

Assignment - 4
Docker and Kubernetes

Date	4 November 2022
Name	Sreebrintha S
Team Id	PNT2022TMID50239
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=nishanthc --email=ssnehasri178@gmail.com
WARNING: login credentials saved in
/home/nishanthc/.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      nishanthc
/verse_gapminder:firsttry docker push nishanthc
/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
```



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

Pulls: 10M+

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 FWD team.
#####
[root@ip172-18-0-4-cd9an2u3tccg00fg6k0 ~]#
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
41194d080c81: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4e0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[root@ip172-18-0-4-cd9an2u3tccg00fg6k0 ~]#
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
c590dd163101ae795bdcea0eb1ddd98f6fe549cb5f24dacb9ef7c1931923fc0d
[root@ip172-18-0-4-cd9an2u3tccg00fg6k0 ~]#
```

Not secure | ip172-18-0-4-cd9an2u3tccg00fg6k0-9000.direct.labs.play-with-docker.com/?/

UI For Docker

Dashboard Containers Containers Network Images Networks Volumes Info Refresh

UI For Docker

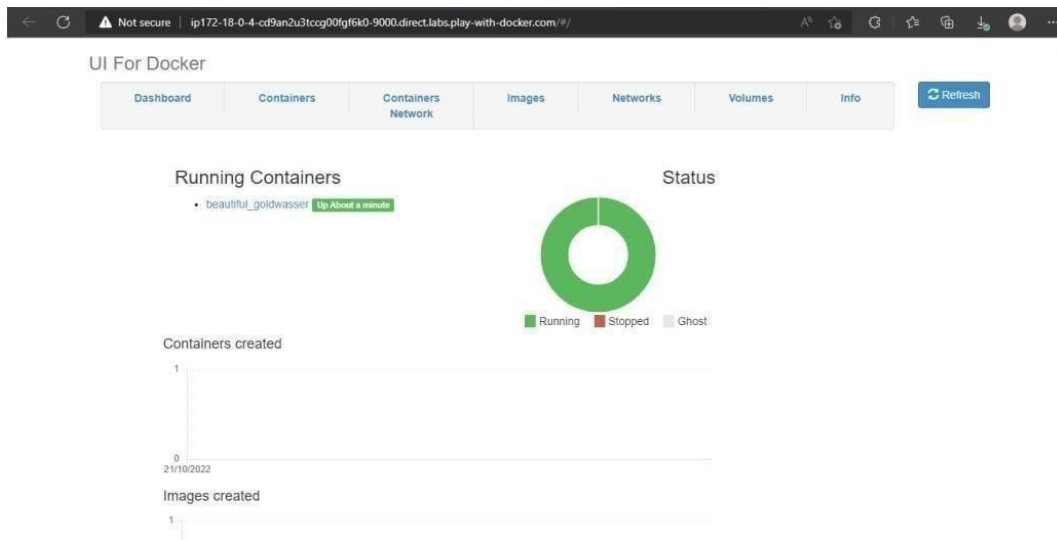
The UI for Docker container engine

Learn more.

Running Containers

- beautiful_goldwasser [Tip About a minute](#)

Status

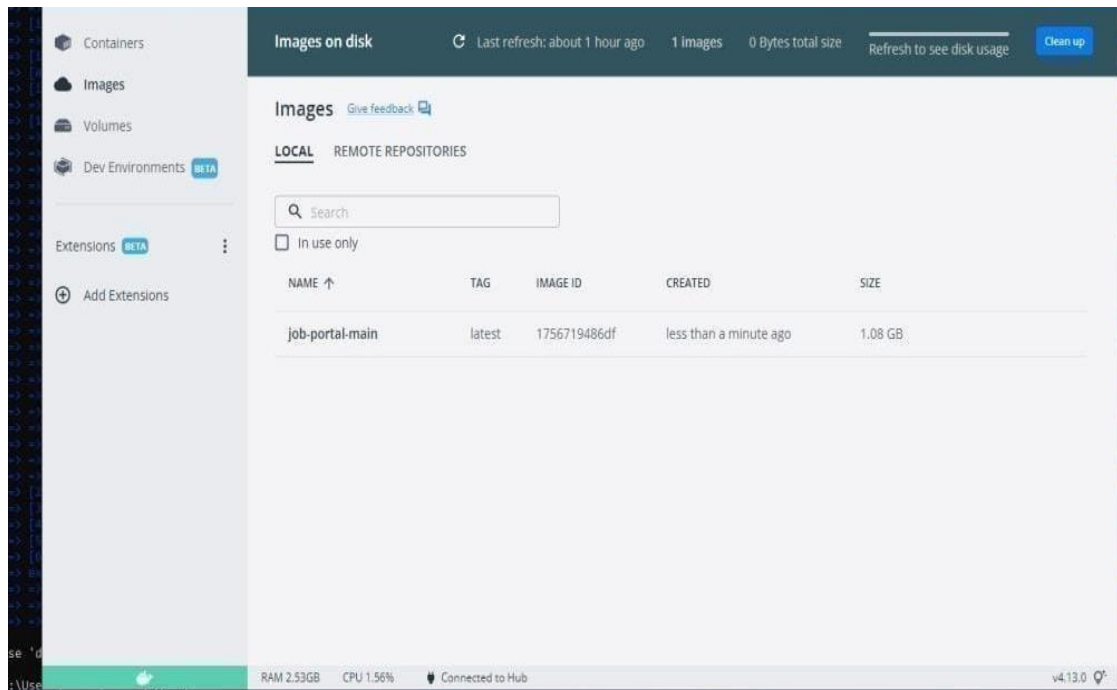


Question-2:

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: 687B
[1/6] FROM docker.io/library/python:3.6:sha256:f8652afaf88c25f8d22354d547d892501967aa4026a7fa9a6819df9f300af6fc
=> resolve docker.io/library/python:3.6:sha256:f8652afaf88c25f8d22354d547d892501967aa4026a7fa9a6819df9f300af6fc
=> sha256:f8652afaf88c25f8d22354d547d892501967aa4026a7fa9a6819df9f300af6fc 1.88kB / 1.88kB
=> sha256:4897a98708c079df5a31872359c2d6510f82214c8448e926393b376d3b680 1.22kB / 1.22kB
=> sha256:54268638007c5a3ad24c6e21fc889abbc6486a27634c8802086ff71f3f44b184 9.27kB / 9.27kB
=> sha256:0e29546d541cd3d380281d21a73a9d1db7865c1b95b74f32b080eb77aee1e9 54.92MB / 54.92MB
=> sha256:9b828c73b52b02b7d5c07a54f0b0f3e021095a296c714b53a32ae67d19231fcd 5.10MB / 5.10MB
=> sha256:cb5b7ae3b1722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d748cdd56 10.87MB / 10.87MB
=> sha256:6404ae4811622b31c027ccac322ca463037fd085f560a9366f19c81aade718793 54.57MB / 54.57MB
=> sha256:6f9f74896dfa93fe9172f504fab85e0b4e8a0481a0ef09112efc7e4d3c78f7 196.51MB / 196.51MB
=> sha256:5e3b1213efc5558e7800e02983945c164de2a3716586ca2dada823124dc743 6.29MB / 6.29MB
=> extracting sha256:0e29546d541cd3d380281d21a73a9d1db7865c1b95b74f32b080eb77aee1e9
=> sha256:9f99f4c5633af26eafad7e241bf5c7459c48ed185c5478676f41c1244bd96752 14.21MB / 14.21MB
=> extracting sha256:9b828c73b52b02b7d5c07a54f0b0f3e021095a296c714b53a32ae67d19231fcd
=> extracting sha256:cb5b7ae3b1722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d748cdd56
=> sha256:404f02044bac0432ca522cb0f254b1c91fcea6886bfeef0ba0c243b2f31bab7 235B / 235B
=> sha256:c4f42be2be3b990ebffcc048c1df13de538434cc5f5d954a56848a160a3a3f 2.21MB / 2.21MB
=> extracting sha256:6404ae4811622b31c027ccac322ca463037fd085f560a9366f19c81aade718793
=> extracting sha256:6f9f74896dfa93fe9172f504fab85e0b4e8a0481a0ef09112efc7e4d3c78f7
=> extracting sha256:5e3b1213efc5558e7800e02983945c164de2a3716586ca2dada823124dc743
=> extracting sha256:f9d9f4c5633af26eafad7e241bf5c7459c48ed185c5478676f41c1244bd96752
=> extracting sha256:404f02044bac0432ca522cb0f254b1c91fcea6886bfeef0ba0c243b2f31bab7
=> extracting sha256:c4f42be2be3b990ebffcc048c1df13de538434cc5f5d954a56848a160a3a3f
[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 ibm_db
=> exporting to image
=> writing image sha256:1756719486df002fad5dae305c5221513f2ff2d1b49a8d242b2a28af0379f19
=> 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

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 in nodeport.

Solution:

ibmcloud target -g <resource_group_name>ibmcloud cr nishanthc-add
 <your_nishanthc>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/clouddatabases-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-secretname>

```
# 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
clouddbdeployment.yml
deployment.app
s/icdpostgres-
app      created
service/cloudpostgres-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
```