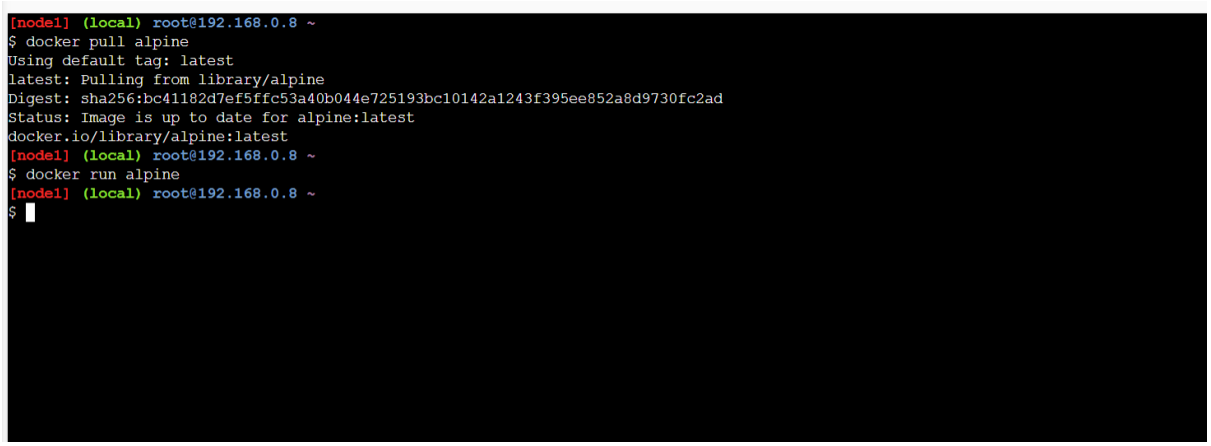
Assignment - 4

Kubernetes Assignment

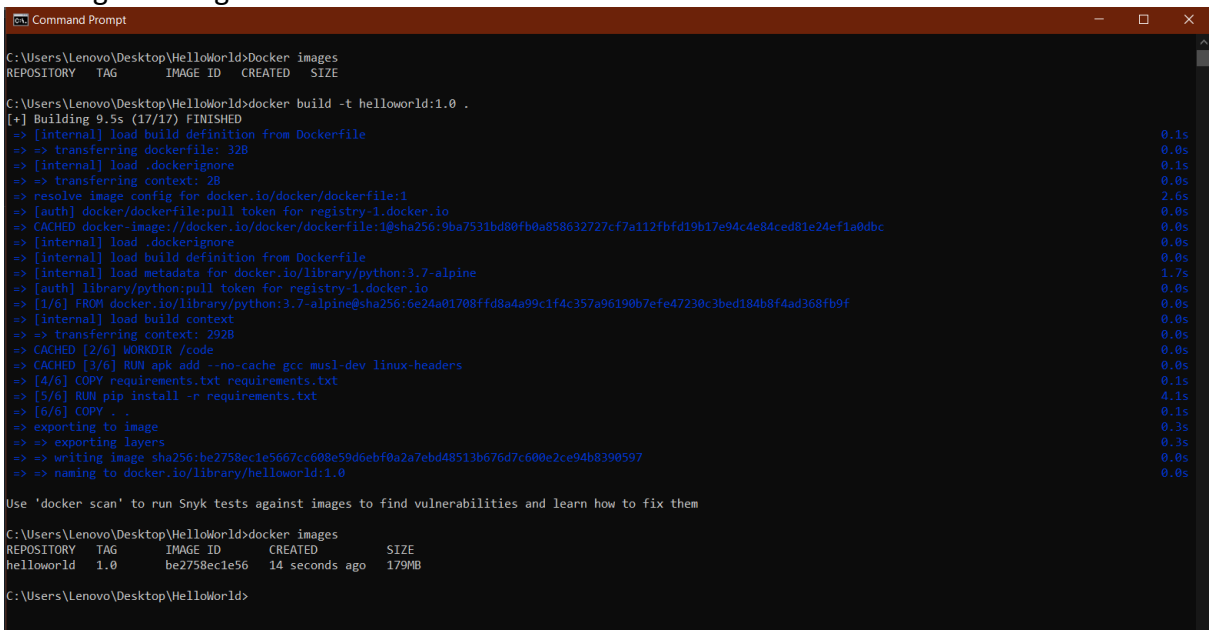
Assignment Date	19-10-2022
Student Name	GOKUL. S
Student Roll Number	7179KCTKCTKCTKCTKCTKCTKCT19BCS033
Maximum Marks	2 Marks

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

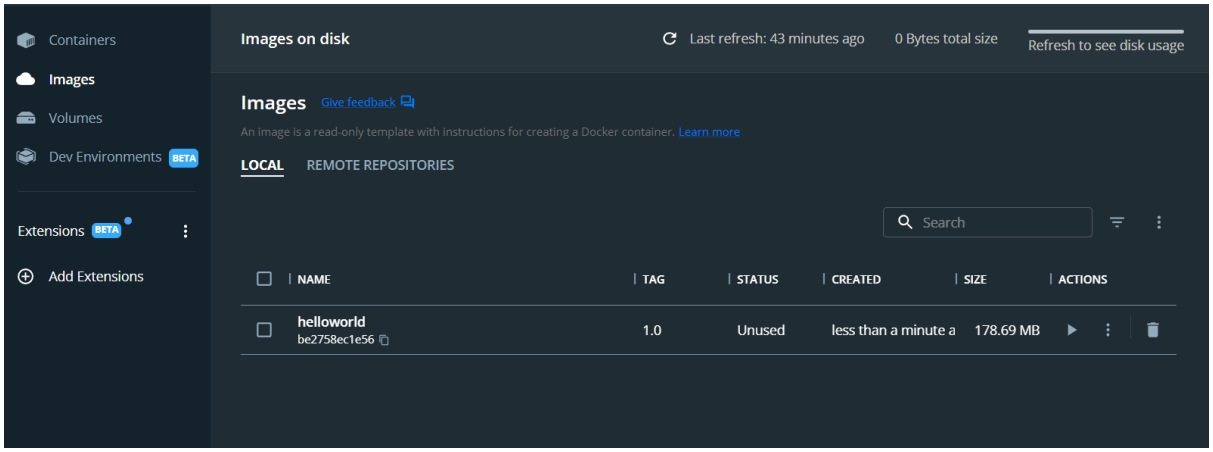


2. Create a docker file for the hello world application and deploy it in Docker desktop application.

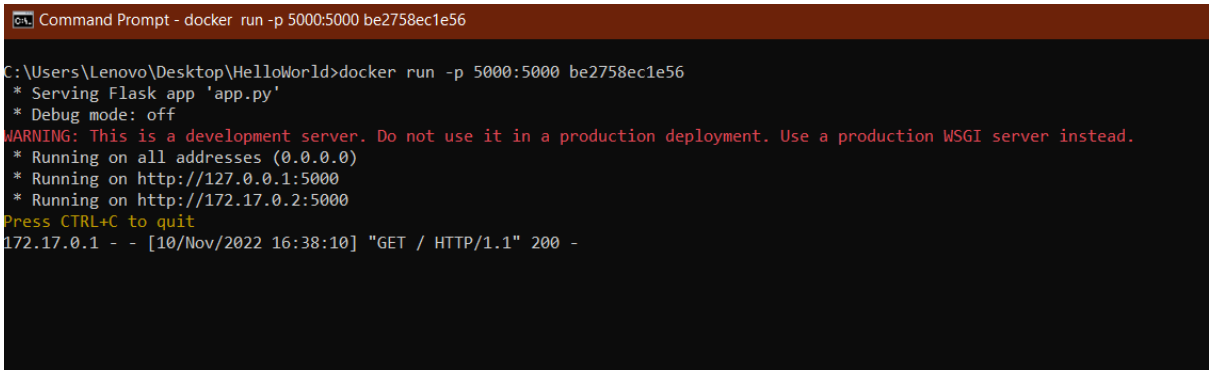
Building the image from the file: docker build -t helloworld:0.1 .



Docker desktop app:



Run the container:



Output:

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

```
C:\Users\Lenovo>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% 0s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Lenovo\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to sho
w its details.

C:\Users\Lenovo>ibmcloud cr region-set global
The region is set to 'global', the registry is 'icr.io'.

OK
```

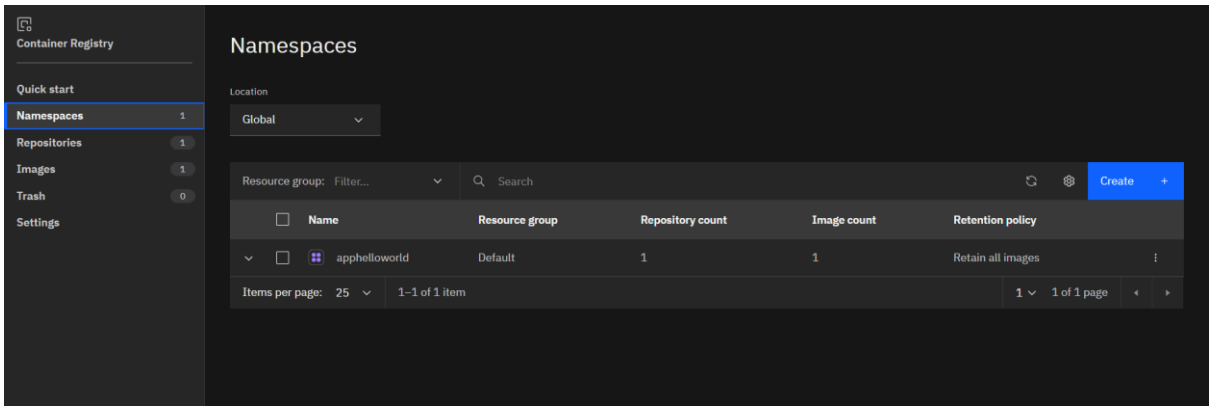
```
C:\Users\Lenovo>ibmcloud cr namespace-add apphelloworld
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace 'apphelloworld' in resource group 'Default' for account Aswin Venkat's Account in registry icr.io...

Successfully added namespace 'apphelloworld'

OK

C:\Users\Lenovo>
```

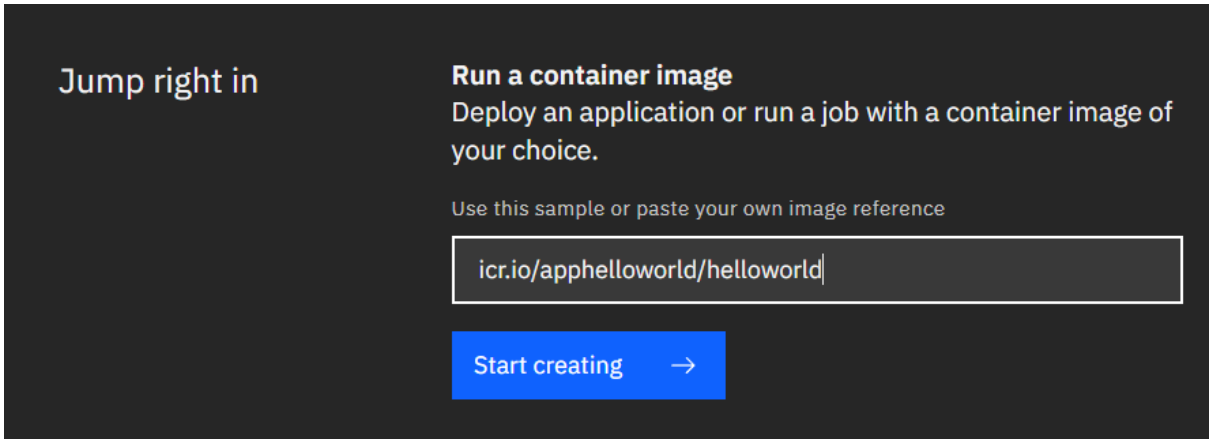
```
C:\Users\Lenovo>ibmcloud cr login
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.

OK
```

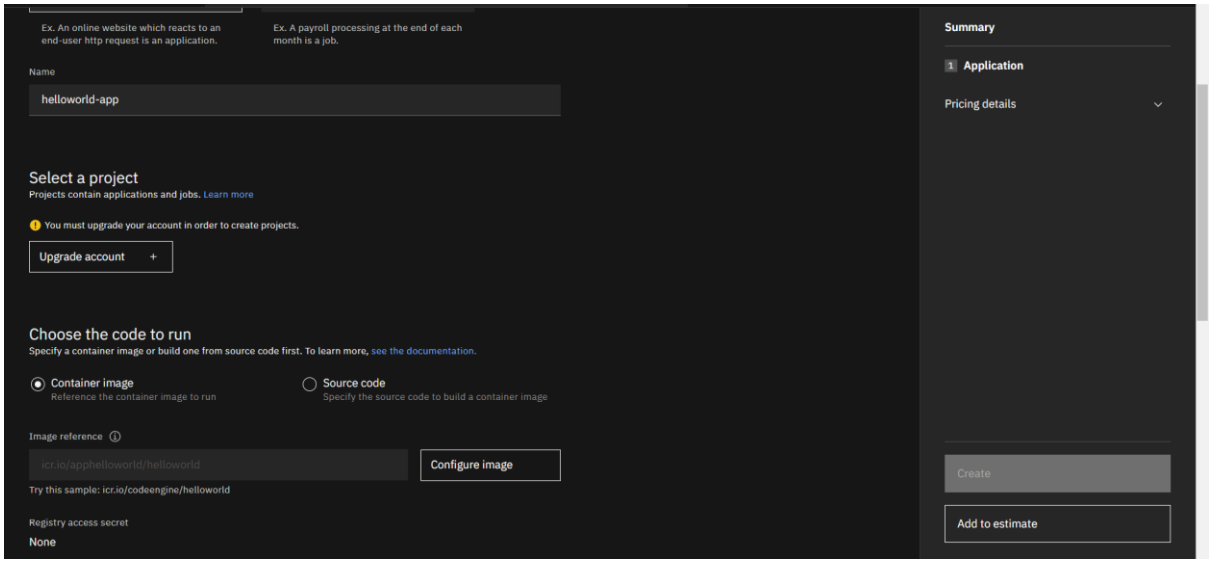
```
C:\Users\Lenovo>docker tag helloworld:1.0 icr.io/apphelloworld/helloworld:1.0

C:\Users\Lenovo>docker push icr.io/apphelloworld/helloworld:1.0
The push refers to repository [icr.io/apphelloworld/helloworld]
6710d00f007c: Pushed
0be4a798de9f: Pushed
7504a231c5f8: Pushed
a406de449b24: Pushed
680c5f8d2408: Pushed
ed37f306c964: Pushed
31e0f81c5bec: Pushed
b3aede2981e3: Pushed
6666686122fd: Pushed
994393dc58e7: Pushed
1.0: digest: sha256:d521cb0ae002ab12a99e28e7c3873cbc2032a1a4e15a7d9cab72cfbd60b3250e size: 2412

C:\Users\Lenovo>
```

```
C:\Users\Lenovo>ibmcloud cr image-list
Listing images...

Repository                        Tag   Digest         Namespace       Created      Size    Security status
icr.io/apphelloworld/helloworld   1.0   d521cb0ae002   apphelloworld   1 hour ago   68 MB   -

OK
```

The image is pushed to the namespace.

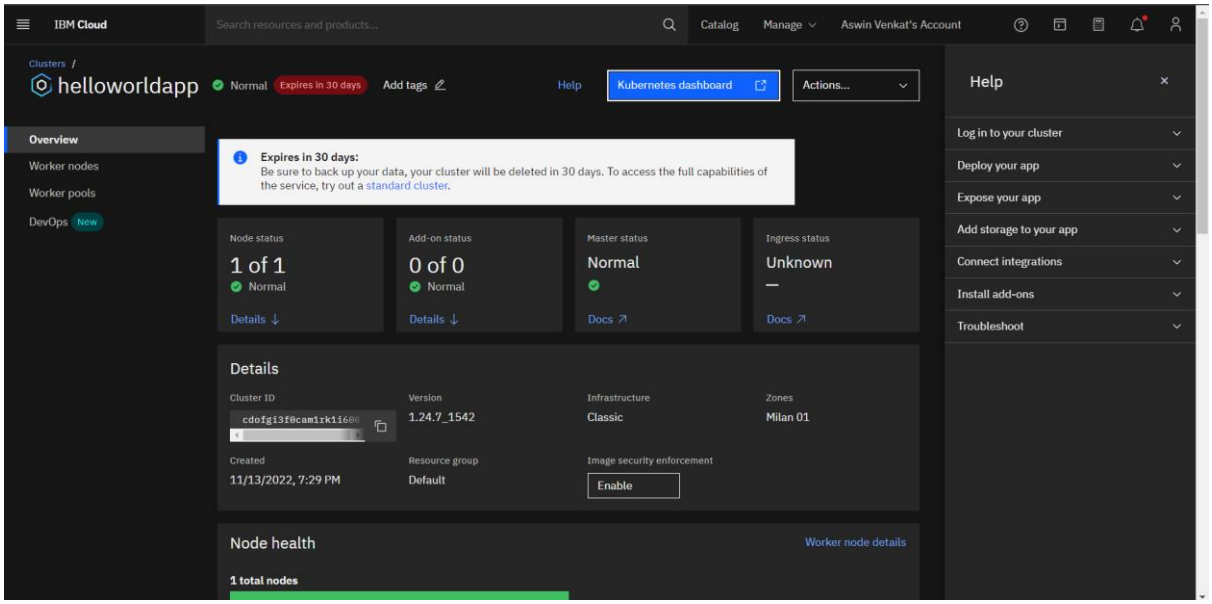


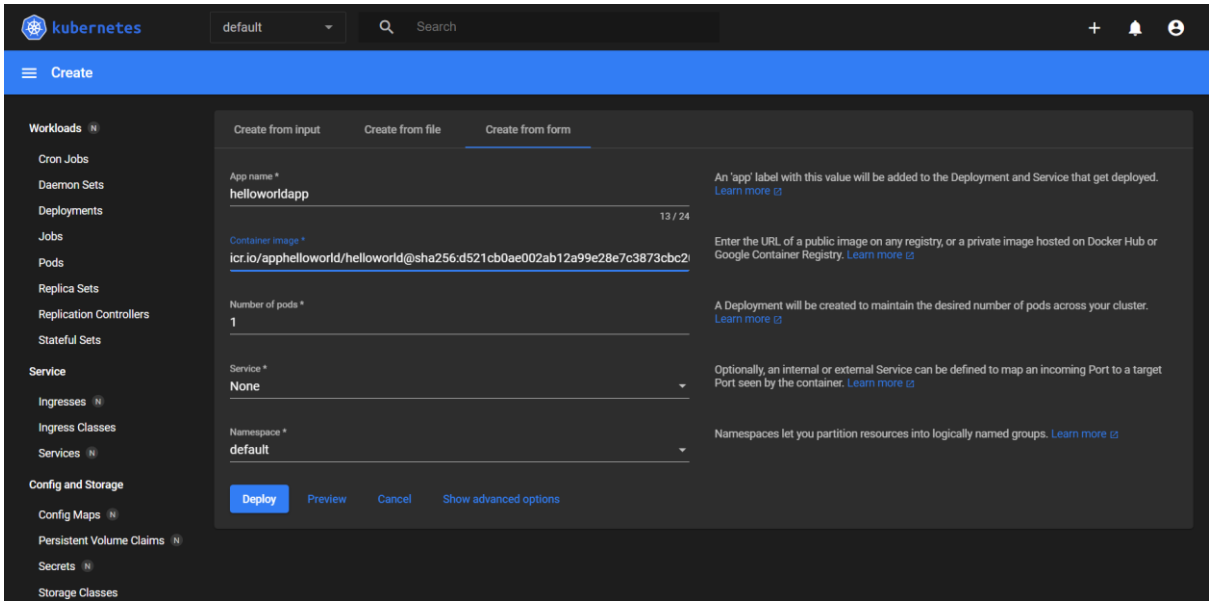


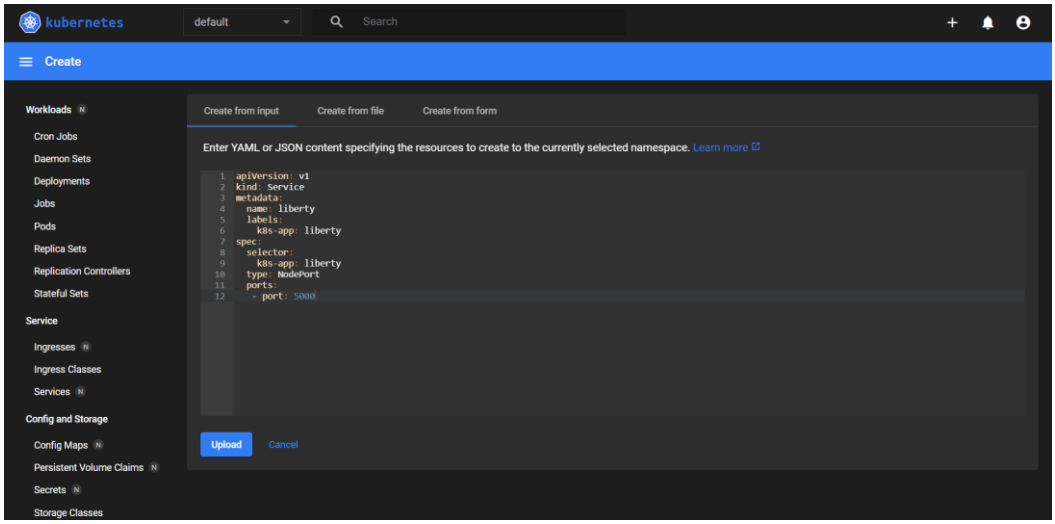


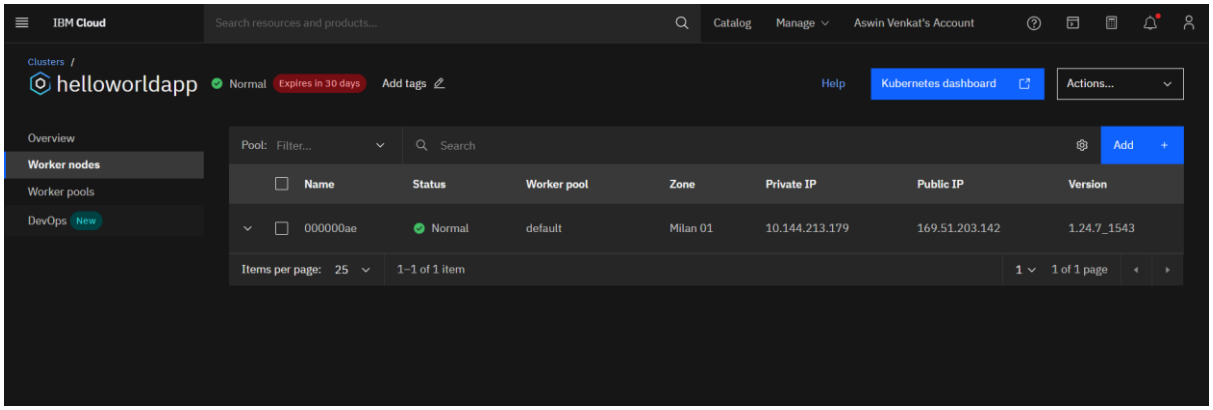
4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image and also expose the same app to run in nodeport.

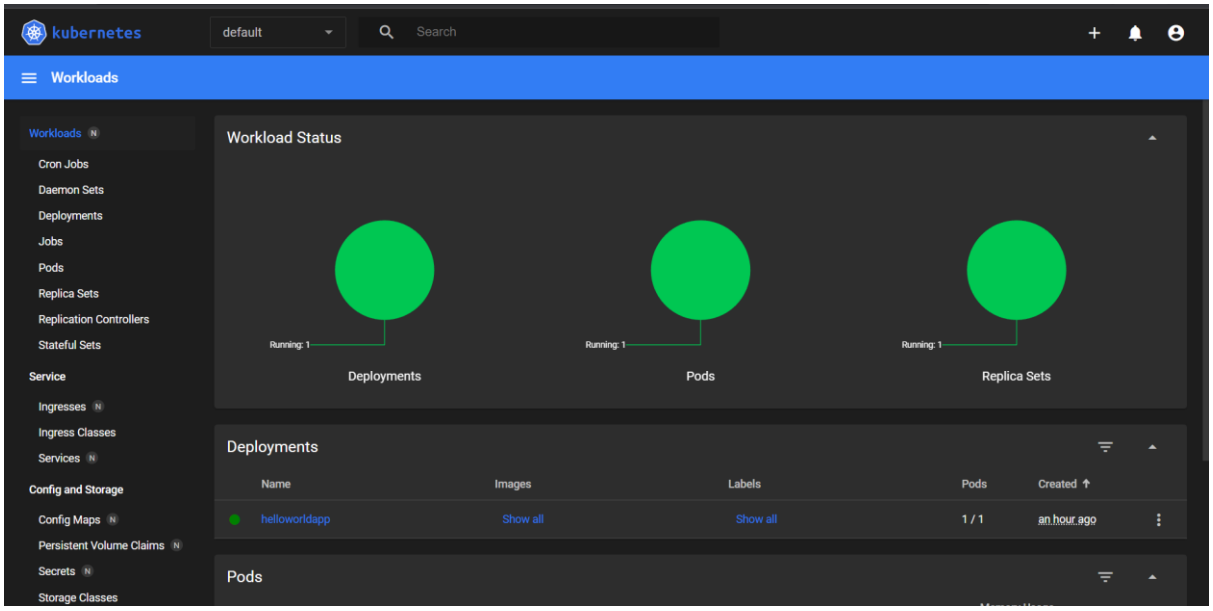
Cluster:

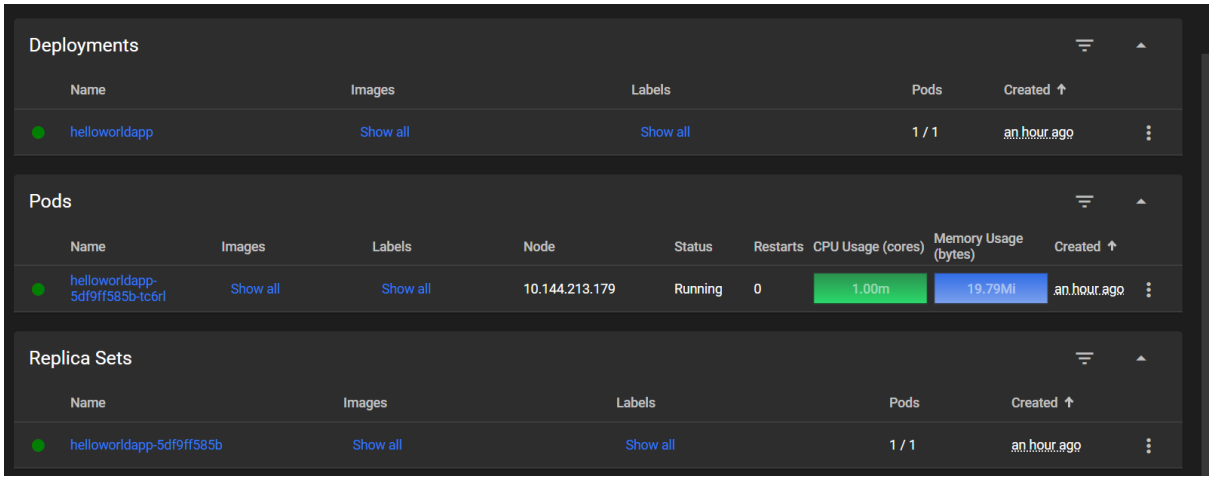


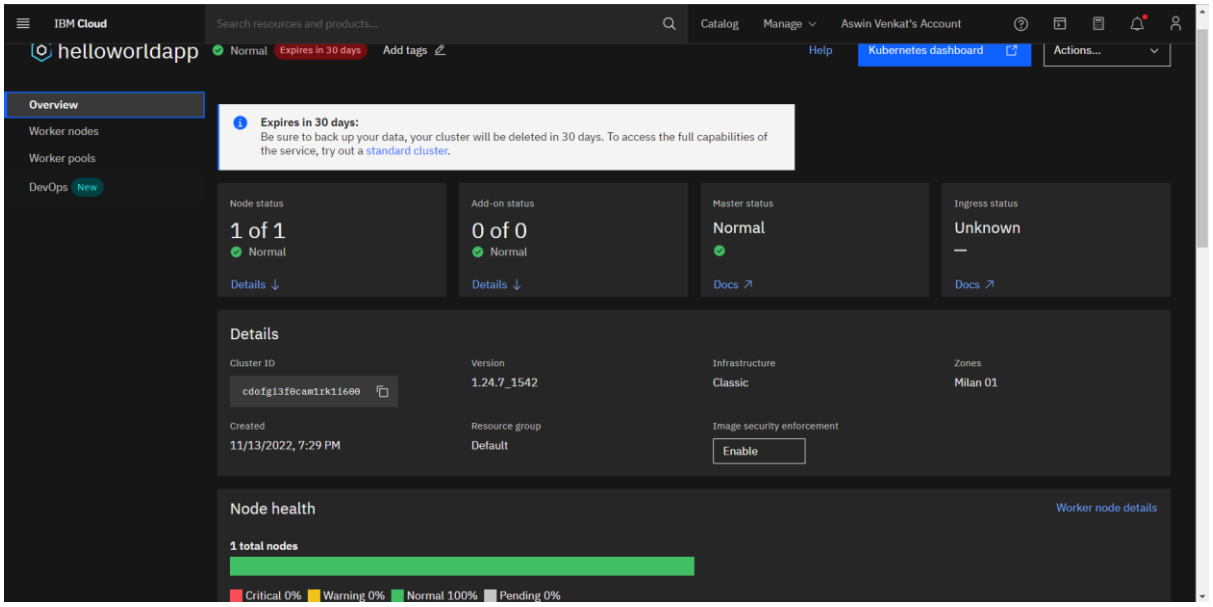



kubernetes
default
Search
Create
Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Ingress Classes
Services
Config and Storage
Config Maps
Persistent Volume Claims
Secrets
Storage Classes
Create from input
Create from file
Create from form
Enter YAML or JSON content specifying the resources to create to the currently selected namespace. Learn more
apiVersion: v1
kind: Service
metadata:
name: liberty
labels:
k8s-app: liberty
spec:
selector:
k8s-app: liberty
type: NodePort
ports:
- port: 5000
Upload
Cancel


IBM Cloud
Search resources and products...
Catalog
Manage
Aswin Venkat's Account
Clusters /
helloworldapp
Normal
Expires in 30 days
Add tags
Help
Kubernetes dashboard
Actions...
Overview
Worker nodes
Worker pools
DevOps
New
Pool: Filter...
Search
Add
Name
Status
Worker pool
Zone
Private IP
Public IP
Version
000000ae
Normal
default
Milan 01
10.144.213.179
169.51.203.142
1.24.7_1543
Items per page: 25
1–1 of 1 item
1
1 of 1 page


kubernetes
default
Search
Workloads
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
Workload Status
Running: 1
Deployments
Running: 1
Pods
Running: 1
Replica Sets
Deployments
Name
Images
Labels
Pods
Created
helloworldapp
Show all
Show all
1 / 1
an hour ago
Pods





Hello World! from Flask.