

## Assignment - 4

### Docker and Kubernetes

Assignment Date	November 4
Student Name	Madhan S
Student Roll Number	412319104014
Maximum Marks	2 Marks

#### Question-1:

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

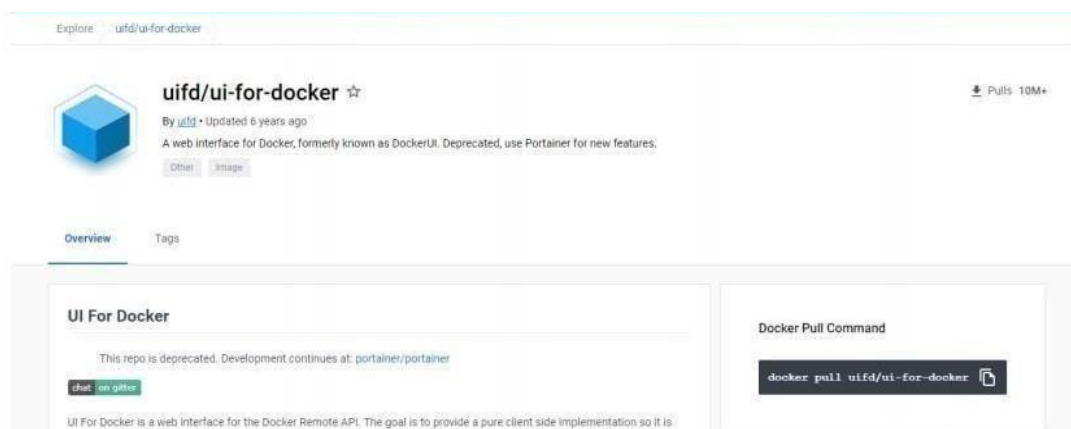
Solution:

```
docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=madhan --email=unkmaddy@gmail.com
WARNING: login credentials saved in
/home/madhanc/.docker/config.jsonLogin Succeeded
```

```
REPOSITORY      TAG      IMAGE ID      CREATED      SIZE
verse_gapminder_gsl  latest  023ab91c6291  3 minutes ago  1.975 GB
verse_gapminder     latest  bb38976d03cf  13 minutes ago  1.955 GB
rocker/verse        latest  0168d115f220  3 days ago    1.954 GB
docker tag bb38976d03cf madhan
/verse_gapminder:firsttry
docker push madhan
/verse_gapminder
```

Saving and loading images

```
docker save
verse_gapminder
docker save verse_gapminder > verse_gapminder.tar
docker load --input verse_gapminder.tar
docker load --input verse_gapminder.tar
```



Explore uifd/ui-for-docker

**uifd/ui-for-docker** ☆

By uifd • Updated 6 years ago

A web interface for Docker, formerly known as DockerUI. Deprecated, use Portainer for new features.

Other Image

Overview Tags

**UI For Docker**

This repo is deprecated. Development continues at: portainer/portainer

chat on gitter

UI For Docker is a web interface for the Docker Remote API. The goal is to provide a pure client side implementation so it is

**Docker Pull Command**

```
docker pull uifd/ui-for-docker
```

03:42:30

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13  
node1

cd9an2u3\_cd9av060qau0008hbjs0

IP: 192.168.0.13

OPEN PORT

Memory

CPU

SSH: ssh ip172-18-0-4-cd9an2u3tccg00fg6k0@direct.labs.play-w

DELETE

EDITOR

```
# This is a sandbox environment. Using personal credentials
# is HIGHLY discouraged. Any consequences of doing so are
# completely the user's responsibilities.
#
# The PRD team.
#####
[root@] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
8e1194d080c8: Pull complete
Digest: sha256:fe371ff3a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[root@] (local) root@192.168.0.13 ~
$ docker run -d -p 9000:9000 --privileged --v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
c590dd163101ae795bdcea0eb1ddd98f6fe549cb5f24dabc9ff7c1931523fe0d
[root@] (local) root@192.168.0.13 ~
```

ui For Docker

Images

Refresh

# UI For Docker

The UI for Docker container engine

Learn more.

Running Containers

• beautiful\_goldwasser [Tap About a minute](#)

Status

UI For Docker

Images

Networks

Refresh

Running Containers

Status



Containers created

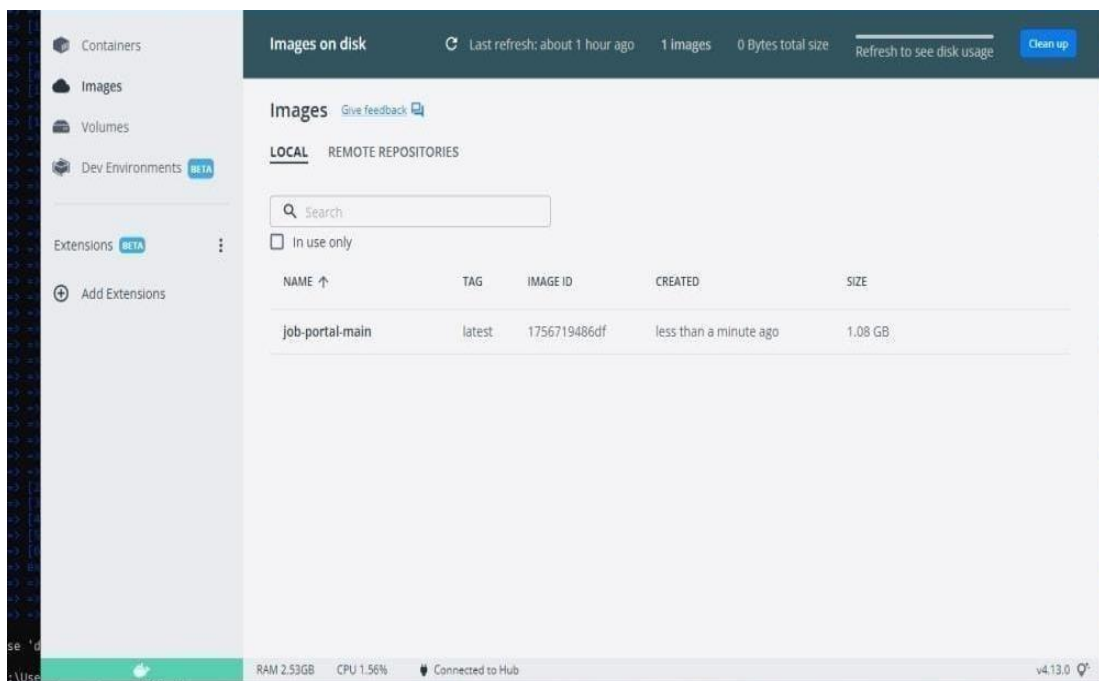
Running Stopped Ghost

## Question-2:

2. Create a docker file for the jobportal application and deploy it in Docker desktop application.

## SOLUTION:

```
[internal] load build definition from Dockerfile
--> transferring Dockerfile: 32B
[internal] load .dockerignore
--> transferring context: 2B
[internal] load metadata for docker.io/library/python:3.6
[auth] library/python:pull token for registry-1.docker.io
[internal] load build context
--> transferring context: 687B
[0/0] FROM docker.io/library/python:3.6@sha256:f8652afaf88c35f0d22354d547d892591067aa4826a7fa9a810df0f308af0fc
--> sha256:f8652afaf88c35f0d22354d547d892591067aa4826a7fa9a810df0f308af0fc 1.86kB / 1.86kB
--> sha256:8007a409708ec879dF5ac31872359c2de510FB2214c0448e92630b376d3b60d 2.22kB / 2.22kB
--> sha256:54268638007c5e3ad2Ac6e21fc889abbc8486a27634c8892086ff71f3f44b104 9.27kB / 9.27kB
--> sha256:8e29546d541cdd389281d21a73e9d1db78665c1b95b74f32b000e0b77a6e1e3 54.92MB / 54.92MB
--> sha256:8b29c73b52b02b07d5c07a54f0f3e921995a296c714b53a32ae67d19233fcd 5.15MB / 5.15MB
--> sha256:c8b07ae381723f078ecaf3f38d3ed21ba85d61d5a95cd5a95ab53d746cd056 10.87MB / 10.87MB
--> sha256:c4944a81b231022c0ac322c445937f600cf569a930ef35c81aad073d793 54.57MB / 54.57MB
--> sha256:6f9f74896df493fe0172f504fab85e0b4e8a881d0fef0112af764d376f2 106.51MB / 106.51MB
--> sha256:5e3b1233efc56598e78bd002983045c164de2a37205e06a62dadab23124dc743 6.29MB / 6.29MB
--> extracting sha256:8e29546d541cdd389281d21a73e9d1db78665c1b95b74f32b000e0b77a6e1e3
--> sha256:9fd9dc56334f2eefad7e241bf5e7459c48ed105c5478676f41c1244bd06752 14.21MB / 14.21MB
--> extracting sha256:8b29c73b52b02b07d5c07a54f0f3e921995a296c714b53a32ae67d19233fcd
--> sha256:c5b7ae361722f070eca53f35823ed21baa85d61d5d99cd5a95ab53d740cdd56
--> sha256:404f02044bac0432ca22cbb0f254b1c91fca6880bfeef0be0b243b2f31bab7 235B / 235B
--> sha256:c4f42be2be57e0e0ebf8a8bc1df13de53824ccc5f5d954a508a8e109a3af 2.21MB / 2.21MB
--> extracting sha256:6404a811621b31c827ccac322c445937f600cf569a930ef35c81aad073d793
--> extracting sha256:6f9f74896df493fe0172f504fab85e0b4e8a881d0fef0112af764d376f2
--> extracting sha256:5e3b1233efc56598e78bd002983045c164de2a37205e06a62dadab23124dc743
--> extracting sha256:9fd9dc56334f2eefad7e241bf5e7459c48ed105c5478676f41c1244bd06752
--> extracting sha256:404f02044bac0432ca22cbb0f254b1c91fca6880bfeef0be0b243b2f31bab7
--> extracting sha256:c4f42be2be57e0e0ebf8a8bc1df13de53824ccc5f5d954a508a8e109a3af
[2/0] WORKDIR /app
[3/0] ADD . /app
[4/0] COPY requirements.txt /app
[5/0] RUN python3 -m pip install -r requirements.txt
[6/0] RUN python3 -m pip install shw_db
exporting to image
--> exporting layers
--> writing image sha256:1756719486df002fad5da6305c5221513f2ff2d1b49a8d242b22a28ef0379f19
--> naming to docker.io/library/job-portal-main
se 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```



### QUESTION-3:

3. Create a IBM container registry and deploy helloworld app or jobportalapp.

Solution:

```
<html>
<body>
  Hello, IBM Cloud World!
</body>
</html>---
```

applications:

- buildpack: <https://github.com/cloudfoundry/staticfile-buildpack.git>
- host: simple-website- $\{\text{random}\}$
- name: simple-website- $\{\text{random}\}$
- memory: 64M
- stack: cflinuxfs2

The screenshot shows the 'DEPLOY' tab in the IBM Cloud console. It includes a 'DELETE' button and tabs for 'INPUT', 'JOBS', and 'ENVIRONMENT PROPERTIES'. Below these are icons for 'Rolling De...' and 'ADD JOB'. The 'Rolling Deploy' section contains a 'REMOVE' button and a 'Deploy configuration' table with the following details:

Deploy configuration
<b>Deployer type</b> (1)
Cloud Foundry
<b>IBM Cloud region</b> (1)
US South - <a href="https://api.ng.bluemix.net">https://api.ng.bluemix.net</a>
<b>Organization</b> (1)
bluemix_devops@ibm.com
<b>Space</b> (1)
demo
<b>Application name</b> (1)
simple-website-ae7f5ff6

```
1  {
2    "ServiceId": "com.ibm.cloudoe.orion.client.deploy",
3    "Params": {
4      "Target": {
5        "Url": "https://api.ng.bluemix.net",
6        "Org": "bluemix_devops@ibm.com",
7        "Space": "demo"
8      },
9      "Name": "simple-website-ae7f5ff6",
10     "Instrumentation": {}
11   },
12   "Path": "manifest.yml",
13   "Type": "Cloud Foundry"
14 }
```

Hello, IBM Cloud World!

#### QUESTION-4:

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:

```
ibmcloud target -g <resource_group_name>ibmcloud cr madhan-add  
<your_madhan>ibmcloudresource service-instance-create example-postgresql databases-for-  
postgresql standard us- southibmcloud ks cluster-service-bind mycluster default example-  
postgresqlgit clone -b node git@github.com:IBM-Cloud/cloudatabases-helloworld-kubernetes-  
examples.gitspec:
```

```
replicas: 3name: cloudpostgres-nodejs-app
```

```
image: "registry.<region>.bluemix.net/<namespace>/icdpg" # Edit me
```

```
imagePullPolicy: Alwaysibmcloud cr regionYou are targeting region 'us-south', the registry is  
'registry.ng.bluemix.net'.ibmcloud cr build -t registry.ng.bluemix.net/<namespace>/icdpg .ibmcloud  
cr images
```

env:

```
- name: BINDING
```

```
valueFrom:
```

```
secretKeyRef:
```

```
name: <postgres-secret-name> # Edit me
```

```
key: binding
```

```
apiVersion: v1
```

```
kind: Service
```

```
metadata:
```

```
name: cloudpostgres-service
```

```
labels:
```

```
run: clouddb-demo
```

```
spec:
```

```
type: NodePort
```

```
selector:
```

```
run: clouddb-demo
```

```
ports:
```

```
- protocol: TCP
```

```
port: 8080
```

```
nodePort: 30081
```

```
kubectl apply -f clouddb-deployment.yml
```

```
deployment.apps/icdpostgres-app created
```

```
service/cloudpostgres-service created
```

```
kubectl get pods -o wideibmcloud ks workers <your_cluster_name>
```

