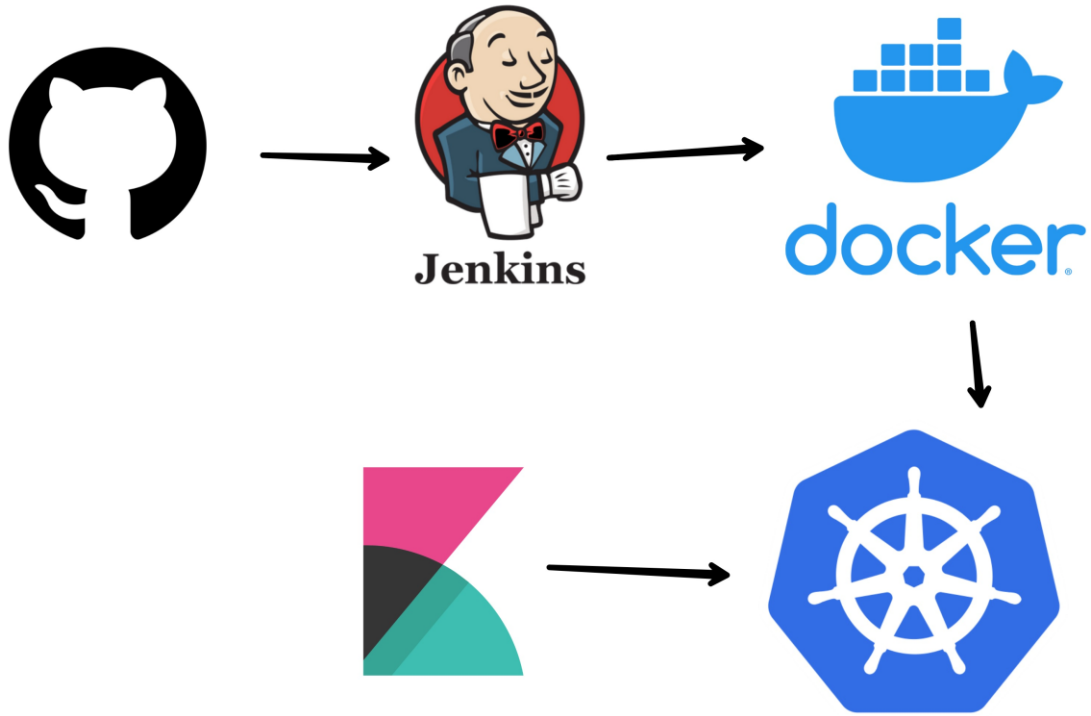
CI/CD Pipeline with Monitoring

SUMANTH SUBRAHMANYA

Tools

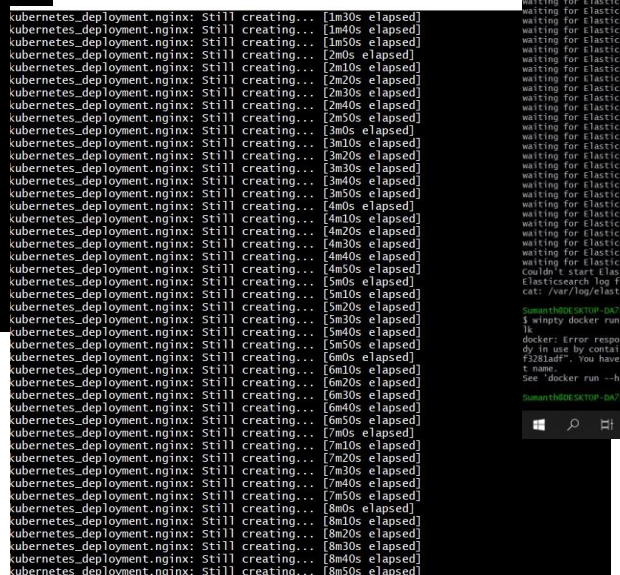
- *GitHub*
- *Jenkins*
- *DockerHub*
- *Kubernetes*
- *ELK*

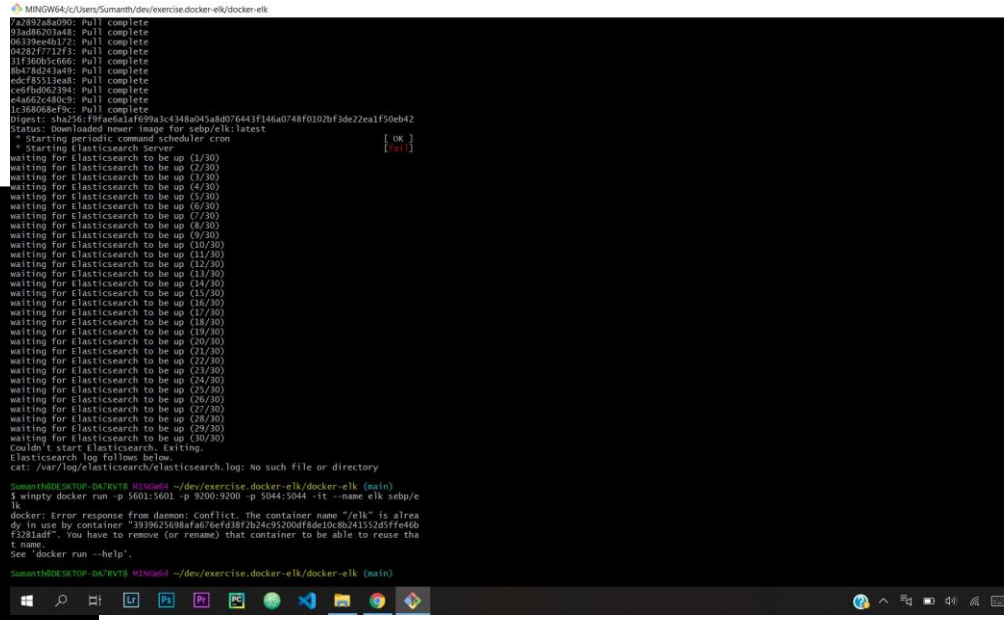
Design & Expectation



Reality - Errors

```
Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/sba.kubernetes-cluster (master)
$ kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
kubernetes-flask    0/1     1            0           4m33s

Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/sba.kubernetes-cluster (master)
$ kubectl create deployment kubernetes-flask --image=kubernetes.yml
error: failed to create deployment: deployments.apps "kubernetes-flask" already
exists

Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/sba.kubernetes-cluster (master)
$ kubectl create deployment kubernetes-flasks --image=kubernetes.yml
deployment.apps/kubernetes-flasks created

Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/sba.kubernetes-cluster (master)
$ kubectl get deployments
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
kubernetes-flask    0/1     1            0           10m
kubernetes-flasks   0/1     1            0           4s

Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/sba.kubernetes-cluster (master)
$
```





Dockerfile, Jenkinsfile, Kubernetes.yml

```
FROM python:3.7-alpine


USER root

WORKDIR /app

ADD . /app

RUN pip install --trusted-host pypi.python.org -r requirements.txt

EXPOSE 80

ENV NAME World

CMD ["python", "web.py"]
```

```
stage('Cloning Git'){
                                        steps {
                                                script{
                                                        sh 'https://github.com/Sumanth5/case-study'
                                                }
                                        }
                                }
                                stage('Build docker image ') {
                                        steps {
                                                script {
                                                        sh 'docker image build -t $DOCKER_HUB_REPO:latest .'
                                                        sh 'docker image tag $DOCKER_HUB_REPO:latest $DOCKER_HUB_REPO:$BUILD_NUMBER'
                                                        echo "image buit successfuly"
                                                }
                                        }
                                }
                               stage('Push Docker Image') {

                            checkout scm

                            docker.withRegistry('https://registry.hub.docker.com', 'dockerhub') {

                                def customImage = docker.push("sumanth55/kubes")


                                customImage.push()
                            }
                        }
```

```
#Deployment
apiVersion: apps/v1
kind: Deployment
metadata:
  name: app-deployment
  labels:
    app: flask
spec:
  replicas: 3
  selector:
    matchLabels:
      app:  flask
  template:
    metadata:
      labels:
        app: flask
    spec:
      containers:
      - name: flask
        image: sumanth55/kubes
        ports:
        - containerPort: 80
---
#Service
apiVersion: v1
kind: Service
metadata:
  name: app-service
spec:
  selector:
    app: flask
  ports:
    - protocol: TCP
      port: 80
      targetPort: 8080
      nodePort: 31000
  type: NodePort
```

Flask app running locally