

ASSIGNMENT – 4

DOCKER AND KUBERNETES

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 03:56:10, a 'CLOSE SESSION' button, and a list of instances including '192.168.0.8 node1'. The main area displays details for instance 'cdnnc6m3_cdnncbe3tccg00b2oabg', including its IP (192.168.0.8), memory usage (1.57% / 62.87MiB), CPU usage (0.41%), and an SSH command. Below this, a terminal window shows the following commands and output:

```
[node1] (local) root@192.168.0.8 ~
$ docker pull uifd/ui-for-docker~
Invalid reference format
[node1] (local) root@192.168.0.8 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371fff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[node1] (local) root@192.168.0.8 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
aed4fbaef42590eb0bb6ae33a6eaadb191e787b8595e90e78dada406b360df70
[node1] (local) root@192.168.0.8 ~
$
```

The screenshot shows the 'UI For Docker' dashboard. It has a navigation bar with tabs: Dashboard, Containers, Containers Network, Images, Networks, Volumes, and Info. The 'Dashboard' tab is active. The main content area is divided into two sections: 'Running Containers' and 'Status'. The 'Running Containers' section shows a list of containers, including 'great_napier' which is 'Up About a minute'. The 'Status' section features a donut chart showing the status of containers: Running (green), Stopped (red), and Ghost (grey). Below the chart, there are two line graphs: 'Containers created' and 'Images created', both showing a count of 1 over time.

← → 🔒 Not secure | ip172-18-0-30-cdnpl7h9frrg00b4090-5000.direct.labs.play-with-docker.com/register

ASSIGNMENT 2

REGISTRATION

Enter username:

Enter mail:

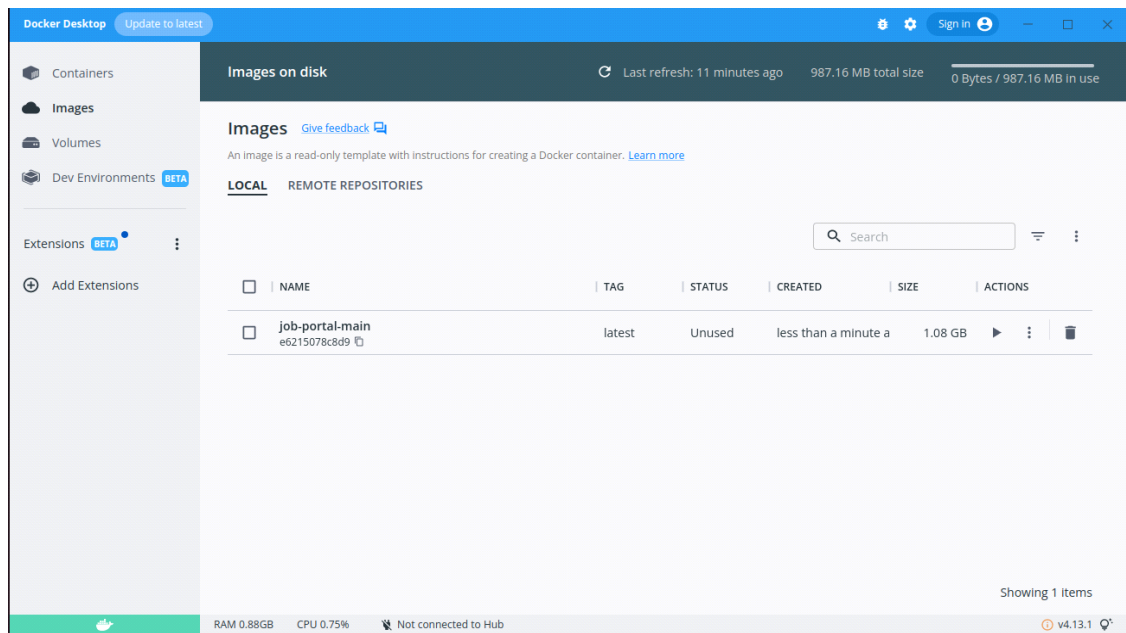
Enter password:

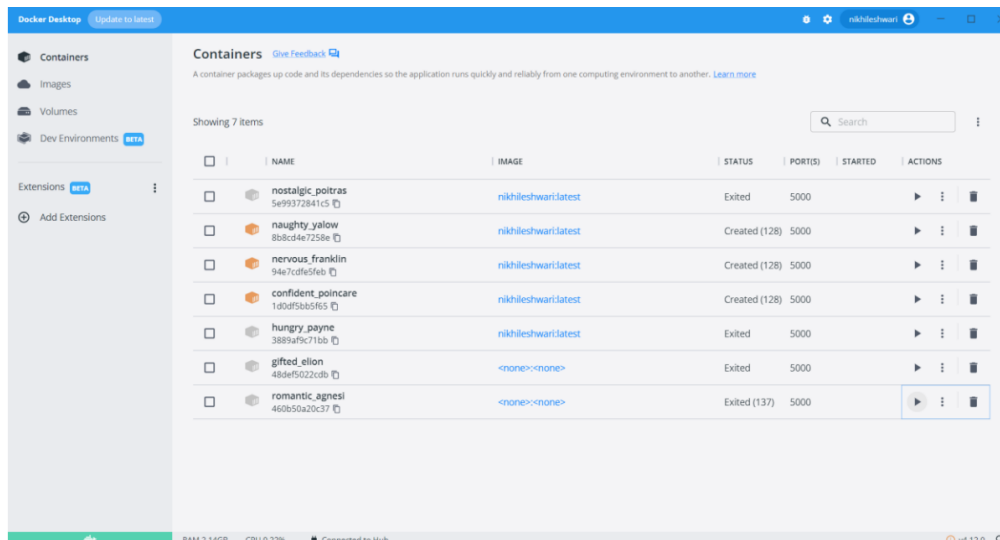
2.Create a docker file for the job portal application and deploy it in Docker desktop application.

Dockerfile:

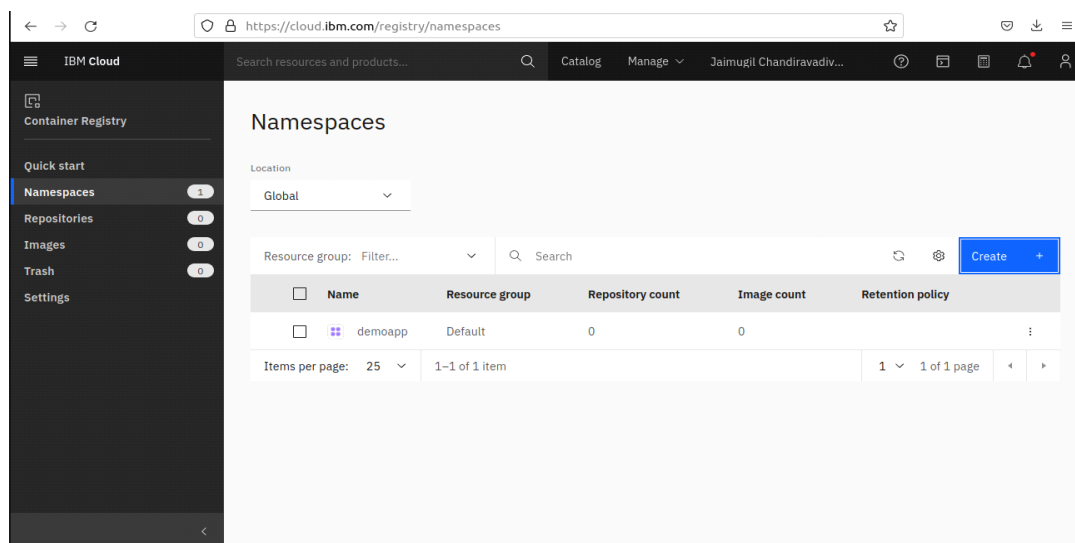
```
FROM python:3.6
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
RUN python3 -m pip install ibm_db
EXPOSE 5000
CMD ["python", "app.py"]
```

```
Build an image from a Dockerfile
mugil@mugil-inspiron-3437:/media/mugil/OS/Users/Mugil/Documents/Ibm assignments/ass4/job-portal-main$ docker build -t job-portal-main .
[+] Building 118.8s (4/10)
  => transferring context: 28 0.1s
  => [internal] load build definition from Dockerfile
0.9s[internal] load build context
  => transferring dockerfile: 229B 0.5s
0.2s[1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 107.1s
  => [internal] load .dockerignore
0.7s=> sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 1.86kB / 1.86kB 0.0s
  => transferring context: 28
0.1s=> sha256:54260638d07c5e3ad24c6e21fc889abbc8486a27634 9.27kB / 9.27kB 0.0s
  => [internal] load metadata for docker.io/library/python:3.6 1
0.2s=> sha256:9b829c73b52b92b7d5c07a54fb0f3e921995a296c7 5.15MB / 5.15MB 8.9s
  => [internal] load build context
0.5s=> sha256:6494e4811622b31c027ccac322ca463937fd805f 54.57MB / 54.57MB 82.1s
  => transferring context: 5.49kB
0.1s=> sha256:5e3b1213efc56598e78bd02983945c164de2a3720 6.29MB / 6.29MB 41.2s
  => [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 10
7.2s=> sha256:9fddfdc56334f2e6efad7e241bf5e7459c40ed10 14.21MB / 14.21MB 57.1s
  => resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc
0.3s=> extracting sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5 1.4s
  => sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 1.86kB / 1.86kB
0.0s=> sha256:c4f42be2be53b900ebffc040c1df13de538434cccc 2.21MB / 2.21MB 63.9s
  => sha256:d097a4907a8ec079df5ac31872359c2de510f82214c0448e926393b376d3b60d 2.22kB / 2.22kB
0.0s
  => sha256:54260638d07c5e3ad24c6e21fc889abbc8486a27634c0892086ff71f3f44b104 9.27kB / 9.27kB
0.0s
[+] Building 129.3s (4/10)
  => [internal] load build definition from Dockerfile 0.9s
  => transferring dockerfile: 229B 0.2s
  => [internal] load .dockerignore 0.7s
  => transferring context: 28 0.1s2
  => [internal] load metadata for docker.io/library/python:3.6 10.2s
  => [internal] load build context 0.5s8
  => transferring context: 5.49kB 0.1s
  => [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 117.7s0
  => resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 0.3s
```





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



```
Command Prompt

Adding namespace 'inv_contreg' in resource group 'Default' for account Nikhileshwari S's Account in registry icr.io...
The requested namespace is already owned by your account.

C:\Users\Bhuvaneshwari>docker cr namespace-add inv_final
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'inv_final' in resource group 'Default' for account Nikhileshwari S's Account in registry icr.io...
Successfully added namespace 'inv_final'

C:\Users\Bhuvaneshwari>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

C:\Users\Bhuvaneshwari>docker cr login
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.

C:\Users\Bhuvaneshwari>
```

```
Using default tag: latest
latest: Pulling from nikhileshwari/cad
Digest: sha256:893fb4b4d7d99ea3dfe5d4a529d1a00d35dfc0bd9184fb0895a96cecbf8
Status: Image is up to date for nikhileshwari/cad:latest
docker.io/nikhileshwari/cad:latest

C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker tag cad au.icr.io/inv_final/testrepo:inventory
C:\Users\Bhuvaneshwari>docker tag cad icr.io/inv_contreg/testrepo:inventory
C:\Users\Bhuvaneshwari>docker push icr.io/inv_final/testrepo:inventory
The push refers to repository [icr.io/inv_final/testrepo]
c31fb4dc9: Pushing [=====] 545.3kB/176.2MB
0767820a4f78: Pushing [=====] 2.56kB
f1f5361f6233: Pushing [=====] 2.56kB
1e13c080089: Pushing [=====] 221.3kB/942.7kB
12b66b2b09b0: Pushing [=====] 2.04kB
aa4c808c19f6: Waiting
8ba9f99e0c8a: Waiting
be6d7250e9f4: Waiting
1e18e7e1fc2: Waiting
c3a0d593ed24: Waiting
16a20463be4: Waiting
8b42d0d0d72: Waiting
11892cc314cb: Waiting
11936051f93b: Waiting
```

ASSIGNMENT 2

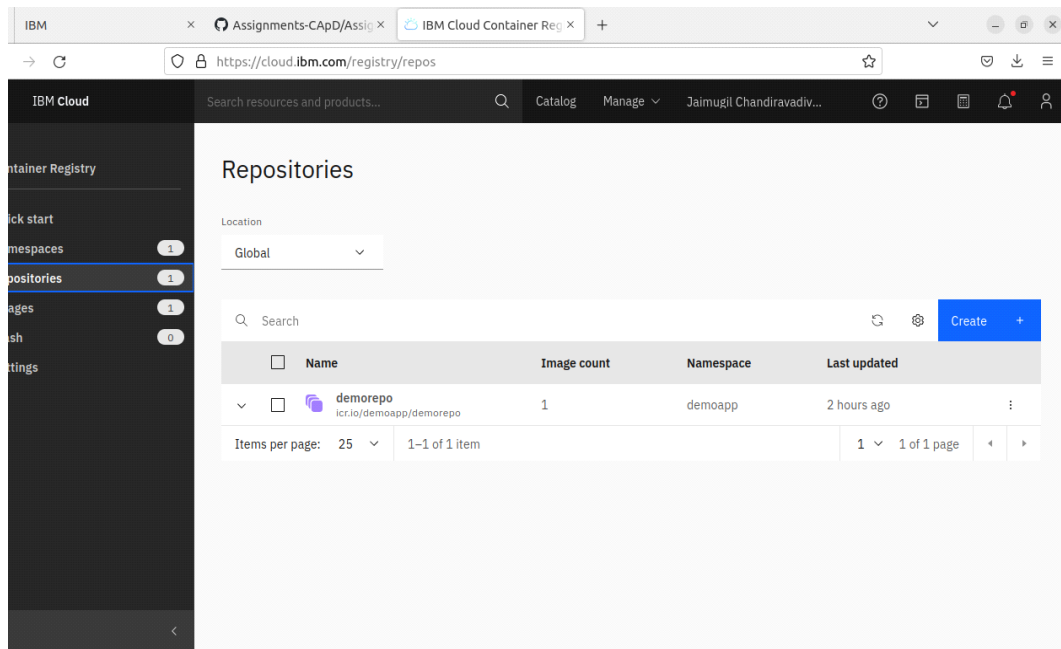
REGISTRATION

Enter username:

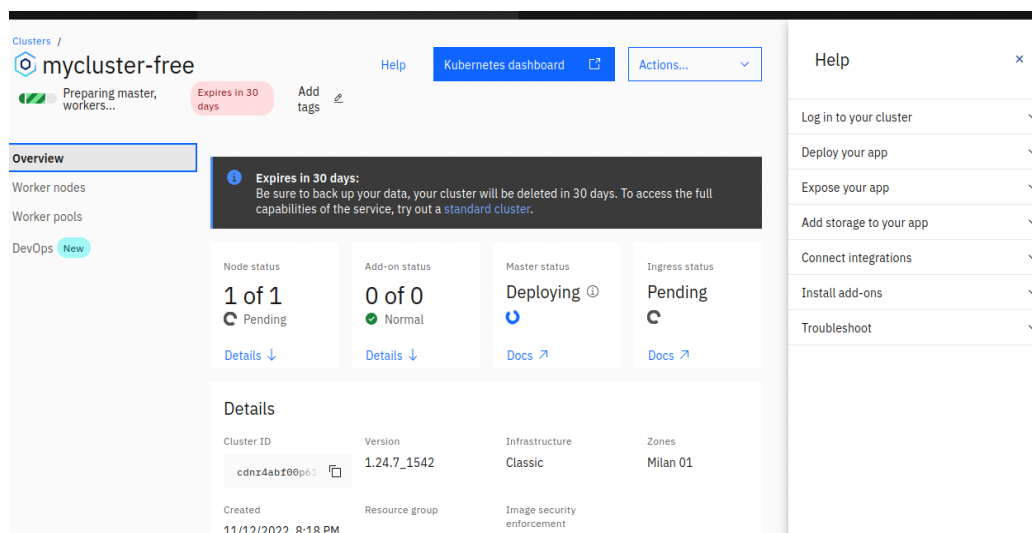
Enter mail:

Enter password:

Submit



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.



← → ↻ <https://eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdnr4abf00p61pmg0qog/service/#/service?namespace=default> 🔒 ⚙️

kubernetes default 🔍 Search + 🔔 ⚙️

Service > Services

Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses ⓘ
Ingress Classes
Services ⓘ
Config and Storage
Config Maps ⓘ
Persistent Volume Claims ⓘ
Secrets ⓘ
Storage Classes
Cluster
Cluster Role Bindings

Services

Name	Labels	Type	Cluster IP	Internal Endpoints	External Endpoints
job-service	-	NodePort	172.21.67.238	job-service:80 TCP job-service:31000 TCP	-
kubernetes	Show all	ClusterIP	172.21.0.1	kubernetes:443 TCP kubernetes:0 TCP	-

← → ↻ <https://cloud.ibm.com/kubernetes/clusters/cdnr4abf00p61pmg0qog/nodes> 🔒 ⚙️

IBM Cloud Search resources and products... 🔍 Catalog Manage ▾ Jaimugil Chandiravadiv... ⚙️ 📄 📁 🔔 👤

Clusters / mycluster-free 🟢 Normal Expires in 30 days Add tags ⓘ Help [Kubernetes dashboard](#) ⚙️ Actions... ▾

Overview
Worker nodes
Worker pools
DevOps New

Pool: Filter... ▾ 🔍 Search ⚙️ Add +

<input type="checkbox"/>	Name	Status	Worker pool	Zone	Private IP	Public IP	Version
▾ <input type="checkbox"/>	0000008c	🟢 Normal	default	Milan 01	10.144.188.96	169.51.206.153	1.24.7_1543

Items per page: 25 ▾ 1-1 of 1 item 1 ▾ 1 of 1 page ⏪ ⏩

```
Microsoft Windows [Version 10.0.19045.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Bhuvanewarix>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name      Version  Status  Private endpoints supported
container-registry 1.0.2    true    true
container-service[kubernetes-service/ks] 1.0.459  false   false
observe-service[job] 1.0.82   false   false

C:\Users\Bhuvanewarix>
```

https://eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdnr4abf00p61pmg0qog/service/#/deployment?name=jobapp-deployment

default

Search

+

Workloads > Deployments

Workloads (N)

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses (N)

Ingress Classes

Services (N)

Config and Storage

Config Maps (N)

CPU Usage

Memory Usage

Deployments

Name	Images	Labels	Pods	Created
jobapp-deployment	Show all	-	1 / 1	51 min