Assignment -4

Assignment Date	21 November 2022
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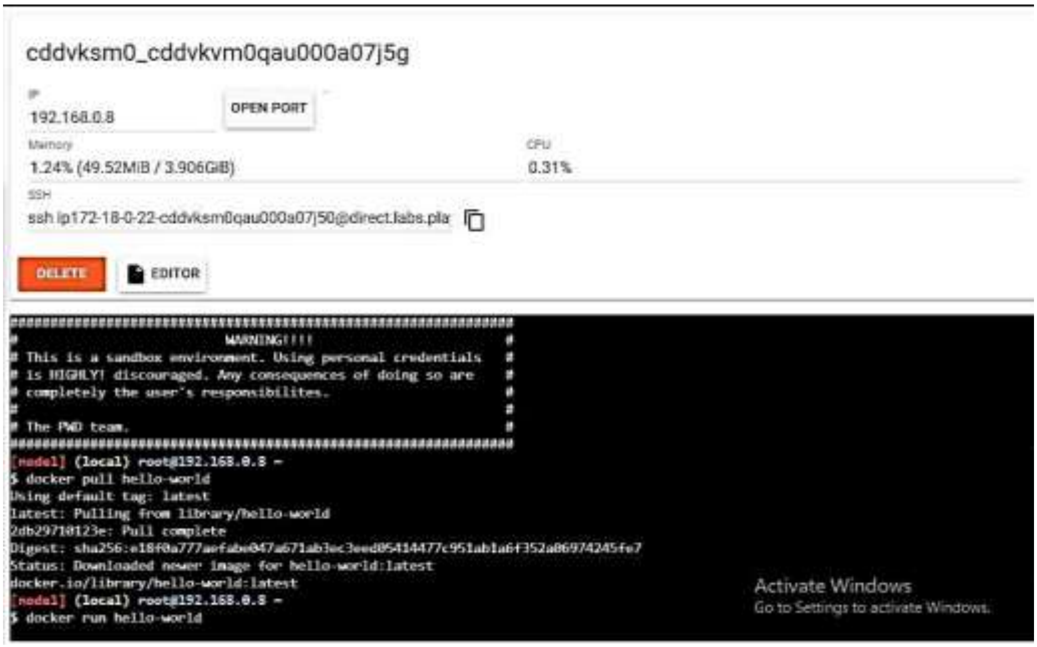
Assignment Kubernetes / Docker

1) Pull an Image from docker hub and run it in docker playground.

Solution:

- Pull an image from the docker hub for viewing and managing the docker engine.
- Use docker pull image name and docker run -it image name commands to run the above image in the Docker Playground.



cddvksm0_cddvkvm0qau000a07j5g

IP
192.168.0.8

Memory
1.24% (49.52MiB / 3.906GiB)

CPU
0.31%

SSH
ssh ip172-18-0-22-cddvksm0qau000a07j50@direct.labs.pla

```
###############################################################
#                          WARNING!!!!                        #
# This is a sandbox environment. Using personal credentials   #
# is HIGHLY! discouraged. Any consequences of doing so are    #
# completely the user's responsibilites.                      #
#                                                             #
# The PWD team.                                               #
###############################################################
[node1] (local) root@192.168.0.8 ~
$ docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
[node1] (local) root@192.168.0.8 ~
$ docker run hello-world
```

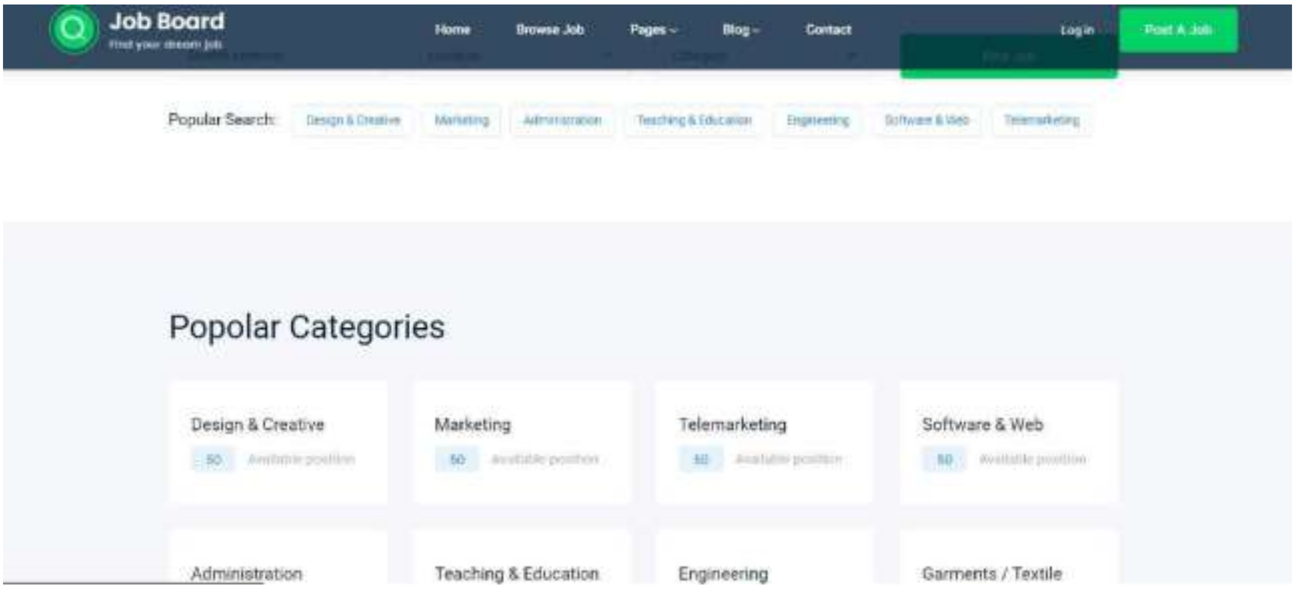
2) **Create a docker file for the job portal application and deploy it in Docker desktop application.**

Solution:

- Create a docker file for build and deploy flask app.
- Use docker build -t image name in the current directory to start building the docker image and deploy in our local docker.
- Use docker run -p 5000:5000 image name to run in local system.

CODE

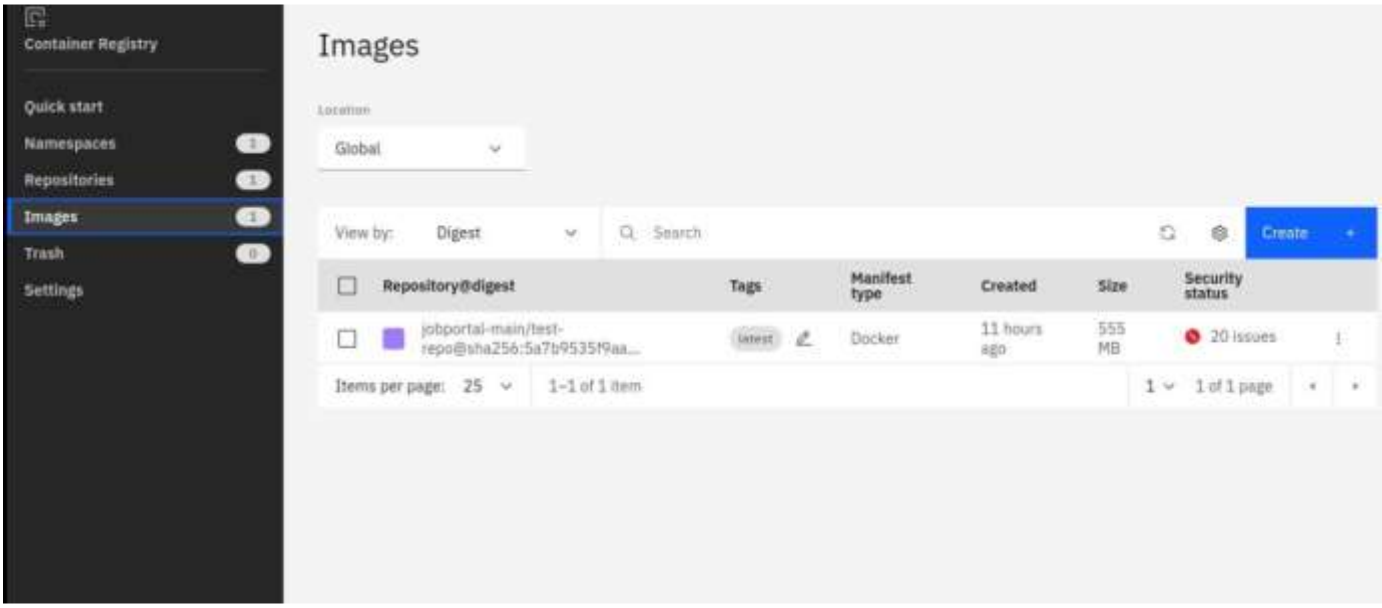
```
FROM ubuntu/apache2
FROM python
COPY ./requirements.txt /flaskApp/requirements.txt
WORKDIR /flaskApp
RUN pip install -r requirements.txt
COPY . /flaskApp
ENTRYPOINT [ "python" ]
CMD ["app.py" ]
```



3) Create a IBM container registry and deploy hello world app or job portal app.

Solution:

- Log into IBM cloud.
- Create a container registry.
- Using IBM Cloud CLI, install the container registry plugin in our system.
- Push our docker image into the created container registry using docker push.
- Our job portal app is deployed in the IBM container registry.



□	Repository@digest	Tags	Manifest type	Created	Size	Security status
□	jobportal-main/test-repo@sha256:5a7b9535f9aa...	latest	Docker	11 hours ago	555 MB	20 issues

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Output

“Hello World

4) Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.

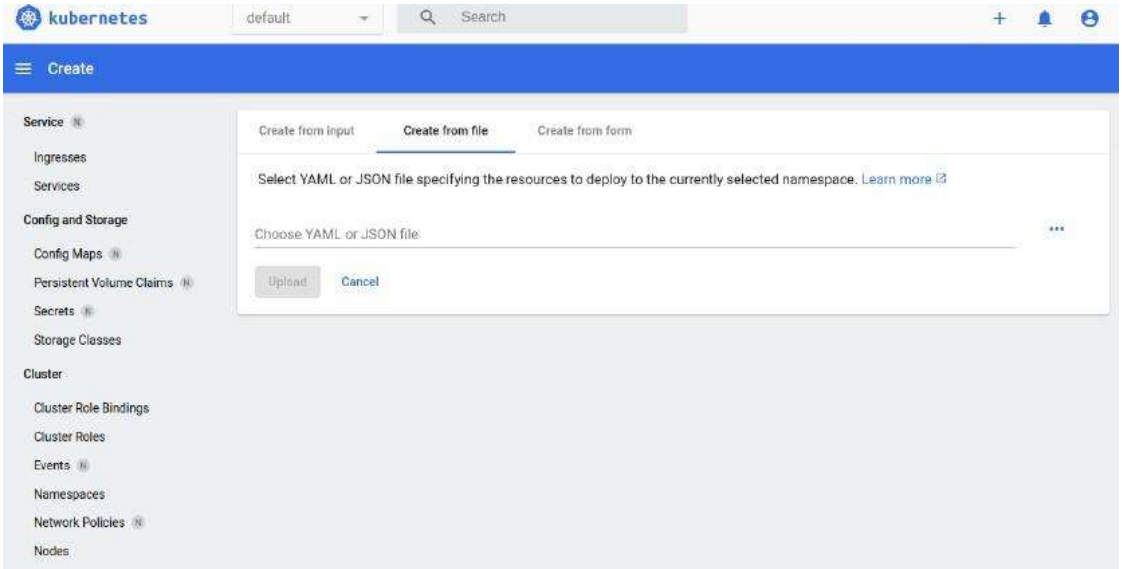
Solution:

- Log into IBM cloud.
- Create a kubernete.
- Using IBM Cloud CLI, install the ks plugin in our system.
- Create a cluster in the Kubernetes.
- Now, go to the kubernetes dashboard where we need to create a service based on a
- yml file.
- In that file, we have to mention which image we are going to use and the app name.
- Take the public IP address and Nodeport since we exposed the flask app in nodeport.
- We got the URL address where our flask app is hosted.

CODE:

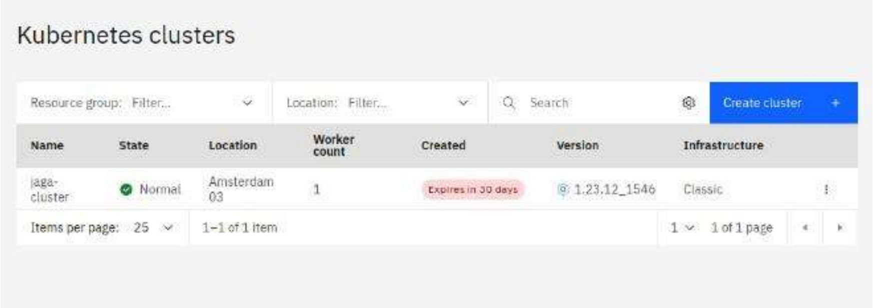
```
apiVersion: v1
kind: Service
metadata:
name: job-portal-app
spec:
selector:
app: job-portal-app
ports:
- port: 5000
type: NodePort
---
apiVersion: apps/v1
kind: Deployment
metadata:
name: job-portal-app
labels:
app: job-portal-app
spec:
selector:
matchLabels:
app: job-portal-app
replicas: 1
template:
metadata:
labels:
app: job-portal-app
spec:
containers:
- name: job-portal-app
image: image_name
```

```
ports:
- containerPort: 5000
env:
- name: DISABLE_WEB_APP
value: "false”
```



Select YAML or JSON file specifying the resources to deploy to the currently selected namespace. Learn more

Choose YAML or JSON file



Name	State	Location	Worker count	Created	Version	Infrastructure
jaga-cluster	Normal	Amsterdam 03	1	Expires in 30 days	1.23.12_1546	Classic

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