

## Assignment -4 Docker and kubernetes

Assignment Date	12 November2022
Student Name	Dhamotharan A S
Student Roll Number	412519104027
Maximum Marks	2 Marks

### 1. Pull an image from docker hub:

```
Terminal
- took 2s
$ docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest

- took 17s
$ docker run 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.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
```

### Run in docker playground

01:29:09

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.8  
node1

cdnpru63\_cdnpt9m0qau000ccn75g

IP: 192.168.0.8  
Memory: 1.36% (54.55MiB / 3.906GiB)  
CPU: 0.19%  
SSH: ssh ip172-18-0-18-cdnpru63tccg00b2odig@direct.labs.play-with-do

DELETE EDITOR

```
#####
# WARNING!!!!                                     #
# 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@192.168.0.8 ~
$ docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Downloaded newer image for hello-world:latest
[node1] (local) root@192.168.0.8 ~
$ docker run hello-world

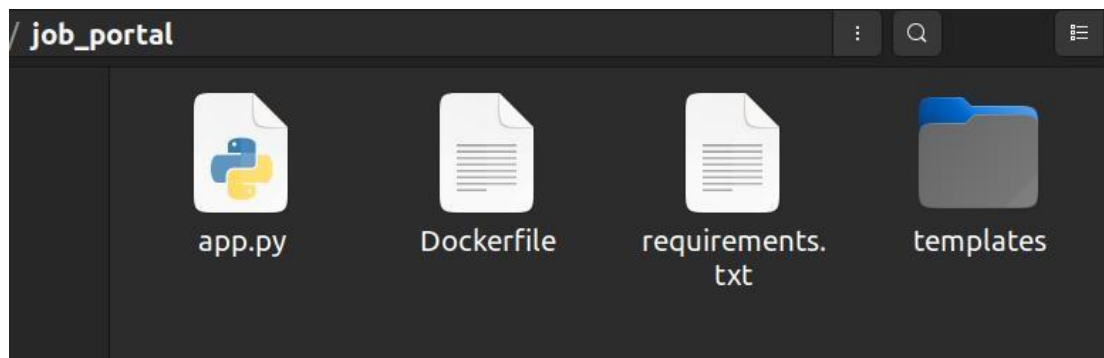
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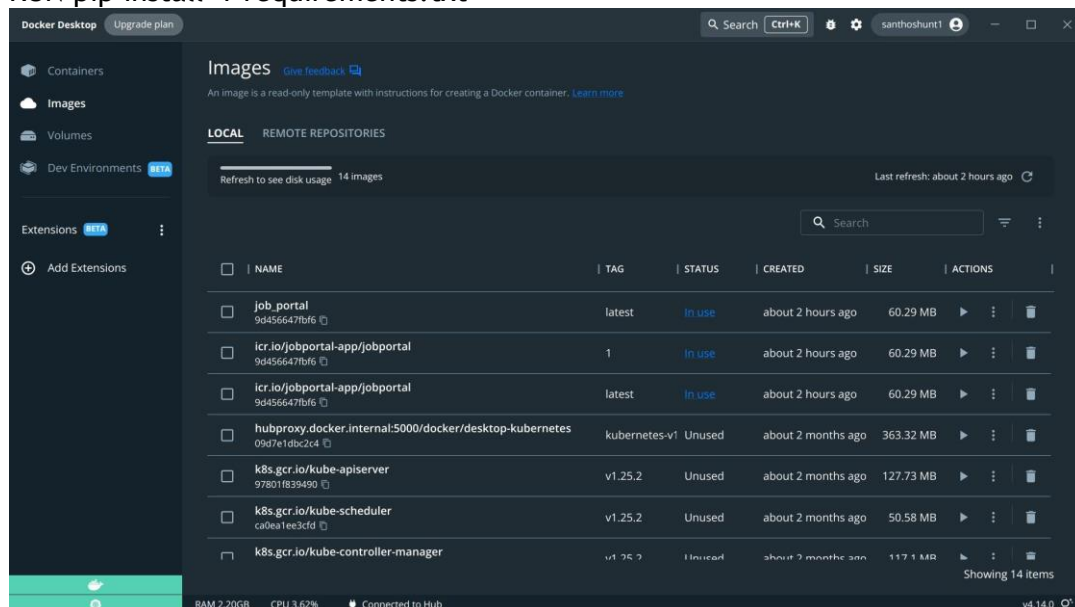
To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
```

## 2. create job portal application and deploy in desktop application

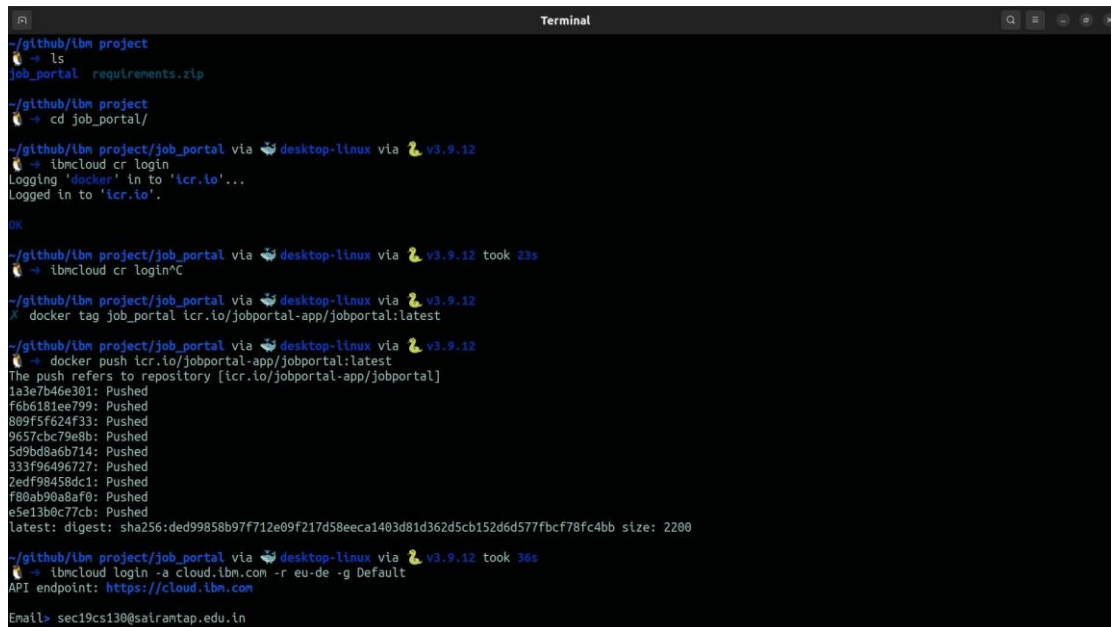
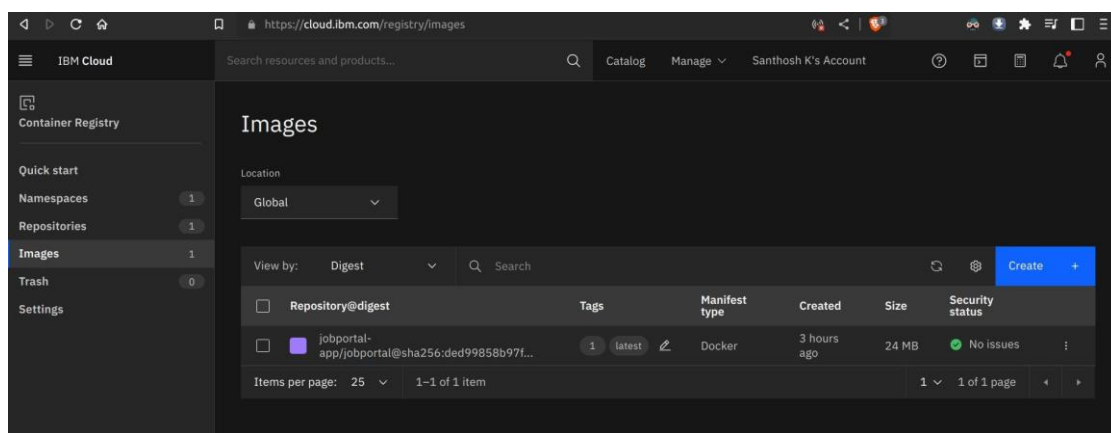
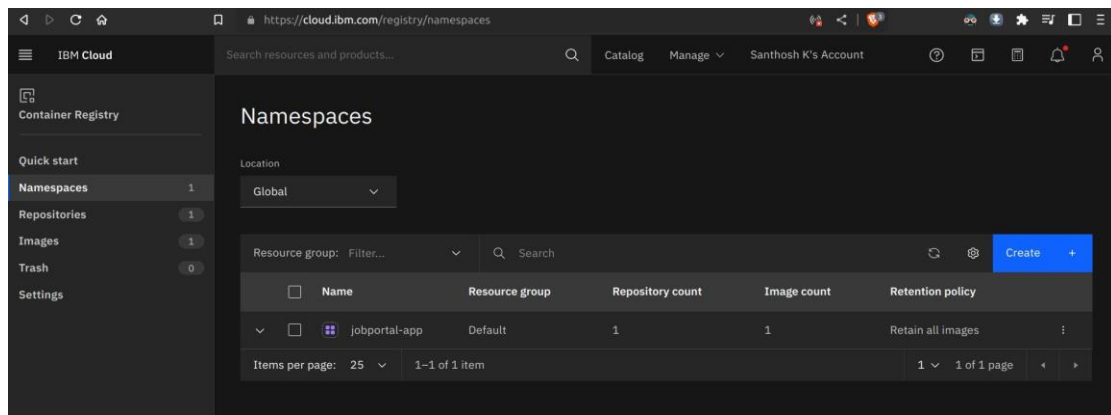


Dockerfile:  
FROM python:3.10-alpine  
WORKDIR /Job\_Portal  
ADD . /Job\_Portal  
COPY requirements.txt .  
RUN pip install -r requirements.txt

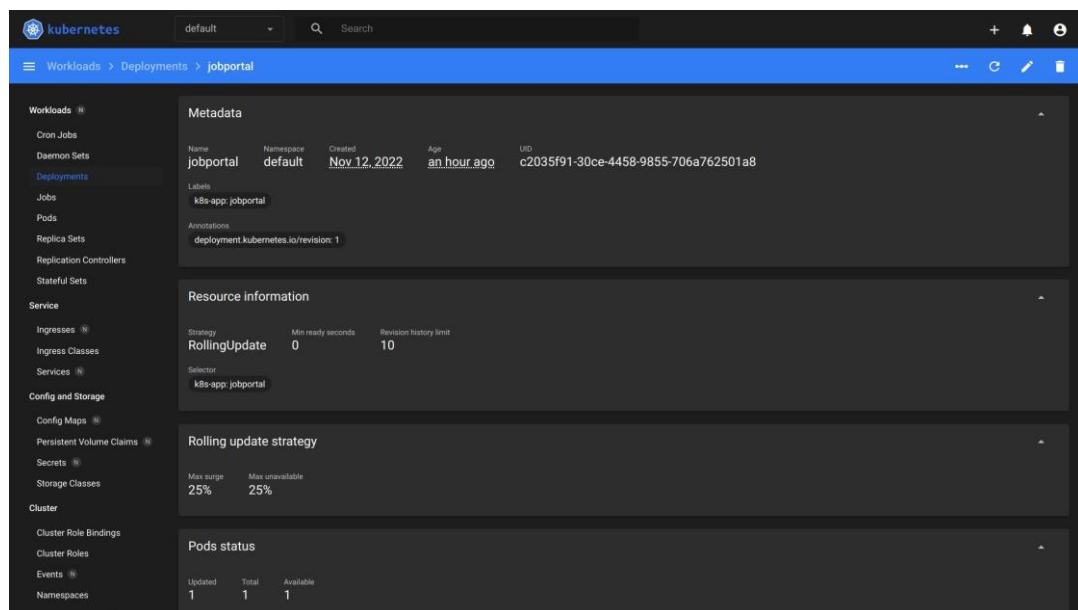
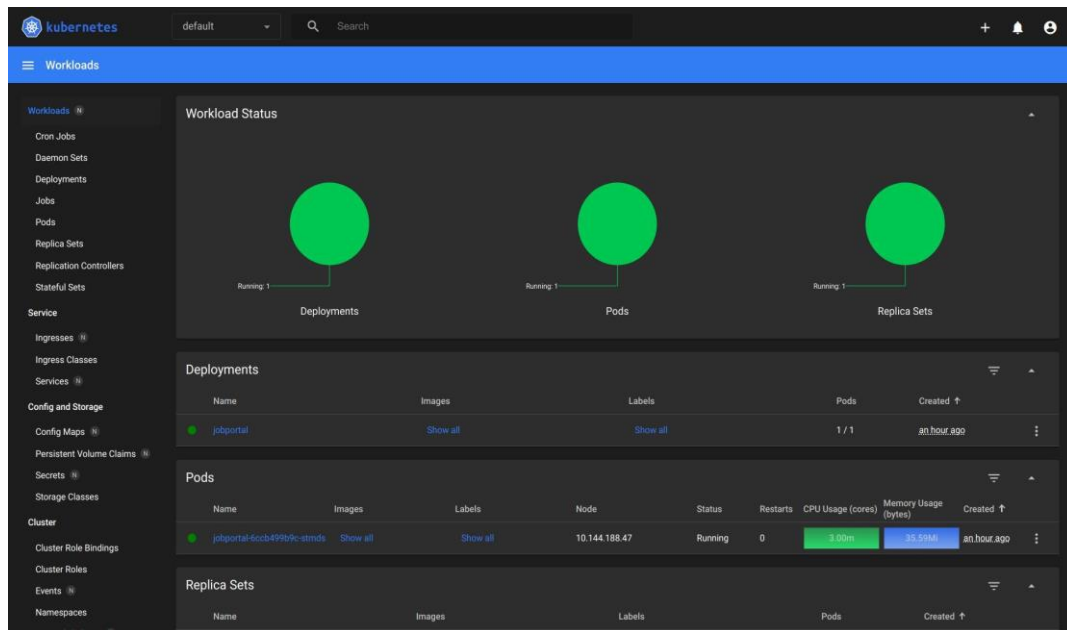


CMD ["python", "app.py"]

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



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

default

Search

Workloads > Deployments > jobportal

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

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

Cluster Roles

Events

Namespaces

Network Policies

Updated1

Total1

Available1

Conditions

Type	Status	Last probe time	Last transition time	Reason	Message
Available	True	an hour ago	an hour ago	MinimumReplicasAvailable	Deployment has minimum availability.
Progressing	True	an hour ago	an hour ago	NewReplicaSetAvailable	ReplicaSet "jobportal-6ccb499b9c" has successfully progressed.

New Replica Set

Namejobportal-6ccb499b9c

Namespacedefault

Agean hour ago

Pods1 / 1

Labels

k8s-app: jobportal pod-template-hash: 6ccb499b9c

Images

icr.io/jobportal-app/jobportal:1

Old Replica Sets

There is nothing to display here

No resources found.

Horizontal Pod Autoscalers

Items: 0

Events

Items: 0

kubernetes

default

Search

Workloads > Pods

Workloads

Cron Jobs

Daemon Sets

Deployments

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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

Cluster Roles

Events

Namespaces

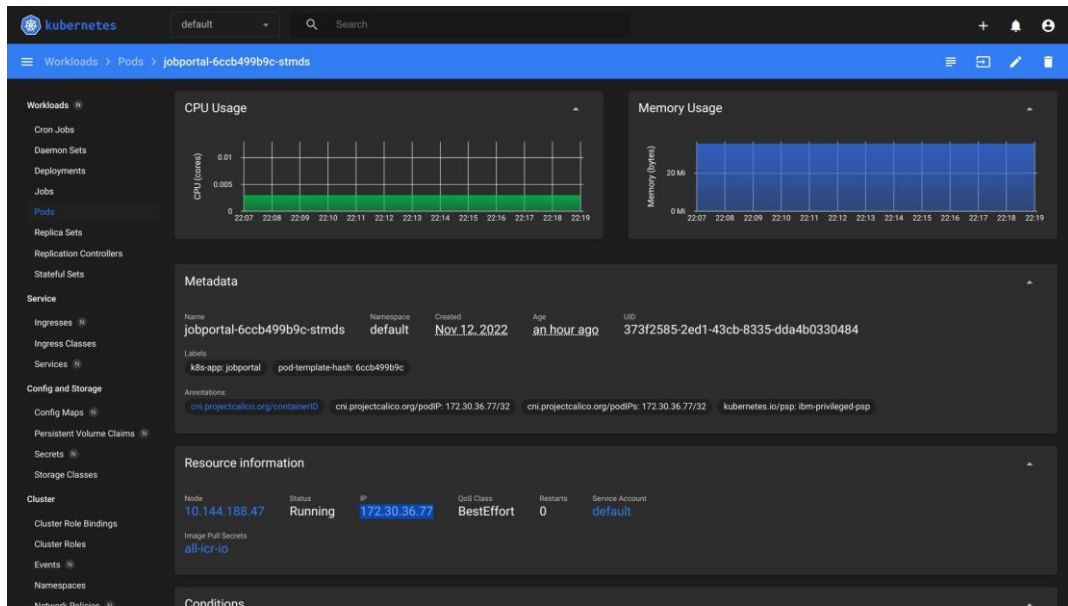
Network Policies

CPU Usage

Memory Usage

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
jobportal-6ccb499b9c-stm5s	Show all	Show all	10.144.188.47	Running	0	3.00m	35.59M	an hour ago



kubernetes default Search

Workloads > Pods > jobportal-6ccb499b9c-stmds

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- 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
- Cluster Roles
- Events
- Namespaces
- Network Policies

Resource information

Node: 10.144.188.47 Status: Running IP: 172.30.36.77 QoS Class: BestEffort Restarts: 0 Service Account: default

Image Pull Secrets

all-icr-io

Conditions

Type	Status	Last probe time	Last transition time	Reason	Message
Initialized	True	-	an hour ago	-	-
Ready	True	-	an hour ago	-	-
ContainersReady	True	-	an hour ago	-	-
PodScheduled	True	-	an hour ago	-	-

Controlled by

Name: jobportal-6ccb499b9c Kind: replicaset Pods: 1 / 1 Age: an hour ago

Labels

Show all

Images

Show all

Persistent Volume Claims

kubernetes default Search

Workloads > Pods > jobportal-6ccb499b9c-stmds

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- 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
- Cluster Roles
- Events
- Namespaces
- Network Policies

Persistent Volume Claims

There is nothing to display here

No resources found.

Events

Items: 0

Containers

jobportal

Image: icr.io/jobportal-app/jobportal:1

Status

Ready	Started	Started At
true	true	2022-11-12T15:45:07Z

Mounts

Name	Read Only	Mount Path	Sub Path	Source Type	Source Name
kube-api-access-hblvz	true	/var/run/secrets/kubernetes.io/serviceaccount		Projected	

Security Context

Privileged: false