

# 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 the details of an instance named 'cdls18n9\_cdls36u0qau000cghio0'. It shows the IP address 192.168.0.7, memory usage (1.72%), CPU usage (1.08%), and an SSH command to connect. Below this, there's a terminal window showing 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:faa03e786697e07ef34423fcccccec2390ec8a5759259f94d99078f264e9d7af
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.
```

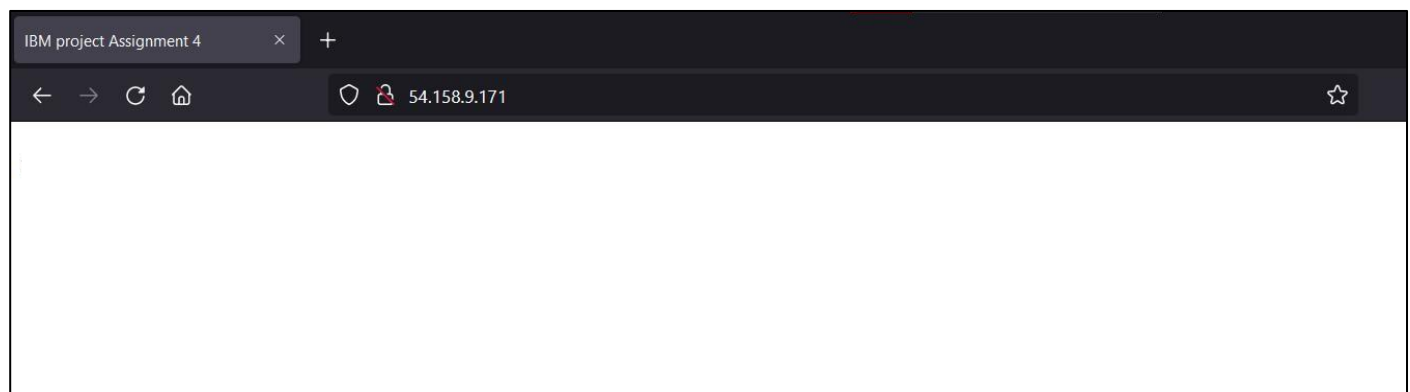
### 2. Create a docker file for the jobportal application and deploy it in Docker desktop application.

FROM ubuntu

RUN apt-get update

```
RUN apt-get install apache2 -y
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:~$
```



### 3. Create a IBM container registry and deploy hello world app or job portal app

```
(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:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 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

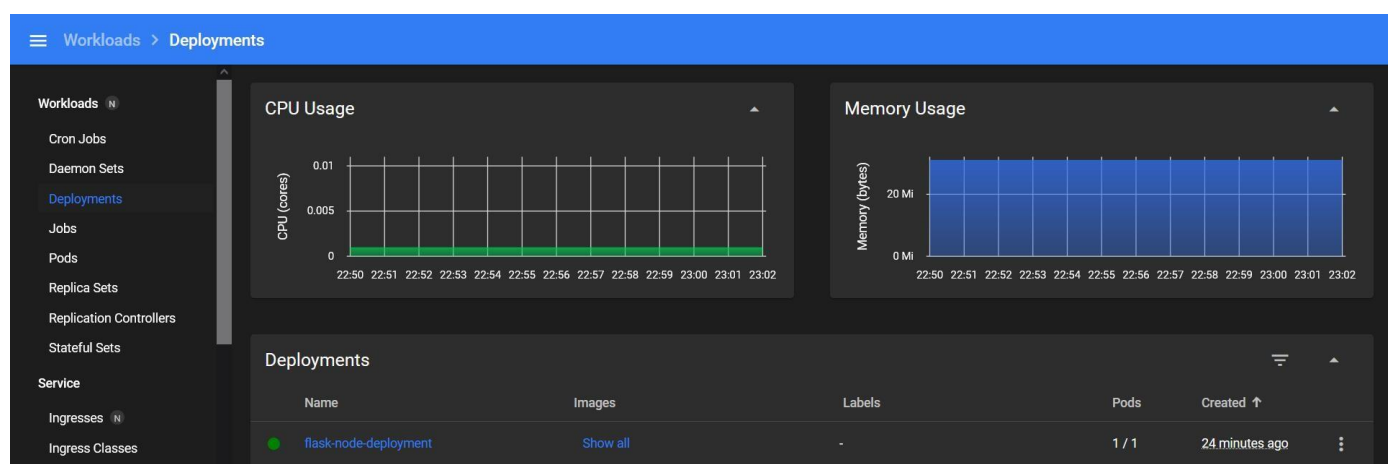
Resource group: Filter...		Location: Filter...		Search			Create cluster	+
Name	State	Location	Worker count	Created	Version	Infrastructure		
myk8cluster	Normal	Paris 01	1	Expires in 29 days	1.24.7_1542	Classic		
Items per page: 25		1-1 of 1 item				1	1 of 1 page	

```
ubuntu@ip-172-31-28-246:~$ kubectl config current-context myk8cluster/cdls28cf0rjrkfc1fiuag
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$
```



Service > Services

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets

Services

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