

Inbox (16,261) - mohi

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Case-study-Introduction

hshar/website

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Case Study – Introduction to Kubernetes

Notes

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STUDY MATERIALS

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Hands On 1 – Creating A Volume

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Hands On 2 – Creating A Persistent Volume

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Hands On 3 – Creating A Secrets

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Hands On 4 -Creating A Taint On A Node Then A Pod With Tolerations But Not To The Taint

🔍

Case Study – Introduction To Kubernetes

Module 9 - Kubernetes II

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Module 10 - Terraform

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ELK

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Hands On 1 – Creating A Volume

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Hands On 2 – Creating A Persistent Volume

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Hands On 3 – Creating A Secrets

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Hands On 4 -Creating A Taint On A Node Then A Pod With Tolerations But Not To The Taint

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Case Study – Introduction To Kubernetes

Module 9 - Kubernetes II

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Module 10 - Terraform

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ELK

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CASE STUDY - INTRODUCTION TO KUBERNETES

You have just joined a startup Ventura Software as a Devops Lead Engineer. The company relies on a Monolithic Architecture for its product. Recently, the senior management was hired. The new CTO insists on having a Microservice Architecture. The Development Team, is working on breaking the Monolith. Meanwhile, you have been asked to host a Test Application on Kubernetes, to understand how it works.

Following things have to be implemented:

1. Deploy an Apache2 deployment of 2 replicas
2. Sample code has been checked-in at the following Git-Hub repo;
<https://github.com/hshar/website.git>.

You have to containerize this code, and push it to Docker Hub. Once done, deploy it on Kubernetes with 2 replicas

3. Deploy Ingress with the following rules:
i) `*/apache*` should point to the apache pods
ii) `*/custom*` should point to the GitHub application

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FROM ubuntu

```
RUN apt-get update
```

```
RUN DEBIAN_FRONTEND="noninteractive" apt-get -y install tzdata
```

```
RUN apt-get -y install apache2
```

```
ADD . /var/www/html
```

```
ENTRYPOINT apachectl -D FOREGROUND
```

ENV name Imohit



```
root@ip-172-31-89-137:~# git clone https://github.com/hshar/website.git
fatal: destination path 'website' already exists and is not an empty directory.
root@ip-172-31-89-137:~# ls
coustem.yml  coustom.yml  ingress.yml  pesis.yml  snap  test.yml  website
root@ip-172-31-89-137:~# cd website
root@ip-172-31-89-137:~/website# ls
Dockerfile  images  index.html
root@ip-172-31-89-137:~/website# vi Dockerfile
root@ip-172-31-89-137:~/website# docker build . -t mohitrathore/myimg
Sending build context to Docker daemon   256kB
Step 1/7 : FROM ubuntu
---> ff0fea8310f3
Step 2/7 : RUN apt-get update
---> Using cache
---> a29262460081
Step 3/7 : RUN DEBIAN_FRONTEND="noninteractive" apt-get -y install tzdata
---> Using cache
---> a3647a9f6ae3
Step 4/7 : RUN apt-get -y install apache2
---> Using cache
---> b90ac5114a44
Step 5/7 : ADD . /var/www/html
---> Using cache
---> cada10054fad
Step 6/7 : ENTRYPOINT apachectl -D FOREGROUND
---> Using cache
---> e1c2f71e6ad7
Step 7/7 : ENV name Imohit
---> Using cache
---> 214084e4f05d
Successfully built 214084e4f05d
Successfully tagged mohitrathore/myimg:latest
root@ip-172-31-89-137:~/website#
```



Successfully tagged mohitrathore/myimg:latest

root@ip-172-31-89-137:~/website# docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
mohitrathore/myimg	latest	214084e4f05d	24 hours ago	223MB
ubuntu	latest	ff0fea8310f3	2 weeks ago	72.8MB
k8s.gcr.io/kube-apiserver	v1.23.5	3fc1d62d6587	2 weeks ago	135MB
k8s.gcr.io/kube-proxy	v1.23.5	3c53fa8541f9	2 weeks ago	112MB
k8s.gcr.io/kube-scheduler	v1.23.5	884d49d6d8c9	2 weeks ago	53.5MB
k8s.gcr.io/kube-controller-manager	v1.23.5	b0c9e5e4dbb1	2 weeks ago	125MB
k8s.gcr.io/etcd	3.5.1-0	25f8c7f3da61	5 months ago	293MB
k8s.gcr.io/coredns/coredns	v1.8.6	a4ca41631cc7	5 months ago	46.8MB
k8s.gcr.io/pause	3.6	6270bb605e12	7 months ago	683kB
ghcr.io/weaveworks/launcher/weave-npc	2.8.1	7f92d556d4ff	14 months ago	39.3MB
ghcr.io/weaveworks/launcher/weave-kube	2.8.1	df29c0a4002c	14 months ago	89MB

root@ip-172-31-89-137:~/website# docker login

Authenticating with existing credentials...

WARNING! Your password will be stored unencrypted in /root/.docker/config.json.

Configure a credential helper to remove this warning. See

<https://docs.docker.com/engine/reference/commandline/login/#credentials-store>

Login Succeeded

root@ip-172-31-89-137:~/website# docker push mohitrathore/myimg

Using default tag: latest

The push refers to repository [docker.io/mohitrathore/myimg]

428808adf5b9: Layer already exists

265555958a2b: Layer already exists

e351763c234c: Layer already exists

363b2640bcd6: Layer already exists

867d0767a47c: Layer already exists

latest: digest: sha256:b367b7ca03b8268af9e8eeb8e13849ad19a89a5b8d86ea79ac0f9e31ad924dec size: 1374

root@ip-172-31-89-137:~/website# ls

Dockerfile images index.html

root@ip-172-31-89-137:~/website#

```
root@ip-172-31-89-137:~/website# vi custom.yml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: custom-deployment
  labels:
    app: custom
spec:
  replicas: 2
  selector:
    matchLabels:
      app: custom
  template:
    metadata:
      labels:
        app: custom
    spec:
      containers:
      - name: custom
        image: mohitrathore/myimg
        ports:
        - containerPort: 80
```

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```
root@ip-172-31-89-137:~/website# vi ingress.yml
root@ip-172-31-89-137:~/website# kubectl create -f ingress.yml
ingress.networking.k8s.io/minimal-ingress11 created
root@ip-172-31-89-137:~/website# kubectl get svc -A
```

NAMESPACE	NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)
AGE					
default	coustem	ClusterIP	10.103.22.197	<none>	80/TCP
24h					
default	custom	ClusterIP	10.110.39.177	<none>	80/TCP
21h					
default	custom-deploy	ClusterIP	10.98.51.164	<none>	80/TCP
11m					
default	kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP
2d22h					
ingress-nginx	ingress-nginx-controller	NodePort	10.108.249.164	<none>	80:32355/TCP,443:30963/TCP
20h					
ingress-nginx	ingress-nginx-controller-admission	ClusterIP	10.103.36.244	<none>	443/TCP
20h					
kube-system	kube-dns	ClusterIP	10.96.0.10	<none>	53/UDP,53/TCP,9153/TCP
2d22h					

```
root@ip-172-31-89-137:~/website# vi ingress.yml
root@ip-172-31-89-137:~/website# kubectl create -f ingress.yml
ingress.networking.k8s.io/minimal-ingress21 created
root@ip-172-31-89-137:~/website# kubectl get svc -A
```

NAMESPACE	NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)
AGE					
default	coustem	ClusterIP	10.103.22.197	<none>	80/TCP
24h					
default	custom	ClusterIP	10.110.39.177	<none>	80/TCP
21h					
default	custom-deploy	ClusterIP	10.98.51.164	<none>	80/TCP
12m					
default	kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP


```

root@ip-172-31-89-137: ~/website
2d22h
ingress-nginx ingress-nginx-controller NodePort 10.108.249.164 <none> 80:32355/TCP,443:30963/TCP
20h
ingress-nginx ingress-nginx-controller-admission ClusterIP 10.103.36.244 <none> 443/TCP
20h
kube-system kube-dns ClusterIP 10.96.0.10 <none> 53/UDP,53/TCP,9153/TCP
2d22h
root@ip-172-31-89-137:~/website# vi ingress.yml
root@ip-172-31-89-137:~/website# kubectl create -f ingress.yml
ingress.networking.k8s.io/minimal-ingress21 created
root@ip-172-31-89-137:~/website# kubectl get svc -A

```

NAMESPACE	NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)
default	coustem	ClusterIP	10.103.22.197	<none>	80/TCP
default	custom	ClusterIP	10.110.39.177	<none>	80/TCP
default	custom-deploy	ClusterIP	10.98.51.164	<none>	80/TCP
default	kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP
ingress-nginx	ingress-nginx-controller	NodePort	10.108.249.164	<none>	80:32355/TCP,443:30963/TCP
ingress-nginx	ingress-nginx-controller-admission	ClusterIP	10.103.36.244	<none>	443/TCP
kube-system	kube-dns	ClusterIP	10.96.0.10	<none>	53/UDP,53/TCP,9153/TCP

```

root@ip-172-31-89-137:~/website# kubectl get ing

```

NAME	CLASS	HOSTS	ADDRESS	PORTS	AGE
minimal-ingress	nginx-example	*		80	20h
minimal-ingress11	nginx-example	*		80	2m7s
minimal-ingress21	nginx-example	*		80	49s

```

root@ip-172-31-89-137:~/website#

```



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https://github.com/hshar/website

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HTTPS SSH GitHub CLI

https://github.com/hshar/website.git

Use Git or checkout with SVN using the web URL.

🖥 Open with GitHub Desktop

📦 Download ZIP

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Not Scanned

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Last pushed: 11 days ago

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mohitrathore / project1

Last pushed: a month ago

Not Scanned

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Tip: Not finding your repository? Try switching namespace via the top left dropdown.







Create an Organization
Manage Docker Hub repositories
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18:58

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