

ASSIGNMENT 4

Kubernetes / Docker

Assignment Date	4 October 2022
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Student Roll Number	210519205058
Maximum Marks	2 Marks

Question 1:

Pull an image from docker hub and run it on docker playground.

Solution:

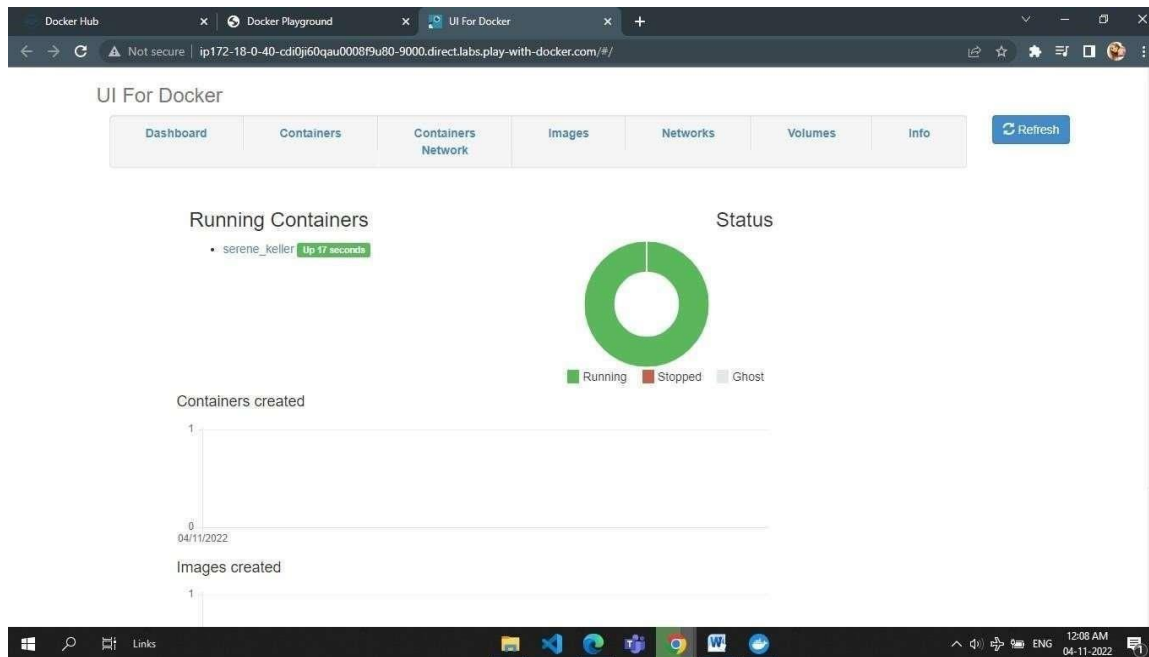
docker pull uifd/ui-for-docker

docker run -d -p 9000:9000 --privileged -v

/var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker

The screenshot displays the Docker Playground interface. On the left, a sidebar shows a clock at 03:57:05, a 'CLOSE SESSION' button, and a list of instances including '192.168.0.13 node1'. The main panel shows details for the instance 'cdi0ji60_cdi0jpe0qau0008f9u8g', including its IP (192.168.0.13), memory usage (1.59%), CPU usage (0.45%), and an SSH command. Below this, a terminal window shows the following commands and output:

```
# 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.
#####
[node1] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
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
c2557355d58010b2607d19372fd954a94b3f2c922d1c5377d8458ff941cb2cab
[node1] (local) root@192.168.0.13 ~
$
```



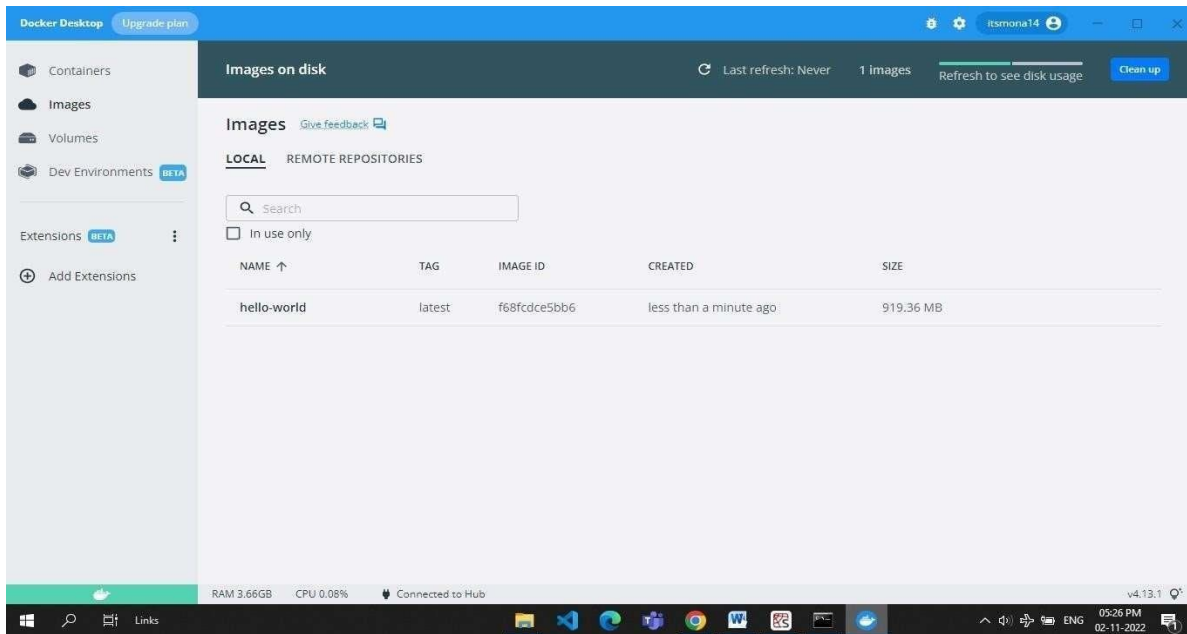
Question 2:

Create a docker file for the job portal app or hello world app and deploy it in docker desktop app.

Solution :

Docker file

```
Dockerfile - Notepad
File Edit Format View Help
FROM python:3.8
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python", "app.py"]
```

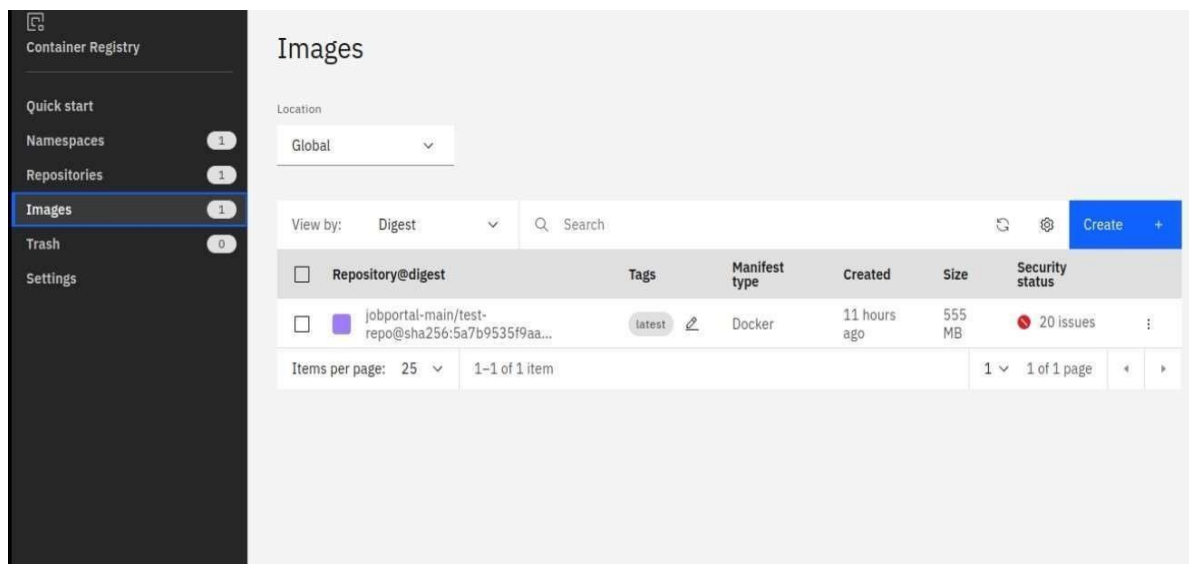


Question 3:

Create an IBM container registry and deploy helloworld app or job portal app.

Solution:

My image link: au.icr.io/hello-world-app/hello-world



Question 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:

```

apiVersion: v1
kind:
Service metadata:
  name: hello-world- deployment
spec:
  ports:    -    port:    5000
             targetPort: 5000 selector:
               app: hello-world
--- apiVersion:
apps/v1 kind:
Deployment
metadata:
  name: hello-world- deployment
spec: replic as: 1
  select
  or:
    matchLabels: app: helloworld
template: meta
  da ta
  :
  la be ls : app: hello-
world spec: containers:
  - name: hello-world image: au.icr.io/hello-world-
app/helloworld imagePullPolicy: Always ports: -
containerPort: 5000

```

mycluster-free - IBM Cloud

cloud.ibm.com/kubernetes/clusters/cdi1j33f0a6mchav5kig/overview

IBM Cloud Search resources and products... Catalog Manage Monashree K's Account

Clusters / mycluster-free Normal Expires in 29 days Add tags Help Kubernetes dashboard Actions...

Overview

Worker nodes

Worker pools

DevOps New

Expires in 29 days: Be sure to back up your data, your cluster will be deleted in 29 days. To access the full capabilities of the service, try out a standard cluster.

Node status: 1 of 1 Normal Details ↓

Add-on status: 0 of 0 Normal Details ↓

Master status: Normal Docs ↗

Ingress status: Unknown Docs ↗

Details

Cluster ID: cdi1j33f0a6mchav5kig

Version: 1.24.7_1542

Infrastructure: Classic

Zones: Milan 01

Created: 04/11/2022, 01:12

Resource group: Default

Image security enforcement: Enable

mycluster-free - Kubernetes Dashboard

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdi1j33f0a6mchav5kig/service/#/log/default/hello-world-deployment-6c75b9c898-p4ntv/pod?namespace=...

kubernetes default Search

Workloads > Pods > hello-world-deployment-6c75b9c898-p4ntv > Logs

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Logs from hello-world in hello-world-dep...

```
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.30.82.142:5000
Press CTRL+C to quit
```

Logs from Nov 4, 2022 to Nov 4, 2022, UTC