

Assignment -4 Docker and kubernetes

Assignment Date	12 November2022
Student Name	Santhosh K
Student Roll Number	412519104115
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
OPEN PORT

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

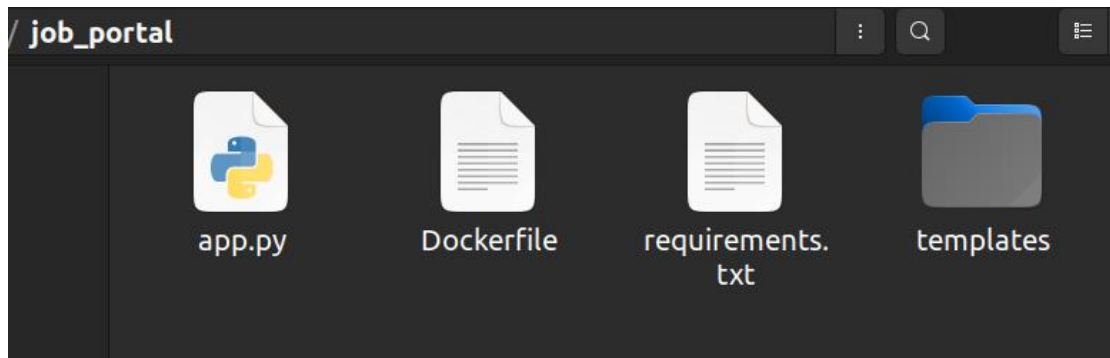
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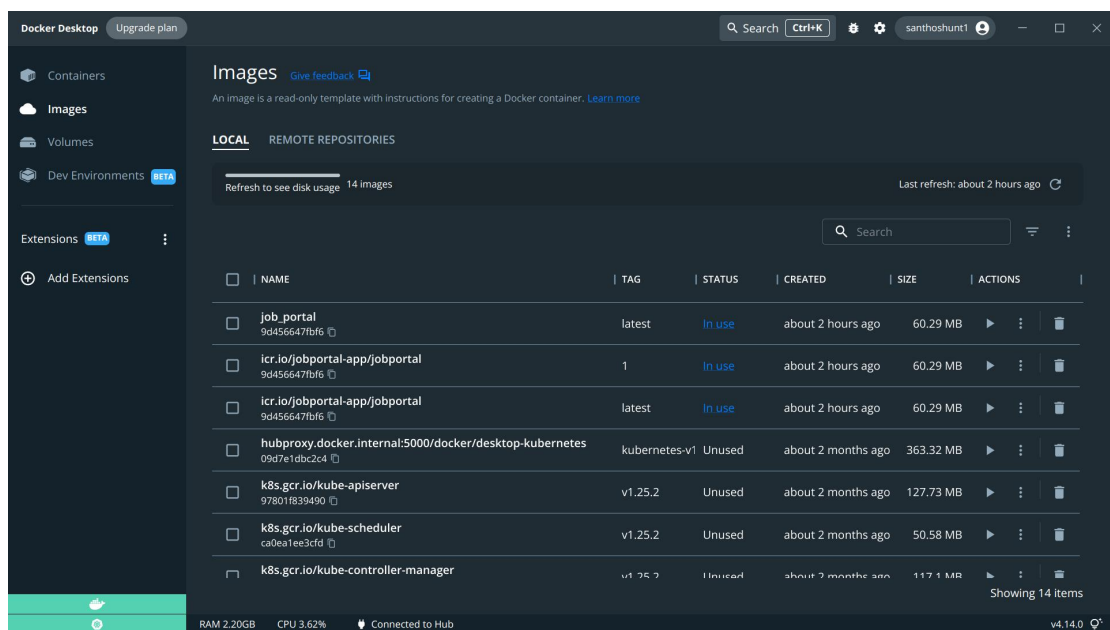
To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

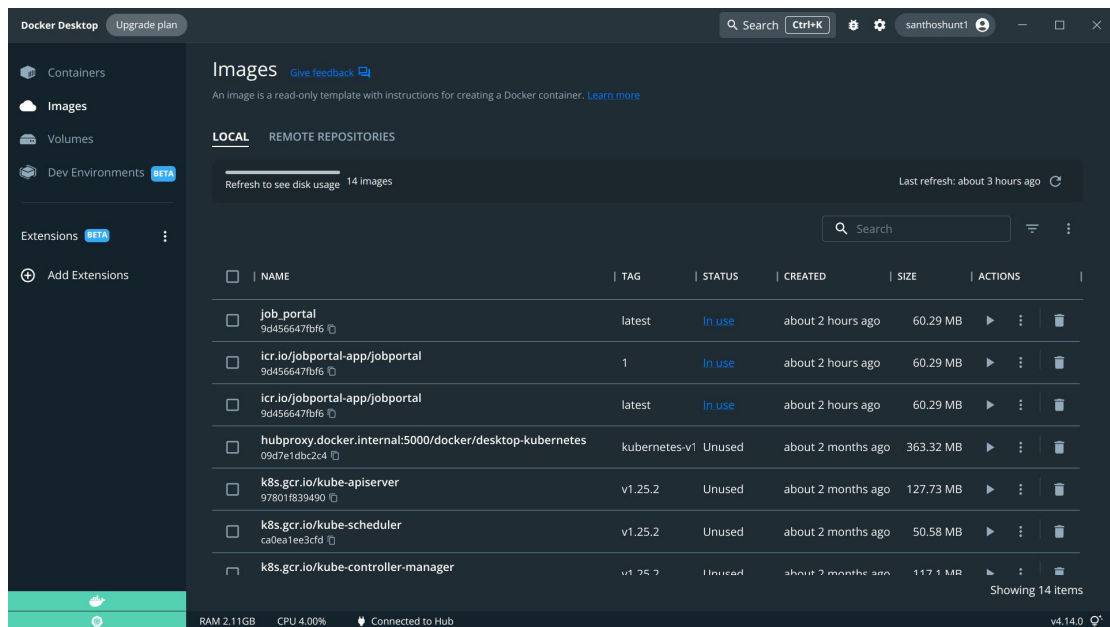
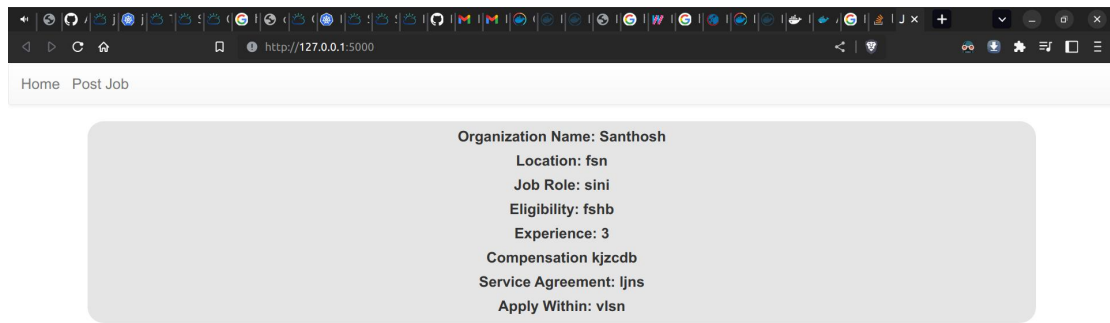
Share images, automate workflows, and more with a free Docker ID:
```

2. create job portal application and deploy in desktop application

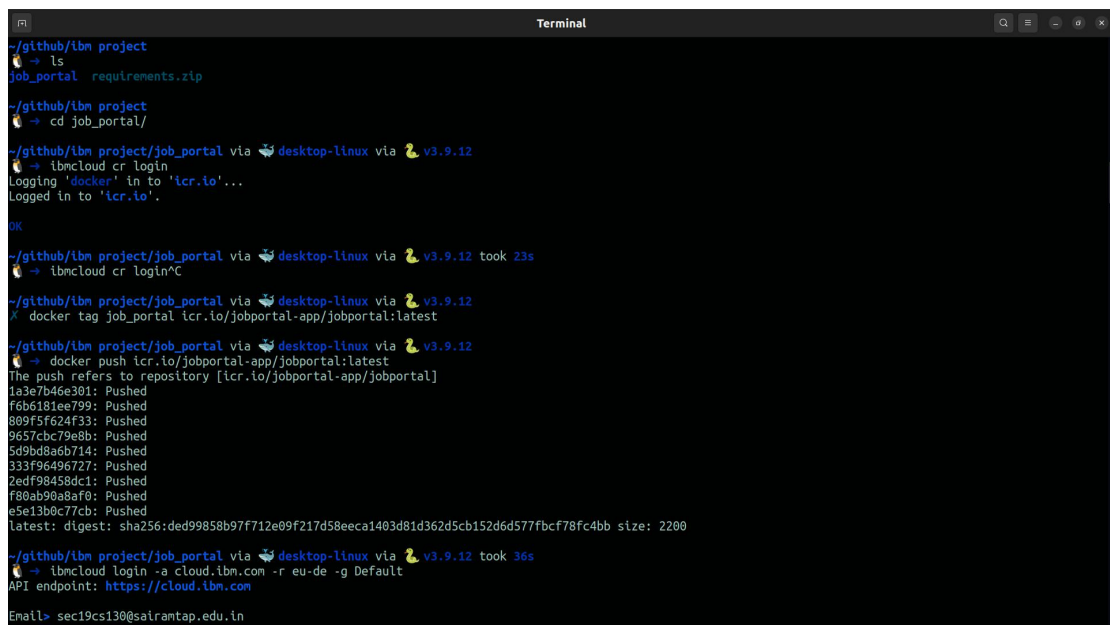
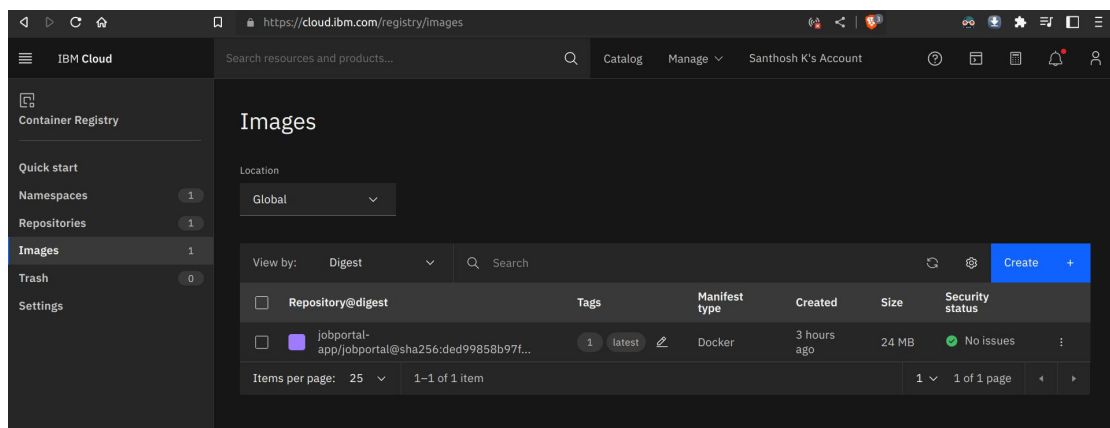
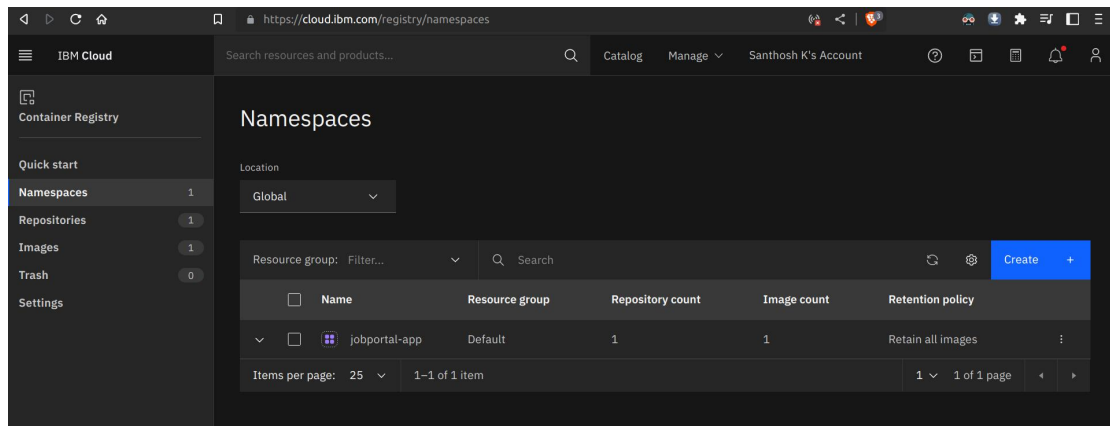


Dockerfile:
FROM python:3.10-alpine
WORKDIR /Job_Portal
ADD . /Job_Portal
COPY requirements.txt .
RUN pip install -r requirements.txt
CMD ["python", "app.py"]





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

Workloads

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Workload Status

Running: 1

Deployments

Running: 1

Pods

Running: 1

Replica Sets

Deployments

Name	Images	Labels	Pods	Created
jobportal	Show all	Show all	1 / 1	an hour ago

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
jobportal-6ccb49b9c-stmdd	Show all	Show all	10.144.188.47	Running	0	3.00m	35.59Mi	an hour ago

Replica Sets

Name	Images	Labels	Pods	Created
------	--------	--------	------	---------

Workloads > Deployments > jobportal

Workloads

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Metadata

Name

jobportal

Namespace

default

Created

Nov 12, 2022

Age

an hour ago

UID

c2035f91-30ce-4458-9855-706a762501a8

Labels

k8s-app: jobportal

Annotations

deployment.kubernetes.io/revision: 1

Resource information

Strategy

RollingUpdate

Min ready seconds

0

Revision history limit

10

Selector

k8s-app: jobportal

Rolling update strategy

Max surge

25%

Max unavailable

25%

Pods status

Updated	Total	Available
1	1	1

Workloads > Deployments > jobportal

Workloads

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Updated1Total1Available1

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-6ccb499b9cNamespacedefaultAgean hour agoPods1 / 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

Workloads > Pods

Workloads

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Services

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Cluster Role Bindings

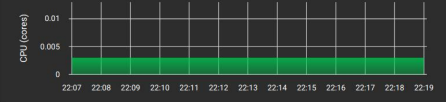
Cluster Roles

Events


Namespaces

Network Policies

CPU Usage

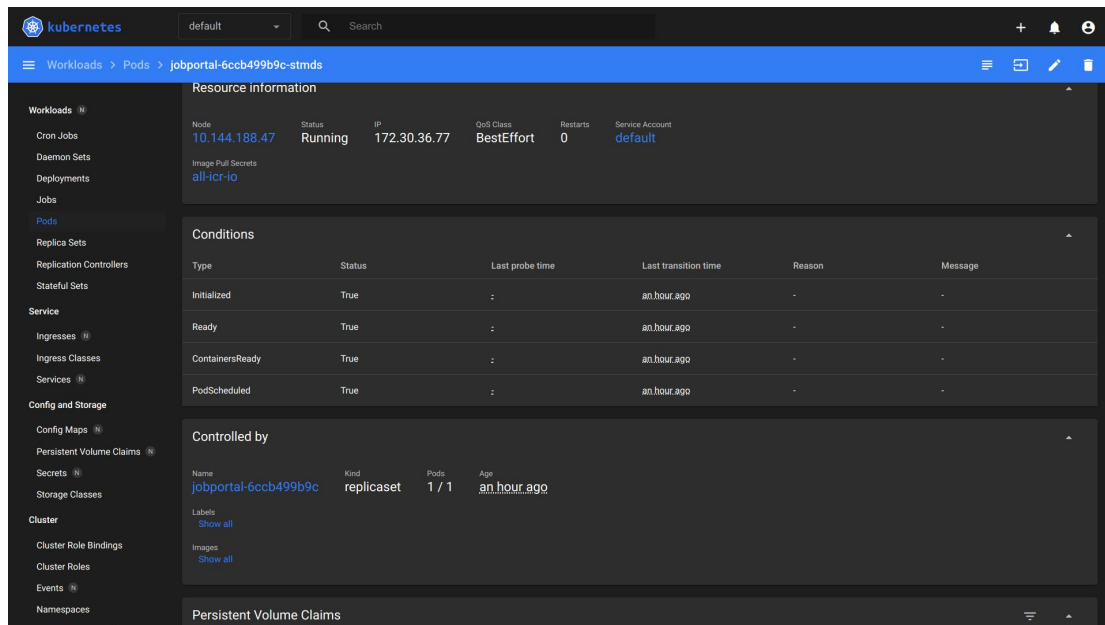
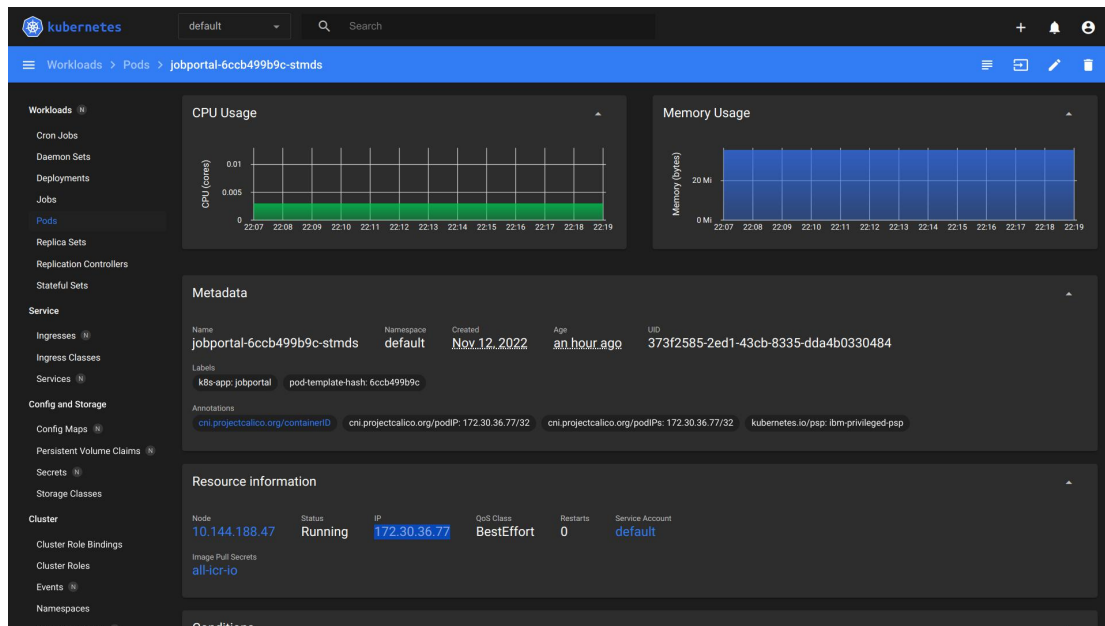


Memory Usage



Pods

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



The screenshot displays the Kubernetes Dashboard interface. The left sidebar contains navigation links for Workloads, Pods, Persistent Volume Claims, Events, Containers, Service, Ingresses, Ingress Classes, Services, Config and Storage, Config Maps, Persistent Volume Claims, Secrets, Storage Classes, Cluster, Cluster Role Bindings, Cluster Roles, Events, and Namespaces. The main panel shows the configuration for the 'jobportal' pod. It includes sections for Persistent Volume Claims (stating 'There is nothing to display here'), Events (showing 0 items), Containers (listing the 'jobportal' container with its image 'icr.io/jobportal-app/jobportal:1'), Status (showing Ready: true, Started: true, Started At: 2022-11-12T15:45:07Z), Mounts (a table listing the mount path '/var/run/secrets/kubernetes.io/serviceaccount' as projected), Security Context (Privileged: false), and Environment Variables (empty).

Name	Read Only	Mount Path	Sub Path	Source Type	Source Name
kube-api-access-h8lvz	true	/var/run/secrets/kubernetes.io/serviceaccount		Projected	