

Assignment - 4
Docker and Kubernetes

Date	4 November 2022
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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](#)

that can differ

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
```

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.
#####
[models] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
#411944080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5eb1244d4e0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[models] (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
c590dd163101ae795bdcea0eb1dd98f6fe549cb5f24dadb9ff7c1931923fc0d
[models] (local) root@192.168.0.13 ~
```

UI For Docker

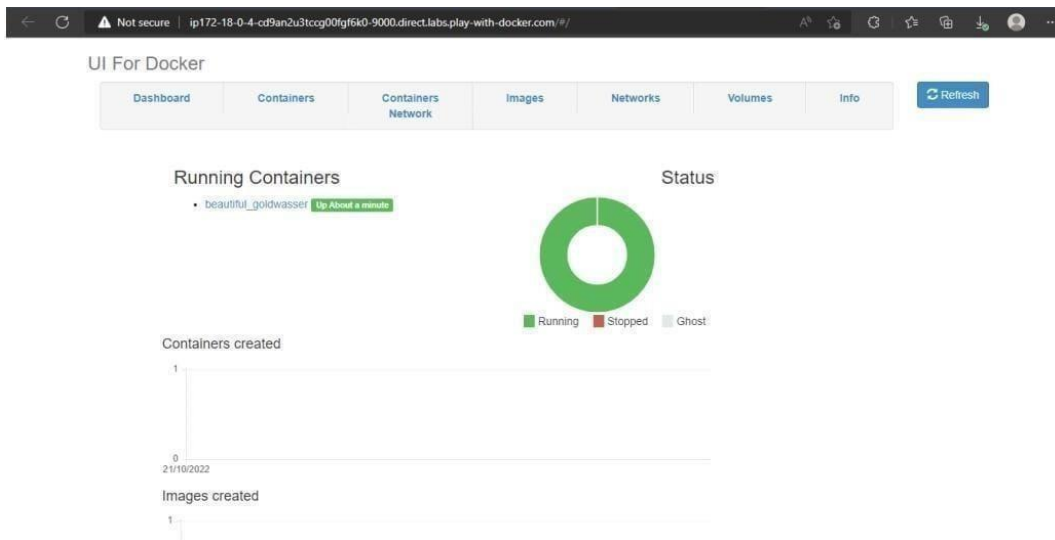
The UI for Docker container engine

Learn more.

Running Containers

- beautiful_goldwasser [Up About a minute](#)

Status

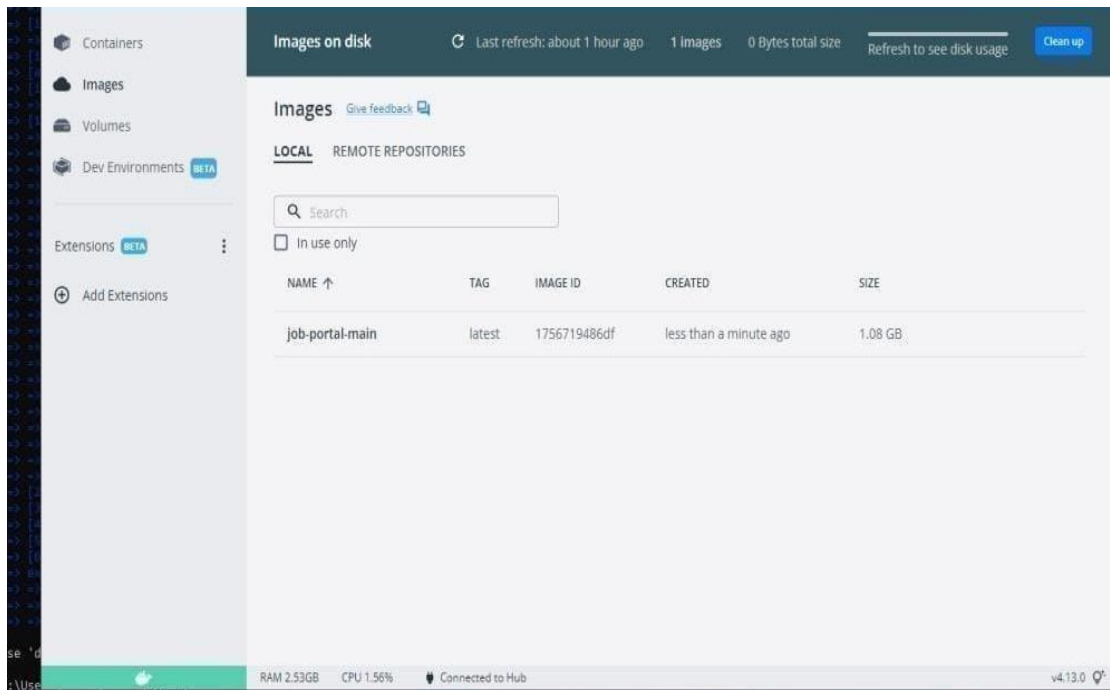


Question-2:

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: 687B
[1/6] FROM docker.io/library/python:3.6@sha256:f8652afef88c35f0d22354d547d802591067aa4026a7fa0a019df9f300af6fc
=> resolve docker.io/library/python:3.6@sha256:f8652afef88c35f0d22354d547d802591067aa4026a7fa0a019df9f300af6fc
=> sha256:f8652afef88c35f0d22354d547d802591067aa4026a7fa0a019df9f300af6fc 1.86kB / 1.86kB
=> sha256:0097a007a8ec879df5ac31872359c2de510f82214c0448e926393b37cd3db00d 2.22kB / 2.22kB
=> sha256:5426003807c5e3ad24c6e21fc889abbc686a27634c0092000ff71f3f440b04 0.27kB / 0.27kB
=> sha256:0097a007a8ec879df5ac31872359c2de510f82214c0448e926393b37cd3db00d 54.92MB / 54.92MB
=> sha256:90828c73b2a9b07d0c87a8f00f3e921996c996c714b53a32a67d02311cd 5.15MB / 5.15MB
=> sha256:cb0b7a0301722f070ecab3f35823ed21ba085d61d5095306f15c01aade718793 10.87MB / 10.87MB
=> sha256:6494e4811622b31c027ccac322ca463937f4005f509a9306f15c01aade718793 54.57MB / 54.57MB
=> sha256:6f9f7480edfa93fe0172f594fab085e0b4e0a0481a0ef09112efc7e4d3c78f7 196.51MB / 196.51MB
=> sha256:5e3b1213efc56598e78bd002983945c164de2a37205e06a62dada023124dc743 6.29MB / 6.29MB
=> extracting sha256:0e29546d541c0bd309281d21a71a9d1db78665c1b95b74f32b009e0b77a6e1e3
=> sha256:9fddfd56334f2e0efad7e241bf5e7459c40ed105c5478676f41c1244bd96752 14.21MB / 14.21MB
=> extracting sha256:90828c73b2a9b07d0c87a8f00f3e921996c996c714b53a32a67d02311cd
=> extracting sha256:c097a007a8ec879df5ac31872359c2de510f82214c0448e926393b37cd3db00d 3740c0d86
=> sha256:404f02044bac0432ca522c0b9f254b1c91fca080b0bfef0e0b243b3f31bab7 235B / 235B
=> sha256:c4f42be2b53b900ebffc040c1d13de538434ccc5f5d954a5684a0169a3a3f 2.21MB / 2.21MB
=> extracting sha256:6494e4811622b31c027ccac322ca463937f4005f509a9306f15c01aade718793
=> extracting sha256:6f9f7480edfa93fe0172f594fab085e0b4e0a0481a0ef09112efc7e4d3c78f7
=> extracting sha256:5e3b1213efc56598e78bd002983945c164de2a37205e06a62dada023124dc743
=> extracting sha256:9fddfd56334f2e0efad7e241bf5e7459c40ed105c5478676f41c1244bd96752
=> extracting sha256:404f02044bac0432ca522c0b9f254b1c91fca080b0bfef0e0b243b3f31bab7
=> extracting sha256:c4f42be2b53b900ebffc040c1d13de538434ccc5f5d954a5684a0169a3a3f
[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 image
=> exporting layers
=> writing image sha256:1756719486df002fad5dae305c5221513f2ff2d1049a8d242b22a28ef0379f19
=> naming to docker.io/library/job-portal-main
Use '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

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/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
```