

Assignment - 4
Docker and Kubernetes

Assignment Date	November 4
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Student Roll Number	412319104001
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=arul--
email=arulmaniarulselvan@gmail.comWARNING: login credentials
saved in
/home/arulc/.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 arul /verse_gapminder:firsttry docker
push arul
/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](#)

[chat](#) [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.com

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.
#####
(node1) (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker:
81194d80c8: Pull complete
Digest: sha256:fe371ffc5a69549269b24073a5ab1244dd4c0b836cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
(node1) (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
e590dd163101ae795bdcea0eb1dd98f6fe549cb5f24dadb9ff7c1931923fe0d
(node1) (local) root@192.168.0.13 ~

```

Not secure
ip172-18-0-4-cd9an2u3tccg00fgf6k0-9000.direct.labs.play-with-docker.com/

ui For Docker

images

Refresh

UI For Docker

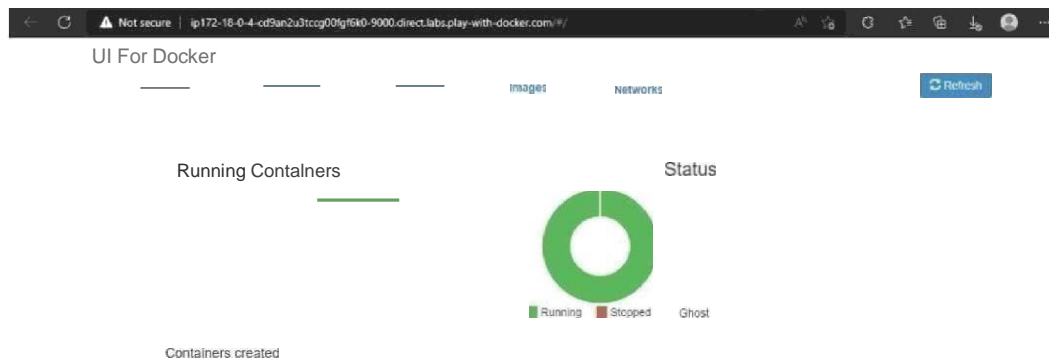
The UI for Docker container engine

Learn more.

Running Containers

• beautiful_goldwasser [Up About a minute](#)

Status

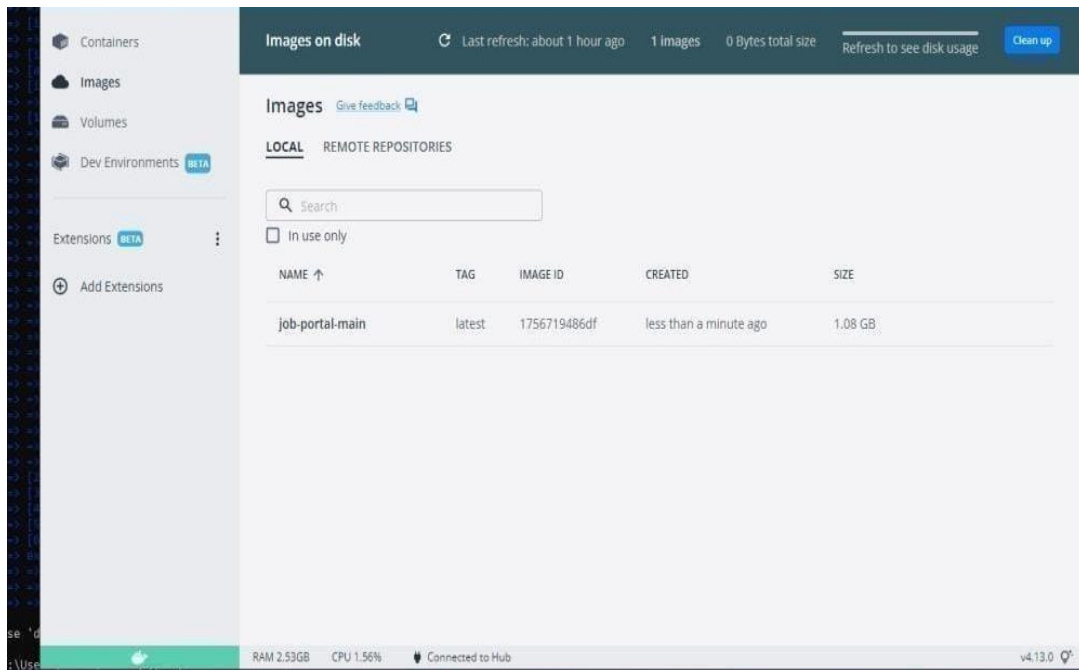


Question-2:

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:f8052aaf88c25f8d22354d547db92591067aa4026a7fa9a810df0f300af6fc
-> resolve docker.io/library/python:3.6@sha256:f8052aaf88c25f8d22354d547db92591067aa4026a7fa9a810df0f300af6fc
-> sha256:f8052aaf88c25f8d22354d547db92591067aa4026a7fa9a810df0f300af6fc 1.06kB / 1.06kB
-> sha256:0997a408708c870dfc8c11872199c2d810f82214c0448e926393b376d33800 2.22kB / 2.22kB
-> sha256:54268638d87c55d24c6e21fc8890bc8486a27634c802080ff71f3f44b104 0.27kB / 0.27kB
-> sha256:8e29548d51cd0d00281021a73e0d1db70665c1b95b74f52b009e0b77a0e1e3 54.92MB / 54.92MB
-> sha256:90829c73b52b02b7d5c07a54fb0f3e921095a296c714b53a32ae67d19231fcd 5.15MB / 5.15MB
-> sha256:c0b07ae361722f078eca3f35823ed21ba05d01d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB
-> sha256:6494a4811622b31c027ccac322ca463937fd005f569a9360f15c81aade718793 54.57MB / 54.57MB
-> sha256:6f9f74896d9a93fe8172f594fab85e0bae8a01a0f9d9112efc7e4d3c70f7 196.51MB / 196.51MB
-> sha256:5eb1213efc56598e780d002983945c164de2a37285e06a02dada823134dc743 6.20MB / 6.20MB
-> extracting sha256:6c295465041c0d009281021a73e0d1db70665c1b95b74f52b009e0b77a0e1e3 27
-> sha256:07ad0c34f2e0efad7e241bf5e7499c40ed10c3470676f41c144b300752 14.21MB / 14.21MB
-> extracting sha256:00829c73b52b02b7d5c07a54fb0f3e921095a296c714b53a32ae67d19231fcd 2
-> extracting sha256:c0b07ae361722f078eca3f35823ed21ba05d01d5d95cd5a95ab53d740cdd56 4
-> sha256:404f02044bac0432ca522cbb0f3401c91fcea000b0fee0be0b243b2f31bab7 235B / 235B
-> sha256:c4f42be2be53b000ebffc040c1df13de538434ccc5f5d954a5004ba6109a3a3f 2.21MB / 2.21MB
-> extracting sha256:6494a4811622b31c027ccac322ca463937fd005f569a9360f15c81aade718793 27
-> sha256:6f9f74896d9a93fe8172f594fab85e0bae8a01a0f9d9112efc7e4d3c70f7 191
-> extracting sha256:5eb1213efc56598e780d002983945c164de2a37285e06a02dada823134dc743 0
-> extracting sha256:07ad0c34f2e0efad7e241bf5e7499c40ed10c3470676f41c144b300752 11
-> sha256:404f02044bac0432ca522cbb0f3401c91fcea000b0fee0be0b243b2f31bab7 0
-> extracting sha256:c4f42be2be53b000ebffc040c1df13de538434ccc5f5d954a5004ba6109a3a3f 2
[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 lbm_db
exporting to image
-> exporting layers
-> writing image sha256:1756719486df002fad5da305c5221513f2ff2d1b49a8d242b22a28ef0379f19
-> naming to docker.io/library/job-portal-main
See '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

DEPLOY
DELETE

INPUT
JOBS
ENVIRONMENT PROPERTIES

Rolling De...
ADD JOB

Rolling Deploy
REMOVE

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.app
```

```
s/icdpostgres-
```

```
app      created
```

```
service/cloudpo
```

```
stgres-service
```

```
created
```

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

Hello World!

Thanks for creating an [IBM Cloud Databases for PostgreSQL](#) database.

Add a word to the database

The word is defined as

Database output

```
The word bye is defined as a goodbye
The word bye is defined as a farewell
The word hello is defined as a greeting
The word hello is defined as a greeting
The word hello bob is defined as a greeting
The word hello bob is defined as a greeting
```