



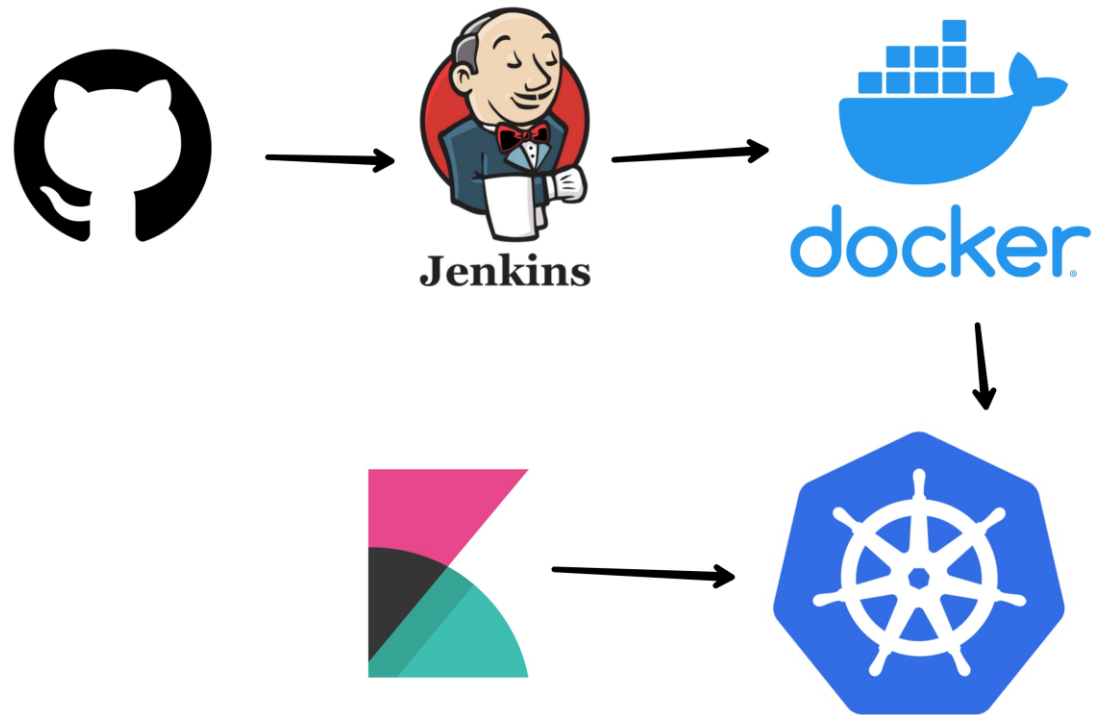
CI/CD Pipeline with Monitoring

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)
```

```
$
```

```
kubernetes_deployment.nginx: Still creating... [1m30s elapsed]
kubernetes_deployment.nginx: Still creating... [1m40s elapsed]
kubernetes_deployment.nginx: Still creating... [1m50s elapsed]
kubernetes_deployment.nginx: Still creating... [2m0s elapsed]
kubernetes_deployment.nginx: Still creating... [2m10s elapsed]
kubernetes_deployment.nginx: Still creating... [2m20s elapsed]
kubernetes_deployment.nginx: Still creating... [2m30s elapsed]
kubernetes_deployment.nginx: Still creating... [2m40s elapsed]
kubernetes_deployment.nginx: Still creating... [2m50s elapsed]
kubernetes_deployment.nginx: Still creating... [3m0s elapsed]
kubernetes_deployment.nginx: Still creating... [3m10s elapsed]
kubernetes_deployment.nginx: Still creating... [3m20s elapsed]
kubernetes_deployment.nginx: Still creating... [3m30s elapsed]
kubernetes_deployment.nginx: Still creating... [3m40s elapsed]
kubernetes_deployment.nginx: Still creating... [3m50s elapsed]
kubernetes_deployment.nginx: Still creating... [4m0s elapsed]
kubernetes_deployment.nginx: Still creating... [4m10s elapsed]
kubernetes_deployment.nginx: Still creating... [4m20s elapsed]
kubernetes_deployment.nginx: Still creating... [4m30s elapsed]
kubernetes_deployment.nginx: Still creating... [4m40s elapsed]
kubernetes_deployment.nginx: Still creating... [4m50s elapsed]
kubernetes_deployment.nginx: Still creating... [5m0s elapsed]
kubernetes_deployment.nginx: Still creating... [5m10s elapsed]
kubernetes_deployment.nginx: Still creating... [5m20s elapsed]
kubernetes_deployment.nginx: Still creating... [5m30s elapsed]
kubernetes_deployment.nginx: Still creating... [5m40s elapsed]
kubernetes_deployment.nginx: Still creating... [5m50s elapsed]
kubernetes_deployment.nginx: Still creating... [6m0s elapsed]
kubernetes_deployment.nginx: Still creating... [6m10s elapsed]
kubernetes_deployment.nginx: Still creating... [6m20s elapsed]
kubernetes_deployment.nginx: Still creating... [6m30s elapsed]
kubernetes_deployment.nginx: Still creating... [6m40s elapsed]
kubernetes_deployment.nginx: Still creating... [6m50s elapsed]
kubernetes_deployment.nginx: Still creating... [7m0s elapsed]
kubernetes_deployment.nginx: Still creating... [7m10s elapsed]
kubernetes_deployment.nginx: Still creating... [7m20s elapsed]
kubernetes_deployment.nginx: Still creating... [7m30s elapsed]
kubernetes_deployment.nginx: Still creating... [7m40s elapsed]
kubernetes_deployment.nginx: Still creating... [7m50s elapsed]
kubernetes_deployment.nginx: Still creating... [8m0s elapsed]
kubernetes_deployment.nginx: Still creating... [8m10s elapsed]
kubernetes_deployment.nginx: Still creating... [8m20s elapsed]
kubernetes_deployment.nginx: Still creating... [8m30s elapsed]
kubernetes_deployment.nginx: Still creating... [8m40s elapsed]
kubernetes_deployment.nginx: Still creating... [8m50s elapsed]
```

MINGW64/C:/Users/Sumanth/dev/exercise.docker-elk/docker-elk

```
742892a8a090: Pull complete
73a86093a49: Pull complete
06339ee4b372: Pull complete
0426277712f3: Pull complete
11f80b05c6d6: Pull complete
8b478d243a49: Pull complete
80c45513a08: Pull complete
ceff8a062394: Pull complete
e4a662c480c3: Pull complete
1c38860e4f9c: Pull complete
Digest: sha256:f9fa6a1af699a3c4348a045a8d076443f146a0748f0102bf3de22eaf150eb42
Status: Downloaded newer image for selk/elk:latest
* Starting periodic command scheduler cron
* Starting Elasticsearch Server
waiting for Elasticsearch to be up (1/30)
waiting for Elasticsearch to be up (2/30)
waiting for Elasticsearch to be up (3/30)
waiting for Elasticsearch to be up (4/30)
waiting for Elasticsearch to be up (5/30)
waiting for Elasticsearch to be up (6/30)
waiting for Elasticsearch to be up (7/30)
waiting for Elasticsearch to be up (8/30)
waiting for Elasticsearch to be up (9/30)
waiting for Elasticsearch to be up (10/30)
waiting for Elasticsearch to be up (11/30)
waiting for Elasticsearch to be up (12/30)
waiting for Elasticsearch to be up (13/30)
waiting for Elasticsearch to be up (14/30)
waiting for Elasticsearch to be up (15/30)
waiting for Elasticsearch to be up (16/30)
waiting for Elasticsearch to be up (17/30)
waiting for Elasticsearch to be up (18/30)
waiting for Elasticsearch to be up (19/30)
waiting for Elasticsearch to be up (20/30)
waiting for Elasticsearch to be up (21/30)
waiting for Elasticsearch to be up (22/30)
waiting for Elasticsearch to be up (23/30)
waiting for Elasticsearch to be up (24/30)
waiting for Elasticsearch to be up (25/30)
waiting for Elasticsearch to be up (26/30)
waiting for Elasticsearch to be up (27/30)
waiting for Elasticsearch to be up (28/30)
waiting for Elasticsearch to be up (29/30)
waiting for Elasticsearch to be up (30/30)
Could not start Elasticsearch. Exiting.
Elasticsearch log follows below.
cat: /var/log/elasticsearch/elasticsearch.log: No such file or directory
```

```
Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/exercise.docker-elk/docker-elk (main)
$ winpty docker run -p 5601:5601 -p 9200:9200 -p 5044:5044 -it --name elk selk/elk
docker: Error response from daemon: Conflict. The container name "/elk" is already in use by container "f3281ad7". You have to remove (or rename) that container to be able to reuse the name.
See "docker run --help".
```

Sumanth@DESKTOP-DA7RVT8 MINGW64 ~/dev/exercise.docker-elk/docker-elk (main)

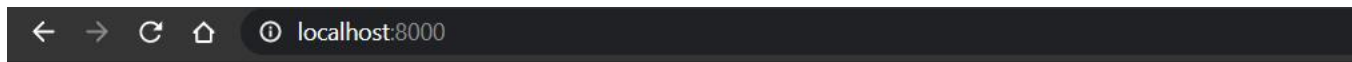
Dockerfile, Jenkinsfile, Kubernetes.yml

```
1 FROM python:3.7-alpine
2
3
4 USER root
5
6 WORKDIR /app
7
8 ADD . /app
9
10 RUN pip install --trusted-host pypi.python.org -r requirements.txt
11
12 EXPOSE 80
13
14 ENV NAME World
15
16 CMD ["python", "web.py"]
```

```
1 stage('Cloning Git'){
2
3     steps {
4         script{
5             sh 'https://github.com/Sumanth5/case-study'
6         }
7     }
8 }
9
10 stage('Build docker image '){
11     steps {
12         script {
13             sh 'docker image build -t $DOCKER_HUB_REPO:latest .'
14             sh 'docker image tag $DOCKER_HUB_REPO:latest $DOCKER_HUB_REPO:$BUILD_NUMBER'
15             echo "image buit successfully"
16         }
17     }
18 }
19
20 stage('Push Docker Image'){
21
22     checkout scm
23
24     docker.withRegistry('https://registry.hub.docker.com', 'dockerhub') {
25
26         def customImage = docker.push("sumanth55/kubes")
27
28         customImage.push()
29     }
30 }
31 }
```

```
1 #Deployment
2 apiVersion: apps/v1
3 kind: Deployment
4 metadata:
5     name: app-deployment
6     labels:
7         app: flask
8 spec:
9     replicas: 3
10    selector:
11        matchLabels:
12            app: flask
13    template:
14        metadata:
15            labels:
16                app: flask
17    spec:
18        containers:
19            - name: flask
20              image: sumanth55/kubes
21              ports:
22                  - containerPort: 80
23    ---
24 #Service
25 apiVersion: v1
26 kind: Service
27 metadata:
28     name: app-service
29 spec:
30     selector:
31         app: flask
32     ports:
33         - protocol: TCP
34           port: 80
35           targetPort: 8080
36           nodePort: 31000
37     type: NodePort
```

Flask app running locally



The quickest of brown foxes.

