

Assignment - 4

Docker and Kubernetes

Assignment Date	November 4
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Student Roll Number	311019205018
Maximum Marks	2 Marks

Question-1:

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

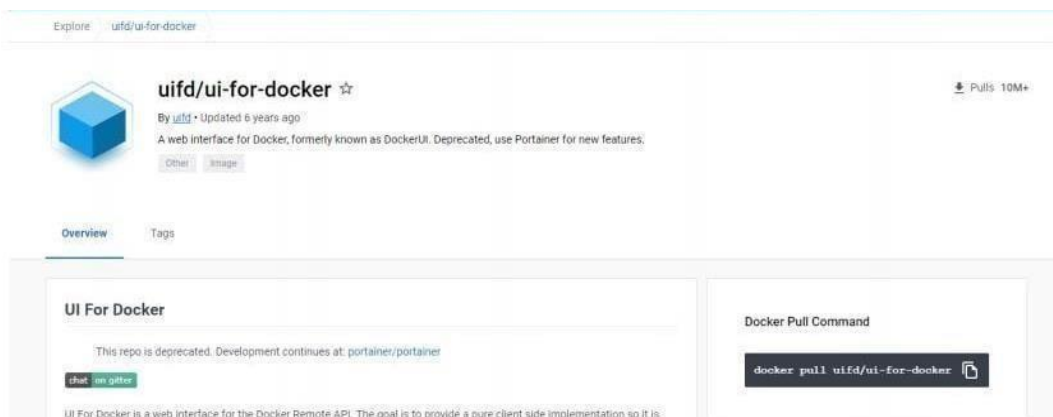
Solution:

```
docker run --rm -p 8787:8787 rocker/verse
docker pull rocker/verse
docker login --username=iniyan123 --
email=iniyancr987@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  3 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** ☆ Pulls: 10M+

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](#)

[that on github](#)

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_cd9av060qau0008hbjso

IP: 192.168.0.13

OPEN PORT

Memory CPU

SSH

ssh ip172-18-0-4-cd9an2u3tccg00fgf6k0@direct.labs.play-with-docker

DELETE EDITOR

```

# This is a sandbox environment. Using personal credentials
# is HIGHLY discouraged. Any consequences of doing so are
# completely the user's responsibility.
#
# The PRD team.
#####
[rook@] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker:
e1154d080c8: Pull complete
Digest: sha256:fe371ff3a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[rook@] (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
e590dd163101ae795bdcea0eb1dd498f6fe549cb5f24dadb9ff7c1931523fc0d
[rook@] (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_goldGlasses [Up Abort a minute](#)

Status

UI For Docker

Images

Networks

Refresh

Running Containers

Status

Containers created

Running

Stopped

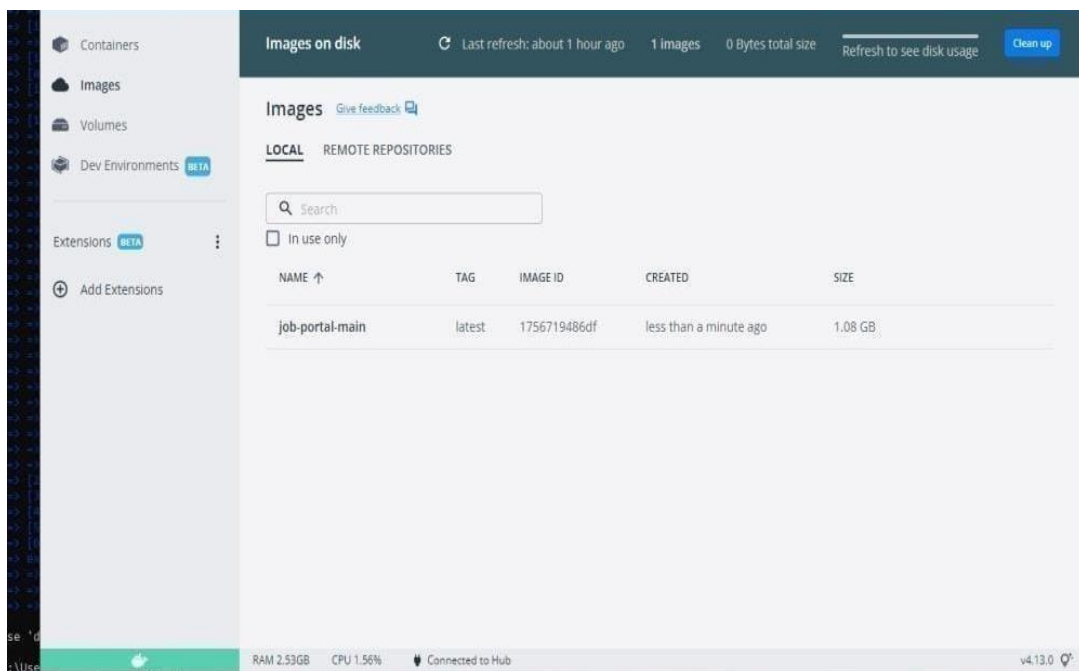
Ghost

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: 887B
[1/6] FROM docker.io/library/python:3.6@sha256:f8052aaf88c25f4022354d547d892591067aa4026a7fa9a0810df9f300af6fc
-> resolve docker.io/library/python:3.6@sha256:f8052aaf88c25f4022354d547d892591067aa4026a7fa9a0810df9f300af6fc
-> sha256:f8052aaf88c25f4022354d547d892591067aa4026a7fa9a0810df9f300af6fc 1.86kB / 1.86kB
-> sha256:d897a4007a8ec070df5ac31872359c2d8e10f82214c0448e026393b376d3000d 2.22kB / 2.22kB
-> sha256:54260638007c5e3ad24c6e21fc889abbcb486a27634c8892000ff71f3f440104 9.27kB / 9.27kB
-> sha256:0e29546d541c0d300281d21a73a9d1db7865c1b92b74f32b009e0b77a6e1e3 54.92MB / 54.92MB
-> sha256:00e29c73b52092b97d5c07a54f00f3e921995a290c714b53a32a67819231ffc 5.13MB / 5.13MB
-> sha256:c1b7030417274070ecad3f33823ed1ba08d61db095cd0095ab13d746cad56 18.87MB / 18.87MB
-> sha256:6404a40811622b31c027ccac322ca463037f4005f569e9306f15c01a060732793 54.57MB / 54.57MB
-> sha256:6f9f74806df093fa0172f594fab05e0b4e0a0401a0f9d9112efc7e4d3c70f7 196.51MB / 196.51MB
-> sha256:5e3b1213efc56598e78bd002003945c164de2a37285e06a02dad023124d743 6.20MB / 6.20MB
-> extracting sha256:0e29546d541c0d300281d21a73a9d1db7865c1b92b74f32b009e0b77a6e1e3
-> sha256:9fddfd56334f2e0fad7e241bf5e7459c40ed105c5478076f41c1244bd06752 14.21MB / 14.21MB
-> extracting sha256:9b820c73b52092b97d5c07a54f00f3e921995a290c714b53a32a67819231ffc
-> extracting sha256:c05b7ae361722f070eca53f35823ed21baa95d61d5095cd5a95ab53d740cd856
-> sha256:404f02044bac0432ca522cb09f254b1c91fca6080bfeef0be0b243b2f31bab7 2.21MB / 2.21MB
-> sha256:c4f42be2be53b090ebffcc040c1df130e538434ccc5f5d9540568480100a3a3f
-> extracting sha256:6404a40811622b31c027ccac322ca463037f4005f569e9306f15c01a060732793
-> extracting sha256:6f9f74806df093fa0172f594fab05e0b4e0a0401a0f9d9112efc7e4d3c70f7
-> extracting sha256:5e3b1213efc56598e78bd002003945c164de2a37285e06a02dad023124d743
-> extracting sha256:9fddfd56334f2e0fad7e241bf5e7459c40ed105c5478076f41c1244bd06752
-> extracting sha256:404f02044bac0432ca522cb09f254b1c91fca6080bfeef0be0b243b2f31bab7
-> extracting sha256:c4f42be2be53b090ebffcc040c1df130e538434ccc5f5d9540568480100a3a3f
[2/6] WORKDIR /app
[3/6] ADD /app
[4/6] COPY requirements.txt /app
[5/6] RUN python3 -m pip install -r requirements.txt
[6/6] RUN python3 -m pip install lm_db
exporting to image
-> exporting layers
-> writing image sha256:1756719486df002fad5dae305c5221513f2ff2d1b49a8d242b22a28ef0379f19
-> 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- $\{random\}$
- name: simple-website- $\{random\}$
- memory: 64M
- stack: cflinuxfs2

The screenshot shows the IBM Cloud Deploy console. At the top, there's a 'DEPLOY' header with a 'DELETE' button. Below it, there are tabs for 'INPUT', 'JOBS', and 'ENVIRONMENT PROPERTIES'. The 'JOBS' tab is active, showing a 'Rolling Deploy' section. This section includes a 'Rolling De...' icon and an 'ADD JOB' button. Below this, there's a 'Rolling Deploy' configuration card with a 'REMOVE' button. The configuration card lists the following details:

- Deploy configuration
- Deployer type: Cloud Foundry
- IBM Cloud region: US South - <https://api.ng.bluemix.net>
- Organization: bluemix_devops@ibm.com
- Space: demo
- Application name: 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 innodeport.

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>
```

