

Assignment 4

Assignment date	12 October 2022
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Student roll no	951319104054
Maximum Marks	2 Marks

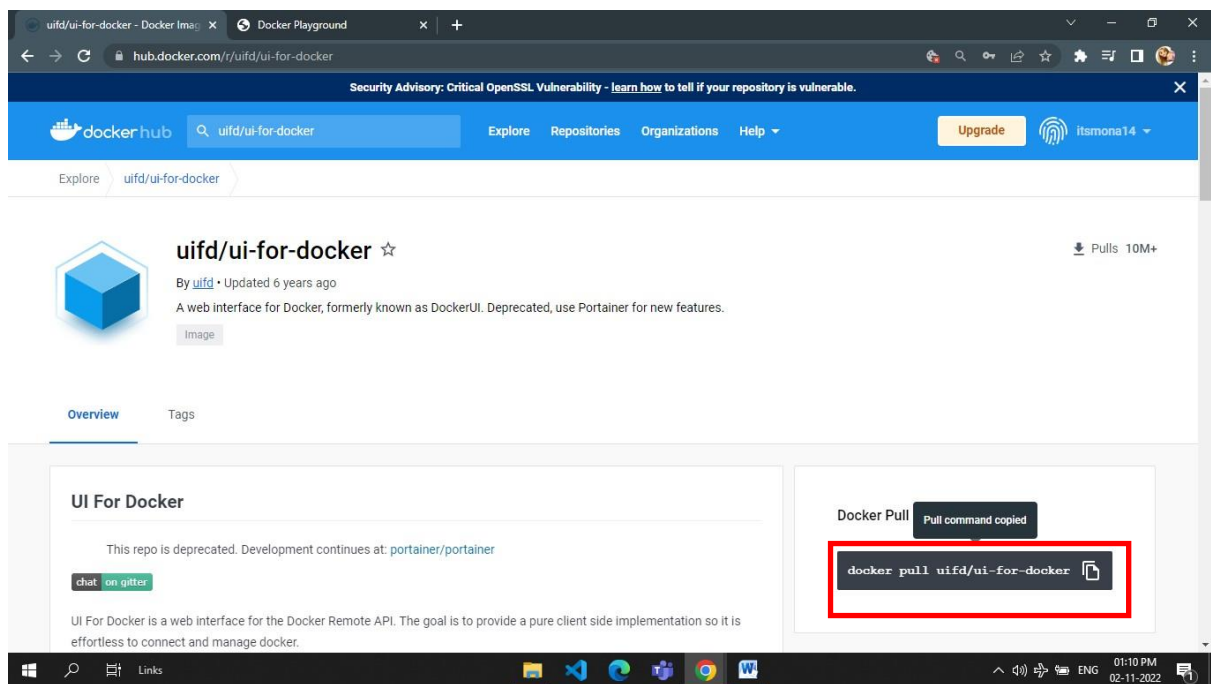
Question 1:

Pull an image from docker hub and run it on docker playground.

Solution 1:

```
docker pull uifd/ui-for-docker
```

```
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
```



Docker playground:

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:57:05, a 'CLOSE SESSION' button, and a list of instances. The main area displays details for a container named 'cdi0ji60_cdi0jpe0qau0008f9u8g'. It shows the IP address 192.168.0.13, an 'OPEN PORT' button set to 9000, and resource usage: 1.59% (63.77MiB / 3.906GiB) memory and 0.45% CPU. An SSH command is provided: 'ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-with-docker.com'. Below this are 'DELETE' and 'EDITOR' buttons. A terminal window shows the following commands and output:

```
# 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.
#####
[rodel] (local) root@192.168.0.13 ~
$ docker pull uifd/ui-for-docker
Using default tag: latest
latest: Pulling from uifd/ui-for-docker
841194d080c8: Pull complete
Digest: sha256:fe371ff5a69549269b24073a5ab1244dd4c0b834cbadf244870572150b1cb749
Status: Downloaded newer image for uifd/ui-for-docker:latest
docker.io/uifd/ui-for-docker:latest
[rodel] (local) root@192.168.0.13 ~
$ docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
c2557355d58010b2607d19372fd954a94b3f2c922d1c5377d8458ff941cb2cab
[rodel] (local) root@192.168.0.13 ~
$
```

Docker UI:

The screenshot shows the Docker UI interface. The top navigation bar includes 'Dashboard', 'Containers', 'Containers Network', 'Images', 'Networks', 'Volumes', and 'Info'. A 'Refresh' button is on the right. The main content area is titled 'Running Containers' and shows a single container named 'serene_keller' with a status of 'Up 17 seconds'. A donut chart titled 'Status' shows the distribution of container states: Running (green), Stopped (red), and Ghost (grey). Below this, there are two line graphs: 'Containers created' and 'Images created', both showing a count of 1 over time.

Question 2:

Create a docker file for the job portal app or hello world app and deploy it in docker desktop app.

Solution 2:

DockerFile

Dockerfile - Notepad

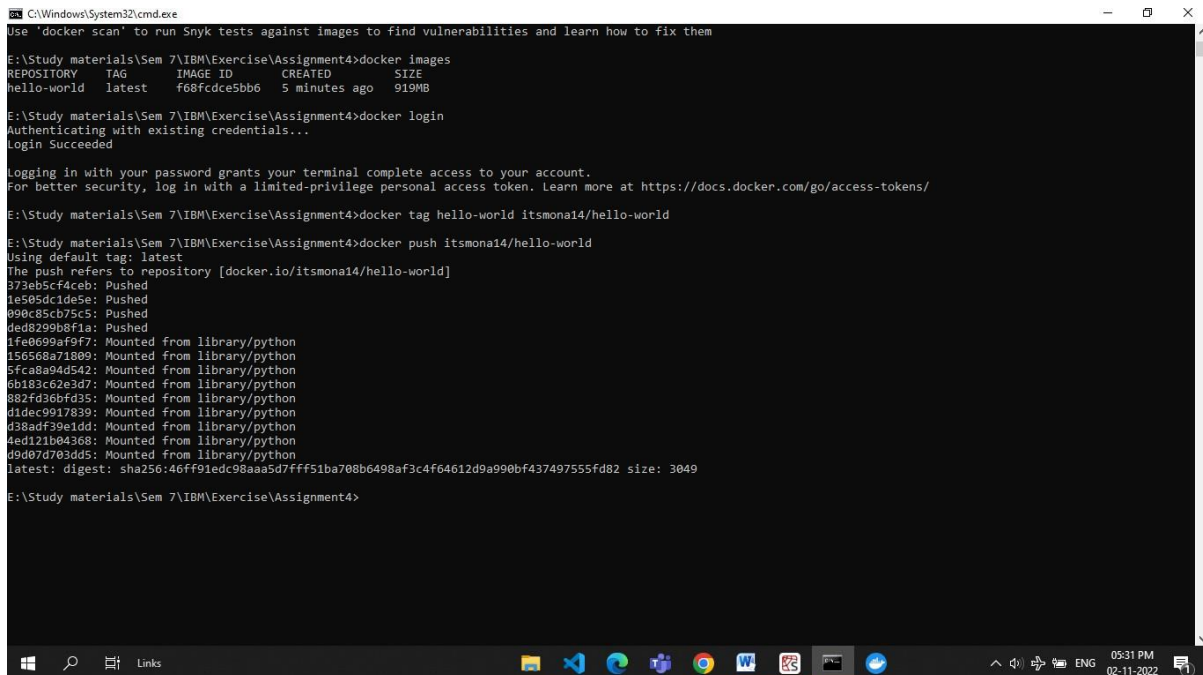
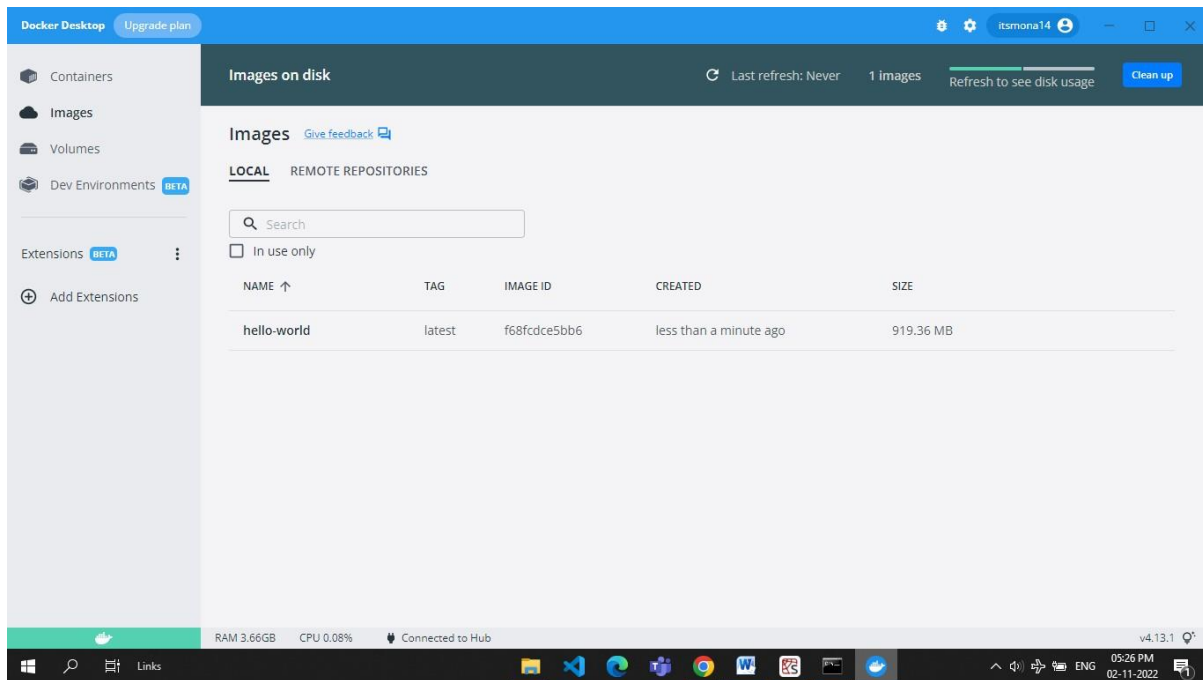
File Edit Format View Help

```
FROM python:3.8
WORKDIR /app
ADD . /app
COPY requirements.txt /app
RUN python3 -m pip install -r requirements.txt
EXPOSE 5000
CMD ["python", "app.py"]
```

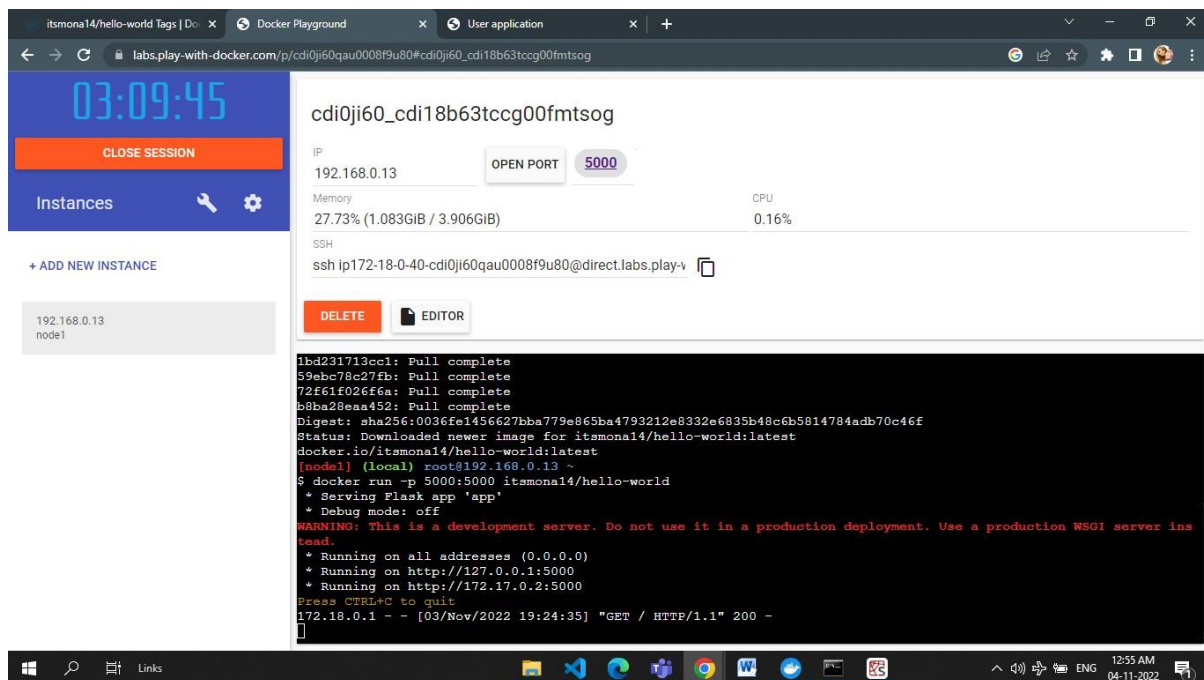
Bulid Docker image

```
C:\Windows\System32\cmd.exe
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker build -t hello-world .
[+] Building 160.4s (10/10) FINISHED
-> [internal] load build definition from Dockerfile
-> >> transferring dockerfile: 194B
-> [internal] load .dockerignore
-> >> transferring context: 2B
-> [internal] load metadata for docker.io/library/python:3.8
[1/5] FROM docker.io/library/python:3.8@sha256:899d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5
-> resolve docker.io/library/python:3.8@sha256:899d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5
-> sha256:9009727fec8dc17c25b21573681851f092e054f57cc07eb43937a1a47114480 8.56kB / 8.56kB
-> sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770 55.05MB / 55.05MB
-> sha256:4edced85876dc18412817019074f5e04a8ede4e2fc09d06af13df3f80d78a70d 10.88MB / 10.88MB
-> sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5 1.86kB / 1.86kB
-> sha256:254101fc7377ef89a912ce9ad7408081a01e0a35bffc9e7d0bb86d0b6e1c3f 2.22kB / 2.22kB
-> sha256:de8a4c6cae8001b0b07377e10220a914daa03bc93fa79663cbf2dcf1000b6f1 5.10MB / 5.10MB
-> sha256:a7969cfff0f46e6a91291f076b19ecbe93c03ea4ded0d14042aebc4cc4211a43 54.59MB / 54.59MB
-> sha256:74fbfde6af91271fb80f0a1716224dce5c0ehead3609943702a9cbb4d6d3d 196.07MB / 196.07MB
-> sha256:16fe51aed899f36017fe42b590b1a622b29e0e8c3622e92e13df14578825eb37 6.29MB / 6.29MB
-> sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 17.39MB / 17.39MB
-> sha256:aa3c4359fdb43306069ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 2348 / 2348
-> extracting sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770
-> sha256:58700fbcfa8c82e5d24a9f76ba7748a194c4fd7312a397800b4637f72ce91b6 2.09MB / 2.09MB
-> extracting sha256:de8a4c6cae8001b0b07377e10220a914daa03bc93fa79663cbf2dcf1000b6f1
-> extracting sha256:4edced85876dc18412817019074f5e04a8ede4e2fc09d06af13df3f80d78a70d
-> extracting sha256:a7969cfff0f46e6a91291f076b19ecbe93c03ea4ded0d14042aebc4cc4211a43
-> extracting sha256:74fbfde6af91271fb80f0a1716224dce5c0ehead3609943702a9cbb4d6d3d
-> extracting sha256:16fe51aed899f36017fe42b590b1a622b29e0e8c3622e92e13df14578825eb37
-> extracting sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4
-> extracting sha256:aa3c4359fdb43306069ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1
-> extracting sha256:58700fbcfa8c82e5d24a9f76ba7748a194c4fd7312a397800b4637f72ce91b6
-> [internal] load build context
-> >> transferring context: 1.15kB
[2/5] WORKDIR /app
-> [3/5] ADD . /app
-> [4/5] COPY requirements.txt /app
-> [5/5] RUN python3 -m pip install -r requirements.txt
-> exporting to image
-> >> exporting layers
-> >> writing image sha256:f68fcdce5bb665f0e8f47bc4d137a4f7e0533348402c5bfdad71121d7043f63
-> >> naming to docker.io/library/hello-world
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```

Deploy it on Docker hub



Tested it using Docker playground

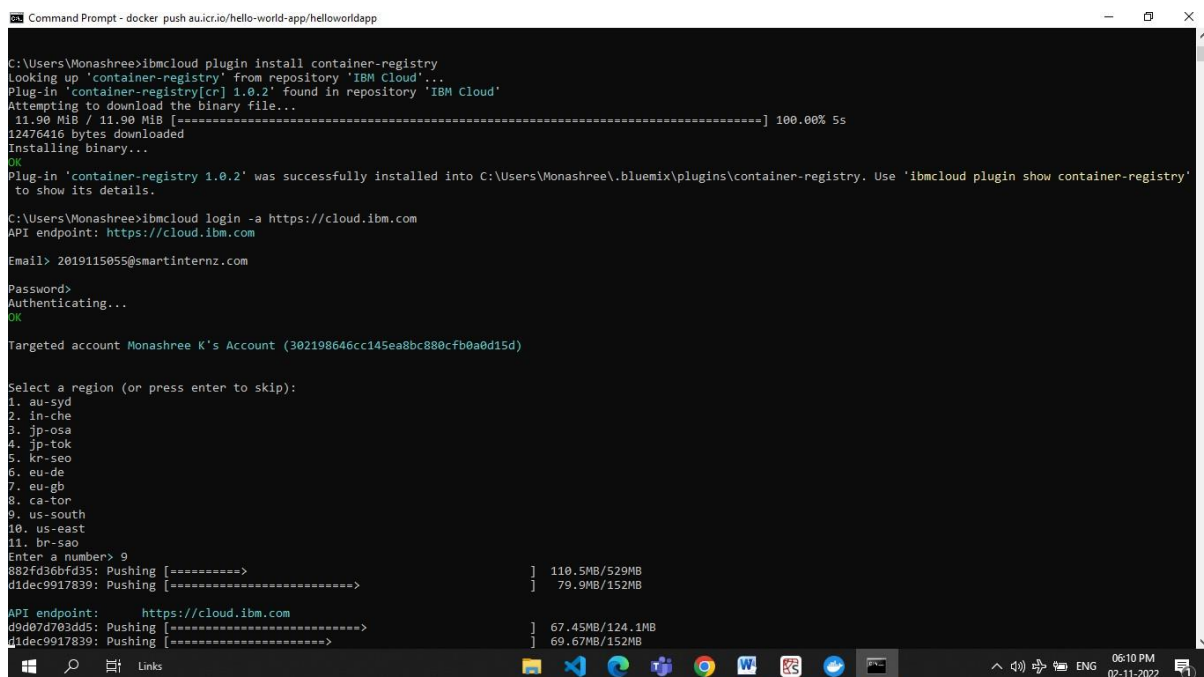


Question 3:

Create an IBM container registry and deploy helloworld app or job portal app.

Solution 3:

My image link: au.icr.io/hello-world-app/hello-world



```
C:\Windows\System32\cmd.exe - docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world

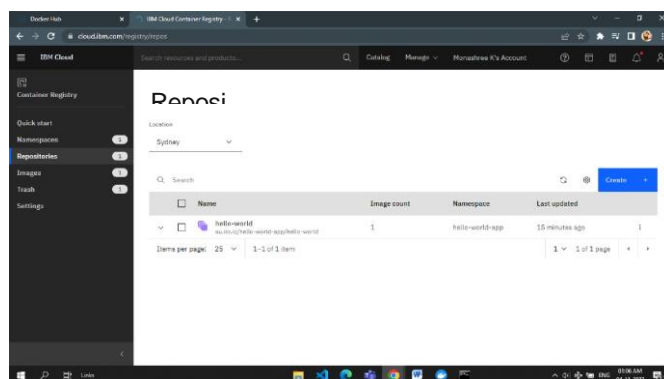
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc0e0: Pushed
006e0938fc5e: Pushed
4bb20ce8724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1559e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/hello-world-app
882fd36bf3d5: Mounted from hello-world-app/hello-world-app
d1dec9917839: Mounted from hello-world-app/hello-world-app
d38adf39e1dd: Mounted from hello-world-app/hello-world-app
4ed121b04368: Mounted from hello-world-app/hello-world-app
d9d07d703dd5: Mounted from hello-world-app/hello-world-app
latest: digest: sha256:0030fe1456627bba779e805ba4793212e8332e6835b48c6b5814784adb70c46f size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>ibmcloud cr image-list
Listing images...

Repository          Tag    Digest          Namespace      Created      Size    Security status
au.icr.io/hello-world-app/hello-world  latest  0030fe145662    hello-world-app  12 minutes ago  356 MB  -

OK

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://172.17.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [03/Nov/2022 19:35:58] "GET / HTTP/1.1" 200 -
```



Question 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.

Solution 4:

<https://raw.githubusercontent.com/itsmona14/IBM-Assignment-cloud/main/deployment.yaml>

```
apiVersion: v1
kind: Service
metadata:
  name: hello-world-deployment
spec:
  ports:
    - port: 5000
      targetPort: 5000
  selector:
    app: hello-world
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: hello-world
  template:
    metadata:
      labels:
        app: hello-world
    spec:
      containers:
        - name: hello-world
          image: au.icr.io/hello-world-app/hello-world
          imagePullPolicy: Always
          ports:
            - containerPort: 5000
```

mycluster-free - IBM Cloud

cloud.ibm.com/kubernetes/clusters/cd11j33fa6mchav5kig/overview

IBM Cloud

Search resources and products...

Catalog

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Monashree K's Account

Help

Kubernetes dashboard

Actions...

Clusters / mycluster-free

Normal Expires in 29 days Add tags

Overview

Worker nodes

Worker pools

Expires in 29 days: Be sure to back up your data, your cluster will be deleted in 29 days. To access the full capabilities of the service, try out a standard cluster.

Node status

1 of 1

Details

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Details g

Normal

Unknown

Docs

cd11j33fa6mchav5kig

1.24.7 15 2

Classic

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Default

Image security enforcement

Enable

kubernetes

default

Search

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Workloads > Deployments

Workloads

Daemon Sets

Replication Controllers

Service

Ingresses

Ingress Classes

Services

CPU Usage

Memory usage

Deployments

Name	Images	Labels	Pods	Created I
hello-world-deployment	Show all		1 / 1	34 minutes ago

Config Maps

Links

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