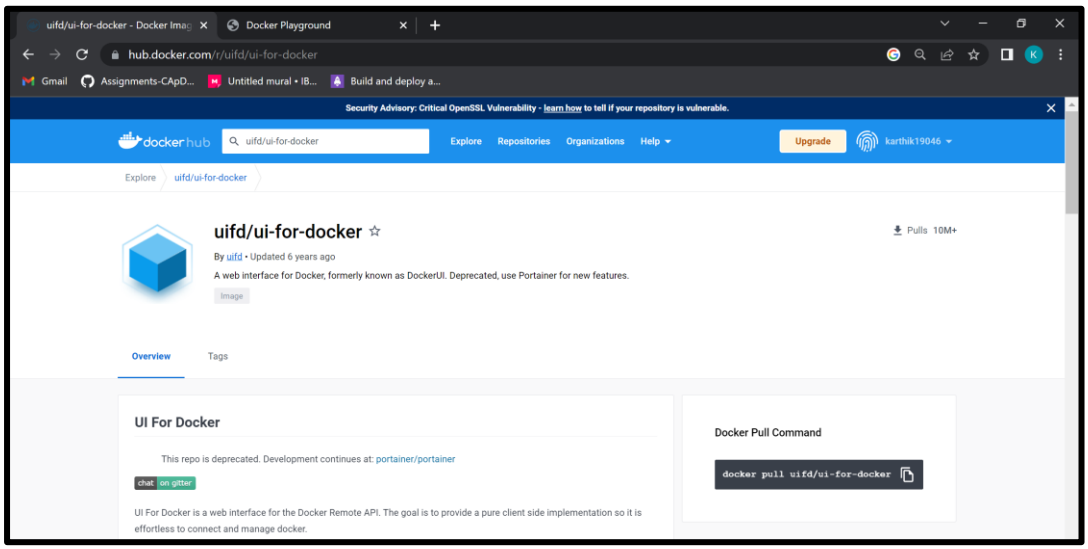
ASSIGNMENT – 4

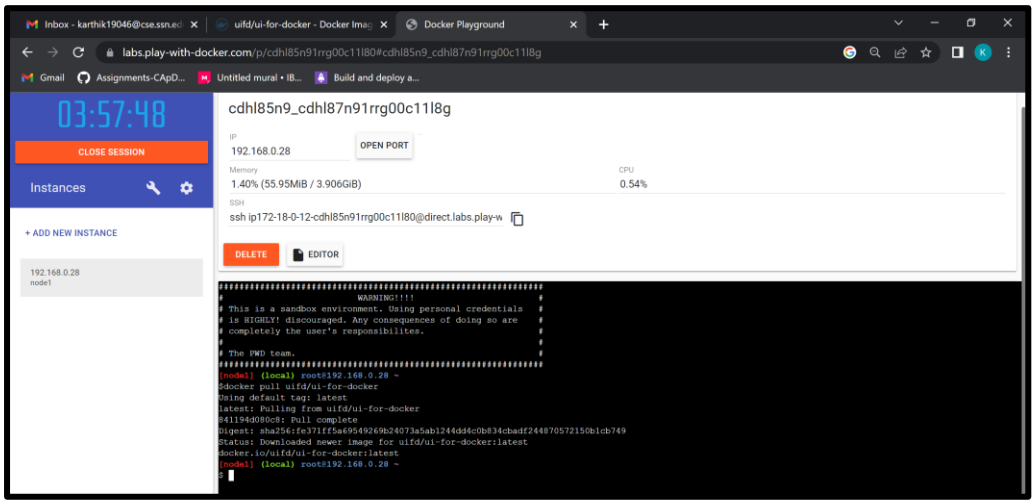
Name	KARTHIK A
Roll No	SSNCE195001046
Batch	B1A3E-07

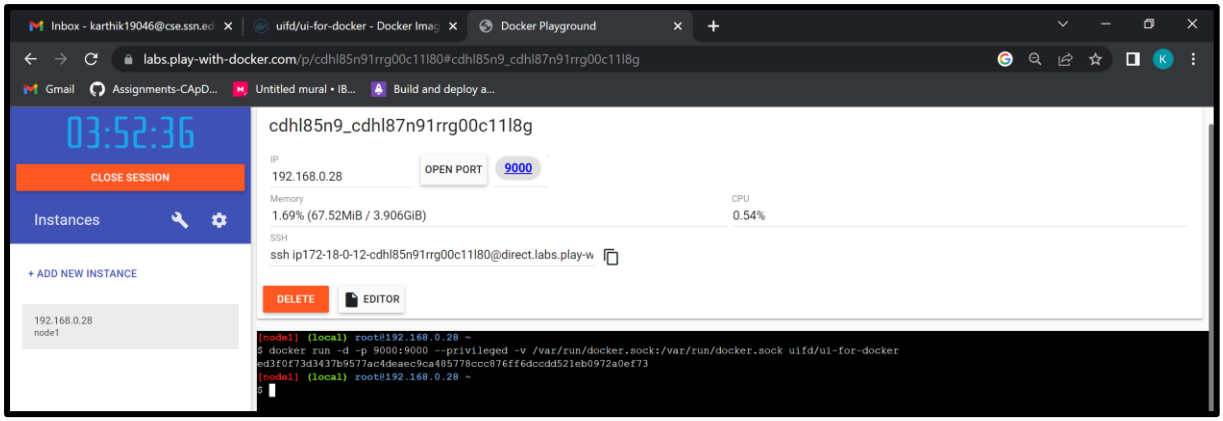
AIM:

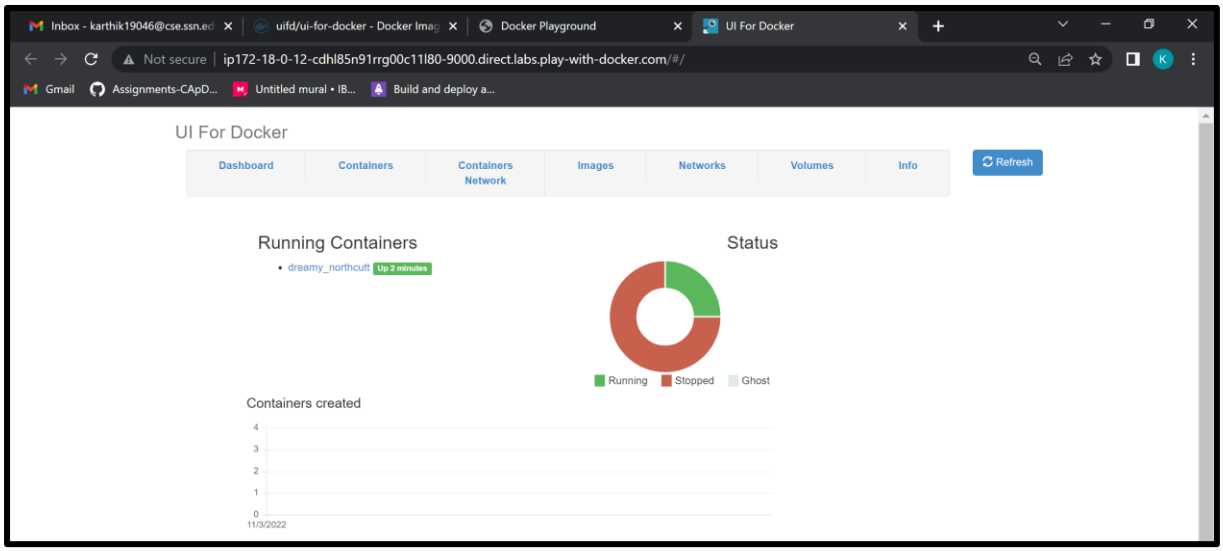
1. Pull an Image from docker hub and run it in Docker Playground
2. Create a docker file for the jobportal application and deploy it in Docker desktop application
3. Create a IBM container registry and deploy helloworld app or jobportal app
4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport

1. Pull an Image from docker hub and run it in Docker Playground

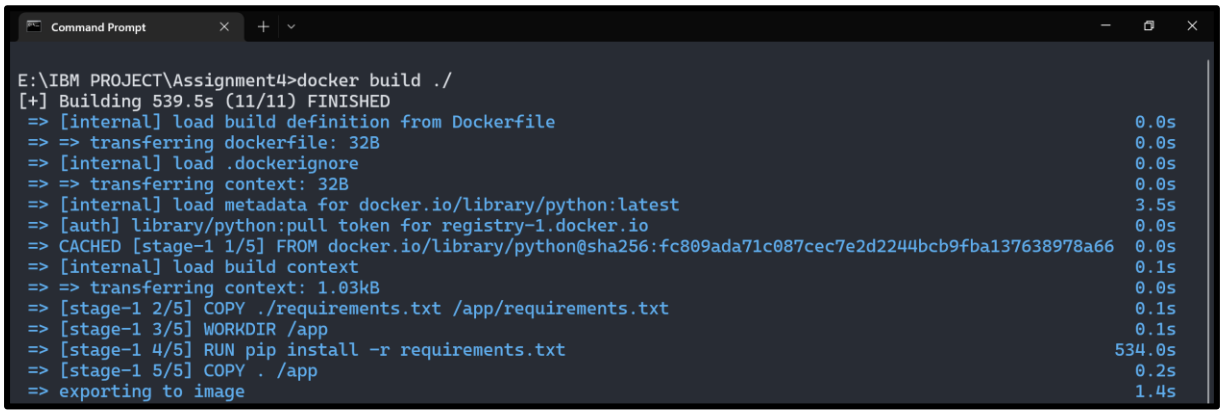


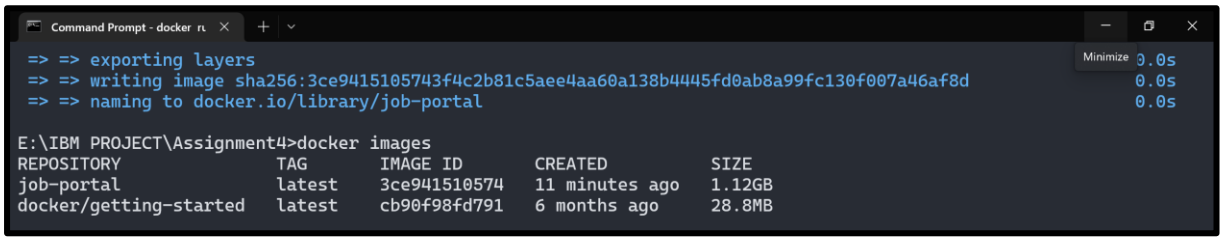


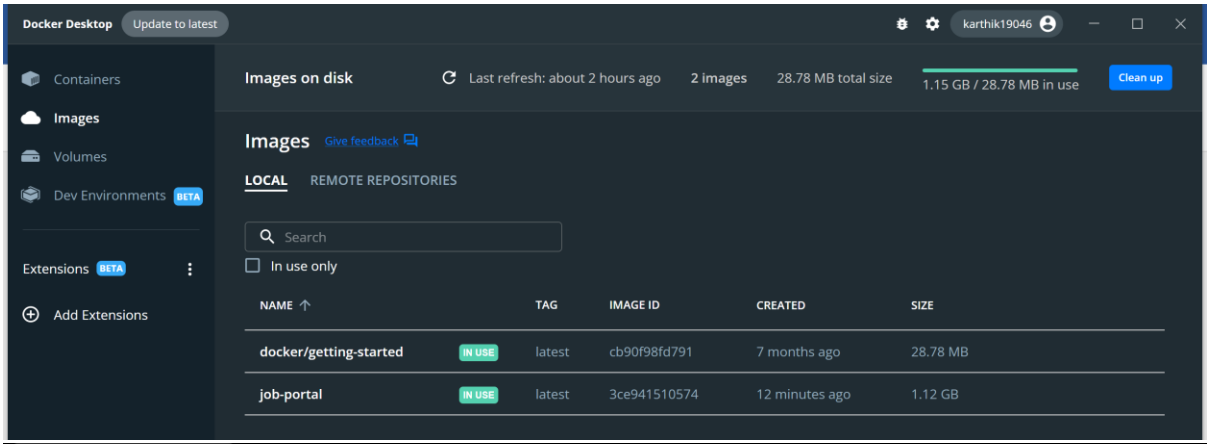


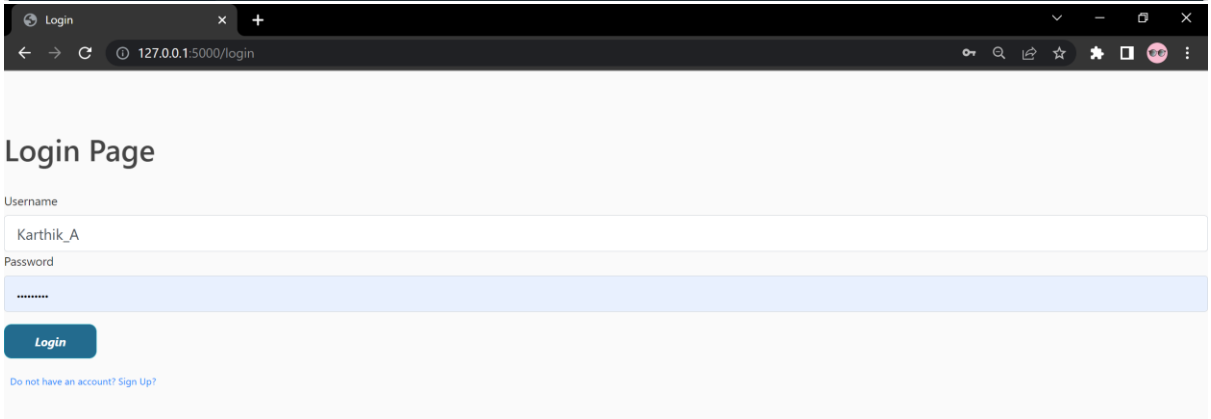


2. Create a docker file for the jobportal application and deploy it in Docker desktop application

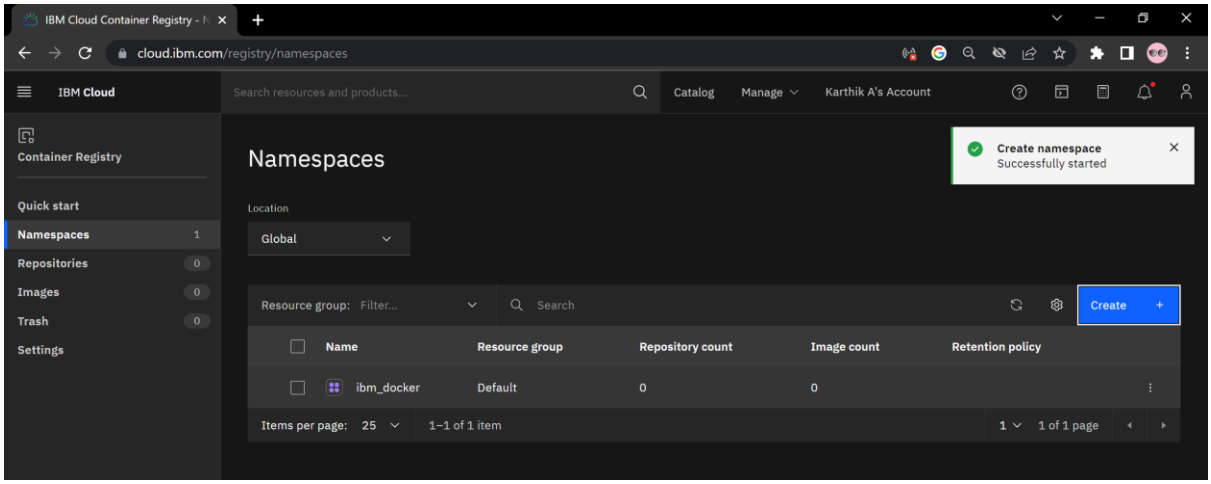

Command Prompt
E:\IBM PROJECT\Assignment4>docker build ./
[+] Building 539.5s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 32B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 32B 0.0s
=> [internal] load metadata for docker.io/library/python:latest 3.5s
=> [auth] library/python:pull token for registry-1.docker.io 0.0s
=> CACHED [stage-1 1/5] FROM docker.io/library/python@sha256:fc809ada71c087cec7e2d2244bcb9fba137638978a66 0.0s
=> [internal] load build context 0.1s
=> => transferring context: 1.03kB 0.0s
=> [stage-1 2/5] COPY ./requirements.txt /app/requirements.txt 0.1s
=> [stage-1 3/5] WORKDIR /app 0.1s
=> [stage-1 4/5] RUN pip install -r requirements.txt 534.0s
=> [stage-1 5/5] COPY . /app 0.2s
=> exporting to image 1.4s

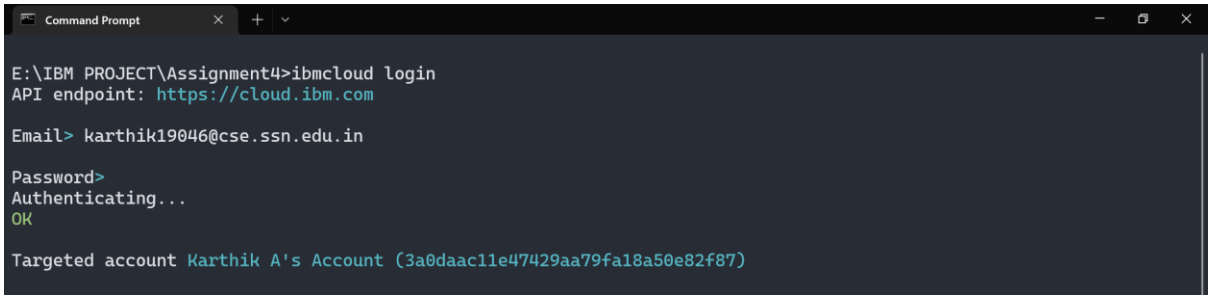

Command Prompt - docker
Minimize
=> => exporting layers 0.0s
=> => writing image sha256:3ce9415105743f4c2b81c5aee4aa60a138b4445fd0ab8a99fc130f007a46af8d 0.0s
=> => naming to docker.io/library/job-portal 0.0s
E:\IBM PROJECT\Assignment4>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
job-portal latest 3ce941510574 11 minutes ago 1.12GB
docker/getting-started latest cb90f98fd791 6 months ago 28.8MB


Docker Desktop
Update to latest
karthik19046
Containers
Images
Volumes
Dev Environments
BETA
Extensions
BETA
Add Extensions
Images on disk
Last refresh: about 2 hours ago
2 images
28.78 MB total size
1.15 GB / 28.78 MB in use
Clean up
Images
Give feedback
LOCAL
REMOTE REPOSITORIES
Search
In use only
NAME
TAG
IMAGE ID
CREATED
SIZE
docker/getting-started
IN USE
latest
cb90f98fd791
7 months ago
28.78 MB
job-portal
IN USE
latest
3ce941510574
12 minutes ago
1.12 GB


Login
127.0.0.1:5000/login
Login Page
Username
Karthik_A
Password
Login
Do not have an account? Sign Up?

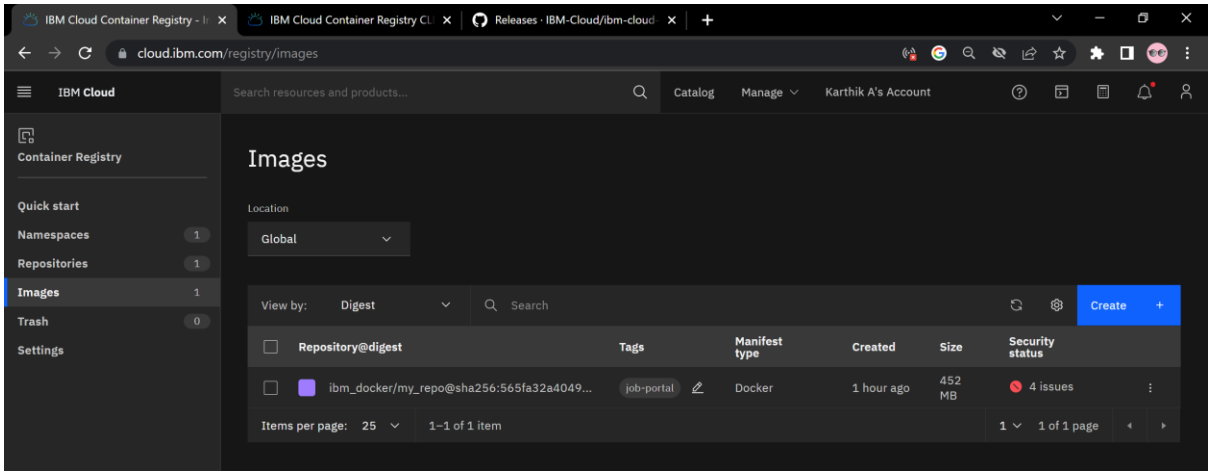
3. Create a IBM container registry and deploy job portal app



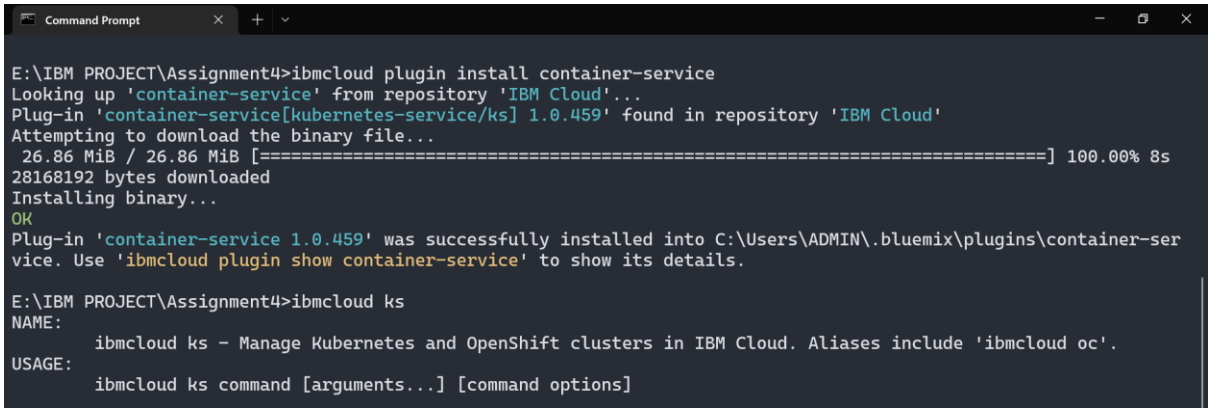


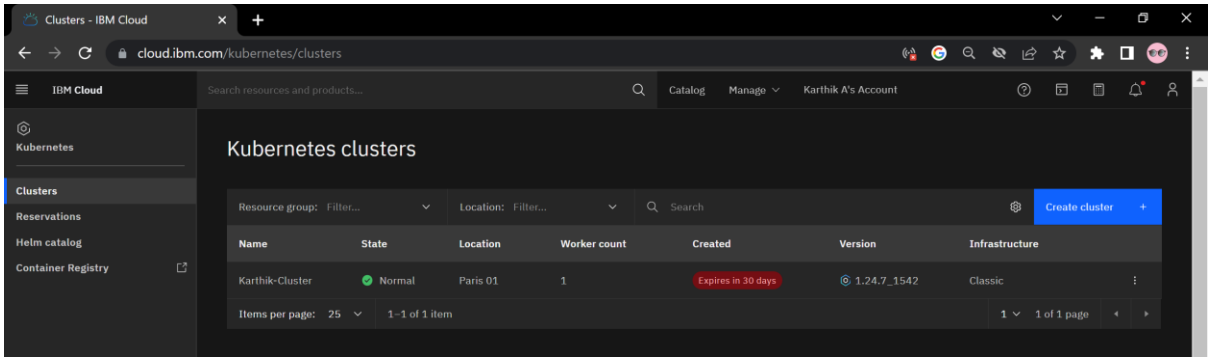
```
Command Prompt

E:\IBM PROJECT\Assignment4>ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
 11.90 MiB / 11.90 MiB [=============================================================================] 100.00% 3s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\ADMIN\.bluemix\plugins\container-regi
stry. Use 'ibmcloud plugin show container-registry' to show its details.

E:\IBM PROJECT\Assignment4>ibmcloud cr region-set global
The region is set to 'global', the registry is 'icr.io'.

OK

E:\IBM PROJECT\Assignment4>ibmcloud cr namespace-add ibm_docker
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace 'ibm_docker' in resource group 'Default' for account Karthik A's Account in registry icr.io...

The requested namespace is already owned by your account.

OK
```

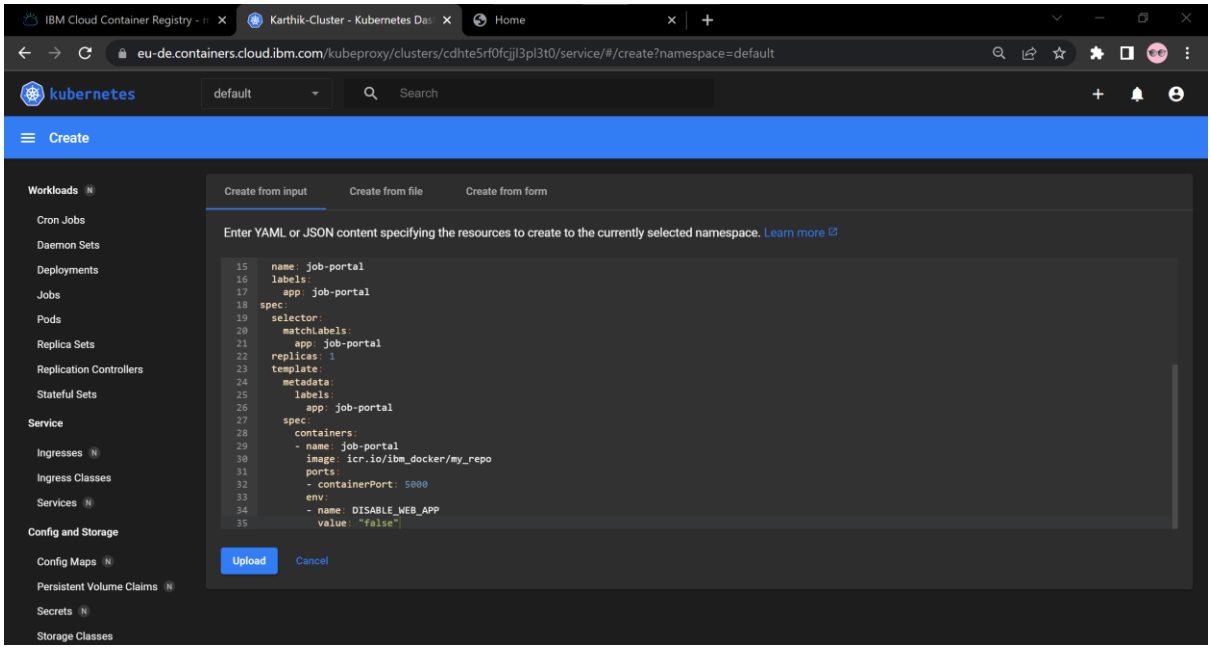
```
E:\IBM PROJECT\Assignment4>docker login
Authenticating with existing credentials...
Login Succeeded

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/

E:\IBM PROJECT\Assignment4>docker push icr.io/ibm_docker/my_repo:job-portal
The push refers to repository [icr.io/ibm_docker/my_repo]
ca8305ecc3bf: Pushed
31d0257e0eb5: Pushed
5f70bf18a086: Pushed
f7e78bdf33ae: Pushed
6f6e69c2c592: Pushed
53b8bfee7a0a: Pushed
5b3f1ed98915: Pushed
6b183c62e3d7: Pushed
882fd36bfd35: Pushed
d1dec9917839: Pushed
d38adf39e1dd: Pushed
4ed121b04368: Pushed
d9d07d703dd5: Pushed
job-portal: digest: sha256:565fa32a4049d4c27f7599d27083e601bb3b18a1e45ee1bd23756052aefa28ed size: 3054
```

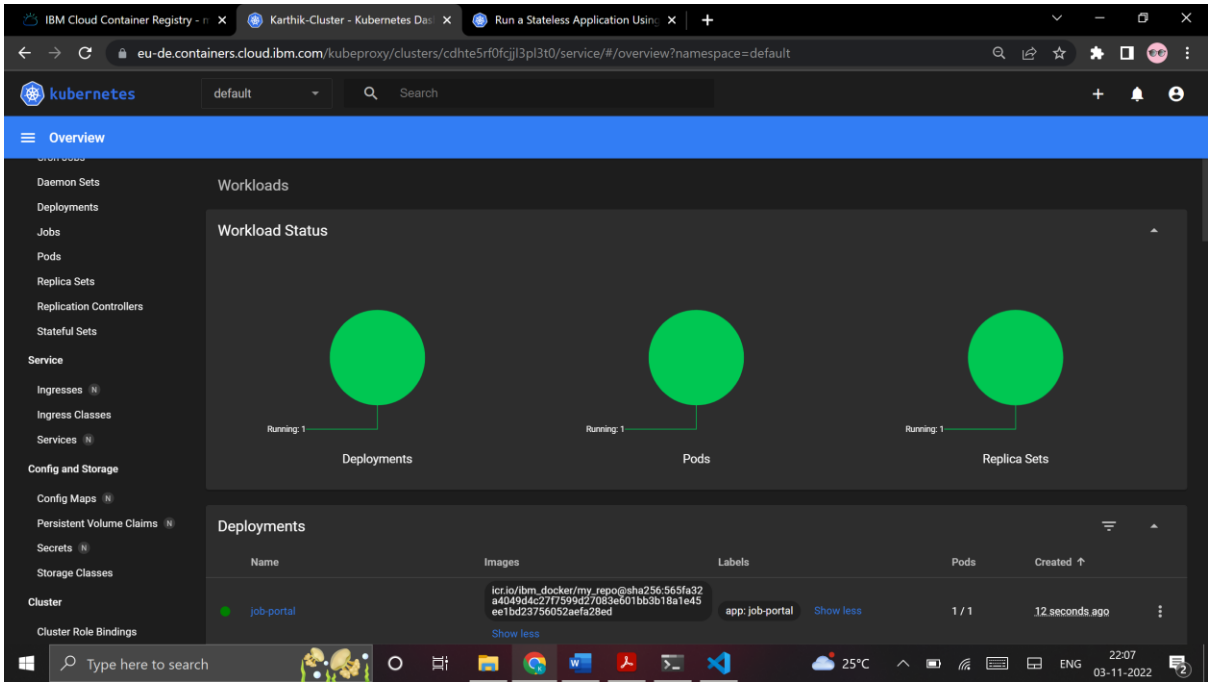


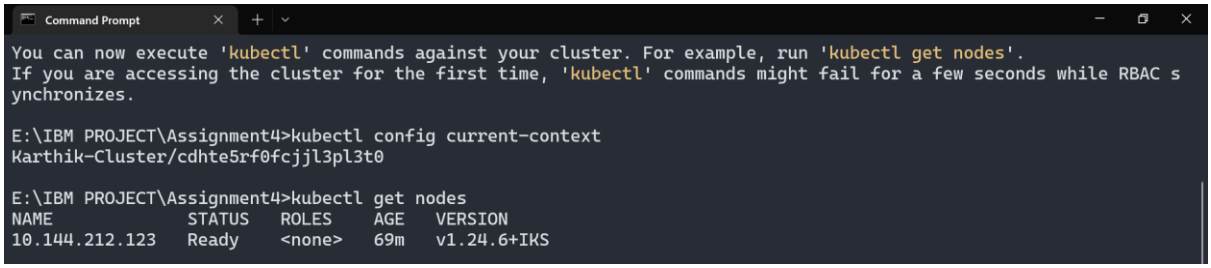
4. Create a Kubernetes cluster in IBM cloud and deploy jobportal image and also expose the same app to run in nodeport



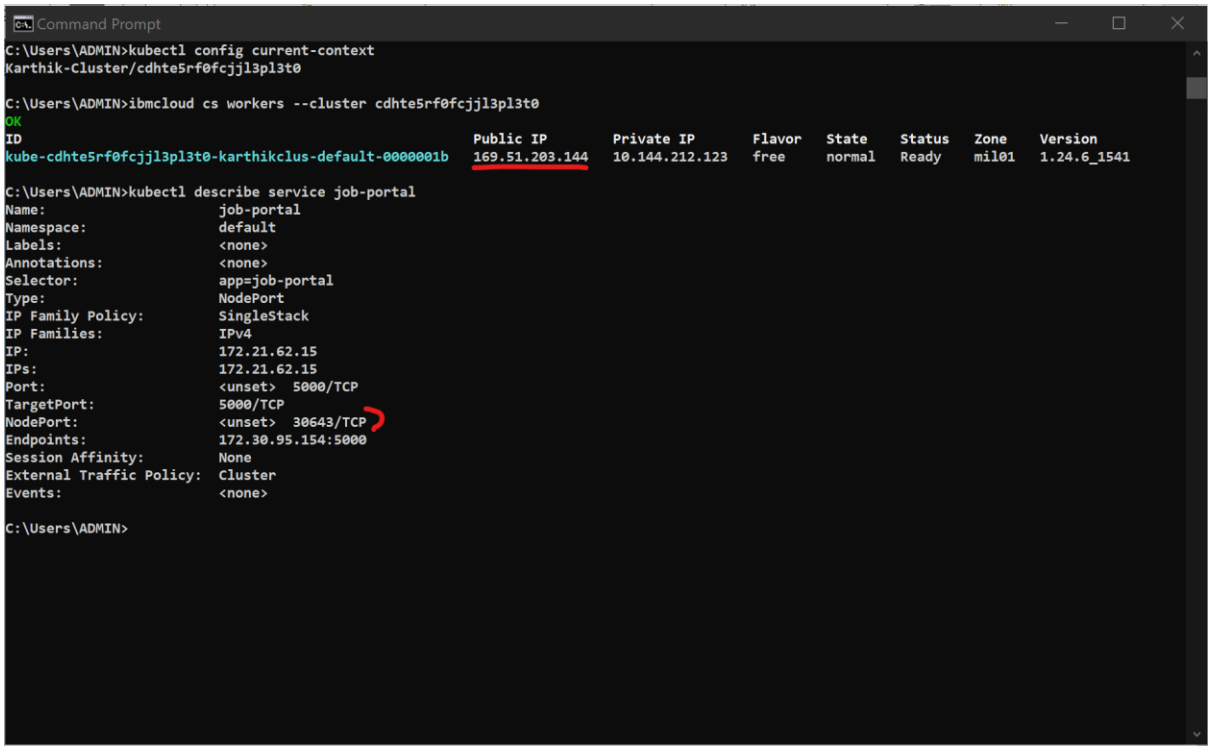


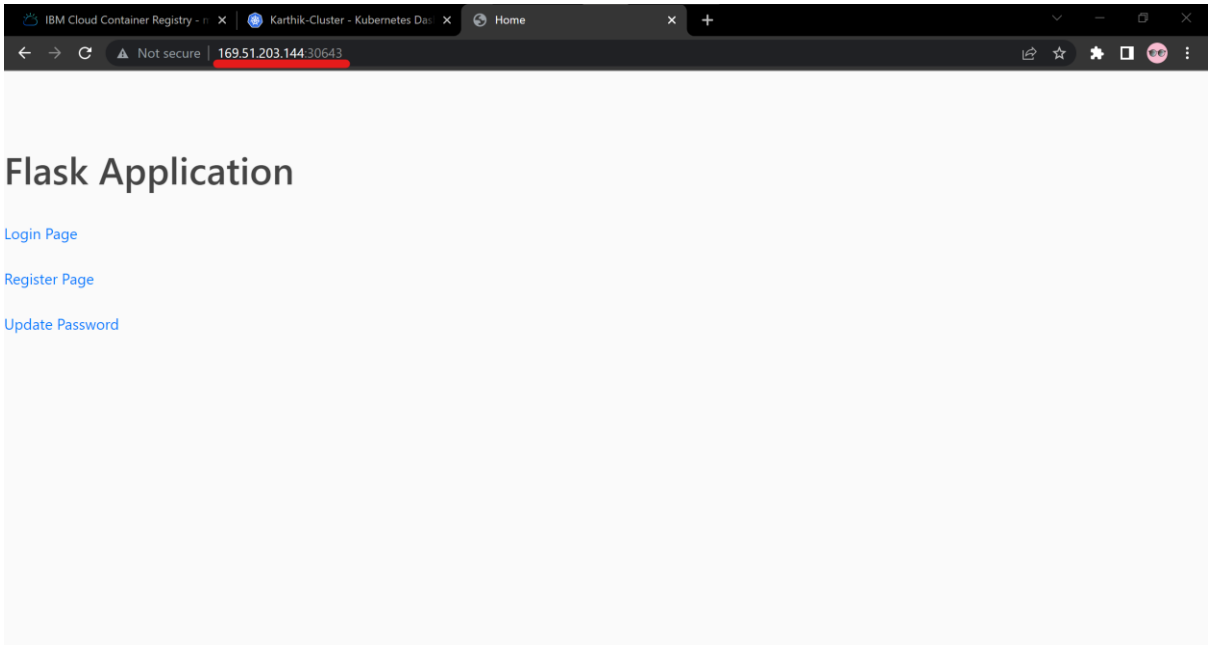



IBM Cloud Container Registry -
Karthik-Cluster - Kubernetes Das
Run a Stateless Application Using
eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdhte5rf0fcjjl3pl3t0/service/#/overview?namespace=default
kubernetes
default
Search
Overview
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Ingress Classes
Services
Config and Storage
Config Maps
Persistent Volume Claims
Secrets
Storage Classes
Cluster
Cluster Role Bindings
Workloads
Workload Status
Running: 1
Deployments
Running: 1
Pods
Running: 1
Replica Sets
Deployments
Name
Images
Labels
Pods
Created
job-portal
icr.io/ibm_docker/my_repo@sha256:565fa32a4049d4c27f7599d27083e601bb3b18a1e45ee1bd23756052aefa28ed
app: job-portal
Show less
1 / 1
12 seconds ago
Show less
Type here to search
25°C
ENG
22:07
03-11-2022


Command Prompt
You can now execute 'kubectl' commands against your cluster. For example, run 'kubectl get nodes'.
If you are accessing the cluster for the first time, 'kubectl' commands might fail for a few seconds while RBAC s
ynchronizes.
E:\IBM PROJECT\Assignment4>kubectl config current-context
Karthik-Cluster/cdhte5rf0fcjjl3pl3t0
E:\IBM PROJECT\Assignment4>kubectl get nodes
NAME STATUS ROLES AGE VERSION
10.144.212.123 Ready <none> 69m v1.24.6+IKS

Command Prompt
E:\IBM PROJECT\Assignment4>kubectl get pods
NAME READY STATUS RESTARTS AGE
job-portal-55f88b7b95-sklns 1/1 Running 0 106s
E:\IBM PROJECT\Assignment4>ibmcloud cs workers --cluster cdhte5rf0fcjjl3pl3t0
OK
ID Public IP Private IP Flavor State Status Zone Version
kube-cdhte5rf0fcjjl3pl3t0-karthikclus-default-0000001b 169.51.203.144 10.144.212.123 free normal Ready mil01 1.24.6_1541


Command Prompt
C:\Users\ADMIN>kubectl config current-context
Karthik-Cluster/cdhte5rf0fcjjl3pl3t0
C:\Users\ADMIN>ibmcloud cs workers --cluster cdhte5rf0fcjjl3pl3t0
OK
ID Public IP Private IP Flavor State Status Zone Version
kube-cdhte5rf0fcjjl3pl3t0-karthikclus-default-0000001b 169.51.203.144 10.144.212.123 free normal Ready mil01 1.24.6_1541
C:\Users\ADMIN>kubectl describe service job-portal
Name: job-portal
Namespace: default
Labels: <none>
Annotations: <none>
Selector: app=job-portal
Type: NodePort
IP Family Policy: SingleStack
IP Families: IPv4
IP: 172.21.62.15
IPs: 172.21.62.15
Port: <unset> 5000/TCP
TargetPort: 5000/TCP
NodePort: <unset> 30643/TCP
Endpoints: 172.30.95.154:5000
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>
C:\Users\ADMIN>


IBM Cloud Container Registry -
Karthik-Cluster - Kubernetes Das
Home
Not secure
169.51.203.144:30643
Flask Application
Login Page
Register Page
Update Password