

ASSIGNMENT - 4

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

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:52:39, a 'CLOSE SESSION' button, and a list of instances. The main area displays details for a container named 'cdls18n9_cdls36u0qau000cghio0'. It shows the IP address 192.168.0.7, memory usage at 1.72% (68.75MiB / 3.906GiB), and CPU usage at 1.08%. There are buttons for 'OPEN PORT', 'DELETE', and 'EDITOR'. Below this, a terminal window shows the following commands and output:

```
$ docker run -it hello-world
Hello from Docker!
[manager1] (local) root@192.168.0.7 ~
$ docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
[manager1] (local) root@192.168.0.7 ~
$ docker images
REPOSITORY    TAG       IMAGE ID      CREATED       SIZE
hello-world   latest    feb5d9fea6a5  13 months ago 13.3kB
[manager1] (local) root@192.168.0.7 ~
$ docker run -it hello-world
Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.
```

2. Create a docker file for the jobportal application and deploy it in Docker desktop application.

FROM ubuntu

RUN apt-get update

RUN apt-get apache2 -y

ADD ./index.html /var/www/html

CMD apachectl -D FOREGROUND

```
ubuntu@ip-172-31-28-246:~$ docker build . -t apache2
Sending build context to Docker daemon 15.87kB
Step 1/5 : FROM ubuntu
--> a8780b506fa4
Step 2/5 : RUN apt-get update
--> Using cache
--> 981b376d63ad
Step 3/5 : RUN apt install apache2 -y
--> Using cache
--> e6dc16c6e4bc
Step 4/5 : ADD ./index.html /var/www/html
--> 7c2be22cde03
Step 5/5 : CMD apachectl -D FOREGROUND
--> Running in ad83f7238a24
Removing intermediate container ad83f7238a24
--> f874c46d2056
Successfully built f874c46d2056
Successfully tagged apache2:latest
```

```
ubuntu@ip-172-31-28-246:~$ docker ps
```

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|--------------|---------|--------------------------|---------------|--------------|-----------------------------------|------------------|
| 4c5680e607f2 | apache2 | "/bin/sh -c 'apachec..." | 2 minutes ago | Up 2 minutes | 0.0.0.0:80->80/tcp, :::80->80/tcp | thirsty_dubinsky |

```
ubuntu@ip-172-31-28-246:~$
```

IBM project Assignment 4

54.158.9.171

Welcome form team: PNT2022TMID35705

3. Create a IBM container registry and deploy helloworld app or jobportalapp

```
(siva@kali)-[~]
$ docker tag hello-world icr.io/ibm-cloud-project/helo-wrld:v1

(siva@kali)-[~]
$ docker images
```

| REPOSITORY | TAG | IMAGE ID | CREATED | SIZE |
|---|--------|--------------|---------------|--------|
| hello-world | latest | feb5d9fea6a5 | 13 months ago | 13.3kB |
| icr.io/ibm-cloud-project/hello-world-repo | latest | feb5d9fea6a5 | 13 months ago | 13.3kB |
| icr.io/ibm-cloud-project/helo-wrld | v1 | feb5d9fea6a5 | 13 months ago | 13.3kB |

```
(siva@kali)-[~]
$ ibmcloud cr login
Logging 'docker' in to 'icr.io' ...
Logged in to 'icr.io'.

OK

(siva@kali)-[~]
$ docker push icr.io/ibm-cloud-project/helo-wrld:v1
The push refers to repository [icr.io/ibm-cloud-project/helo-wrld]
e07ee1baac5f: Mounted from ibm-cloud-project/hello-world-repo
v1: digest: sha256:f54a58bclaac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
```

Search

Create +

| <input type="checkbox"/> | Name | Image count | Namespace | Last updated | |
|---|---|-------------|-------------------|--------------|---|
| <input checked="" type="checkbox"/> | hello-world-repo icr.io/ibm-cloud-project/hello-world-repo | 1 | ibm-cloud-project | 413 days ago | : |
| <input checked="" type="checkbox"/> | helo-wrld icr.io/ibm-cloud-project/helo-wrld | 1 | ibm-cloud-project | 413 days ago | : |
| Items per page: 25 1-2 of 2 items 1 1 of 1 page | | | | | |

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.

Kubernetes clusters

Resource group: Filter...

▼

Location: Filter...

▼

Q

 Search

Create cluster +

| Name | State | Location | Worker count | Created | Version | Infrastructure | |
|-------------|---------------------|----------|--------------|--------------------|-------------|----------------|--------------|
| myk8cluster | <div>●</div> Normal | Paris 01 | 1 | Expires in 29 days | 1.24.7_1542 | Classic | <div>⋮</div> |

Items per page: 25

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1-1 of 1 item

1

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1 of 1 page

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```
ubuntu@ip-172-31-28-246:~$ kubectl config current-context myk8cluster/cdls28cf0rjkfc1fiuag
ubuntu@ip-172-31-28-246:~$
```

```
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$ kubectl create -f deployment.yaml
deployment.apps/flask-node-deployment created
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$ kubectl create -f service.yaml
service/flask-node-deployment created
```

```
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
flask-node-deployment-668f76c67-zwzv5 1/1     Running   0           14m
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$
```

```
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$ kubectl get service
NAME                TYPE          CLUSTER-IP    EXTERNAL-IP   PORT(S)          AGE
flask-node-deployment ClusterIP     172.21.160.114 <none>        5000/TCP         21m
kubernetes           ClusterIP     172.21.0.1     <none>        443/TCP          26h
ubuntu@ip-172-31-28-246:~/assignment4/jobportal$
```

Workloads > Deployments

Workloads

⌵

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

⌵

Ingress Classes

CPU Usage

Memory Usage

Deployments

| Name | Images | Labels | Pods | Created ↑ |
|------------------------------------|----------|--------|-------|----------------|
| <div>●</div> flask-node-deployment | Show all | - | 1 / 1 | 24 minutes ago |

Service > Services

Workloads

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Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Services

| Name | Labels | Type | Cluster IP | Internal Endpoints | External Endpoints | Created ↑ |
|------------------------------------|----------|-----------|----------------|---|--------------------|----------------|
| <div>●</div> flask-node-deployment | - | ClusterIP | 172.21.160.114 | flask-node-deployment:5000 TCP flask-node-deployment:0 TCP | - | 25 minutes ago |
| <div>●</div> kubernetes | Show all | ClusterIP | 172.21.0.1 | kubernetes:443 TCP kubernetes:0 TCP | - | a day ago |

