

Date	03 November 2022
Team ID	PNT2022TMID31668
Name	PADMANATHAN R
Project Name	CONTAINMENT ZONE ALERTING

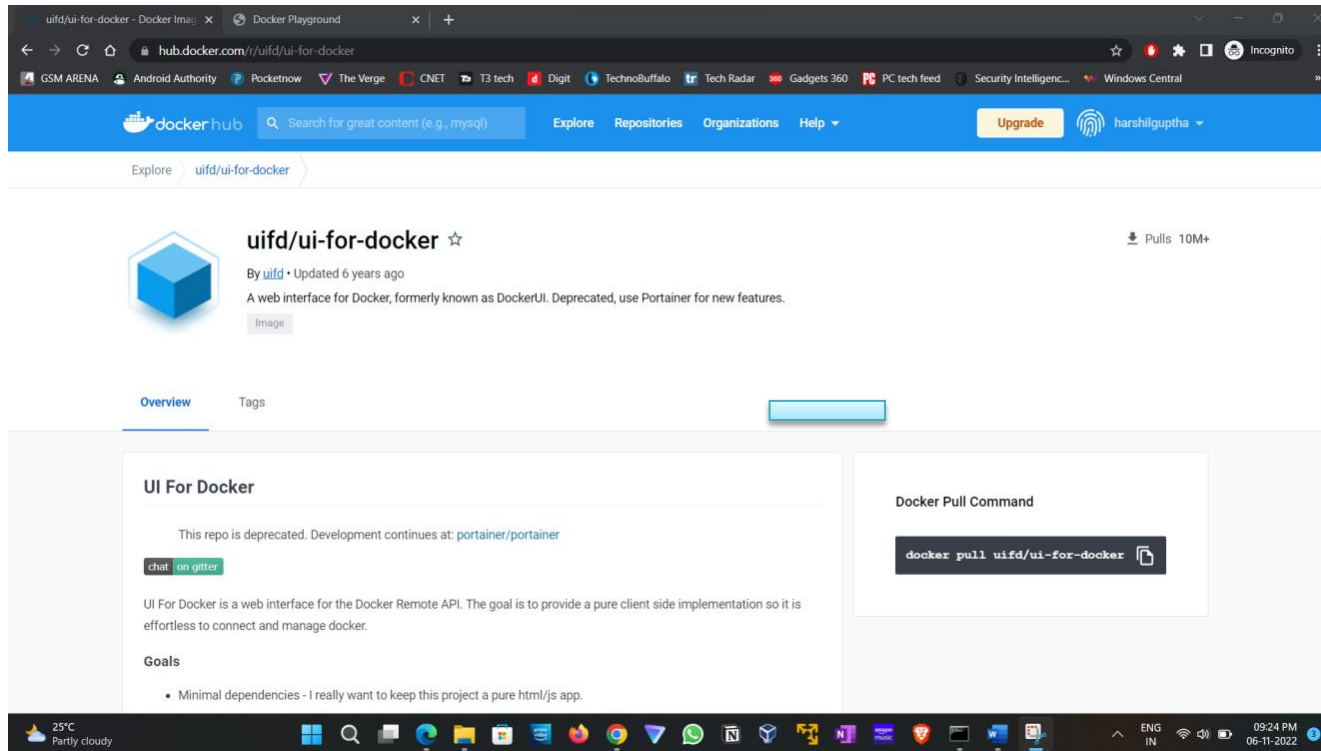
Question 1:

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

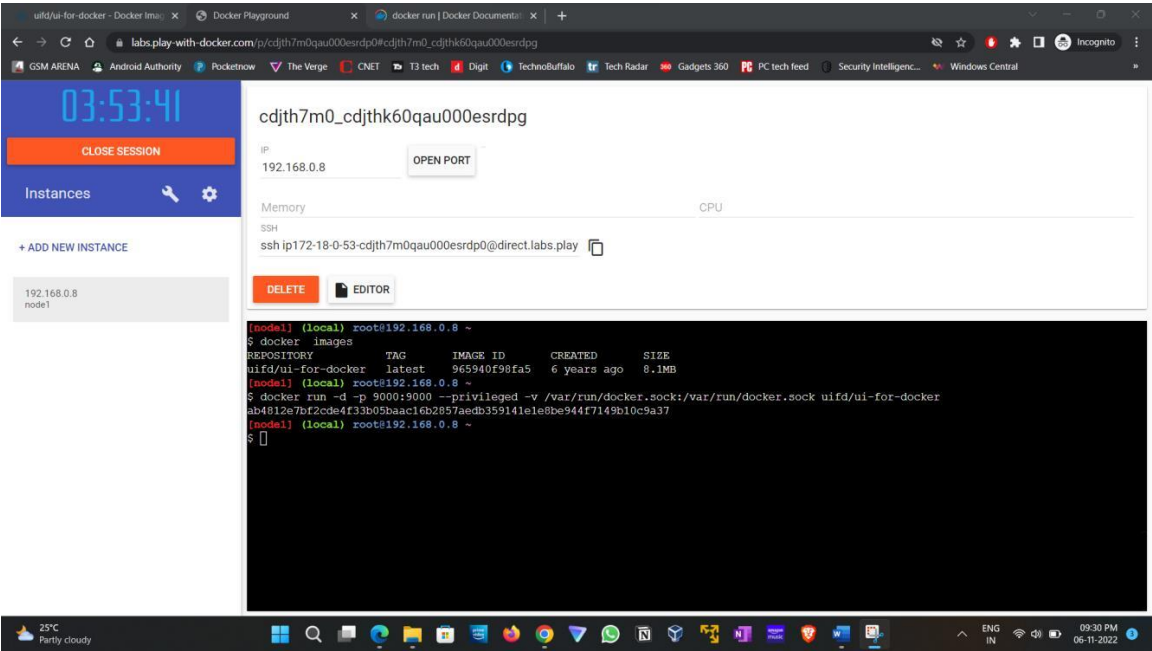
Solution 1:

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

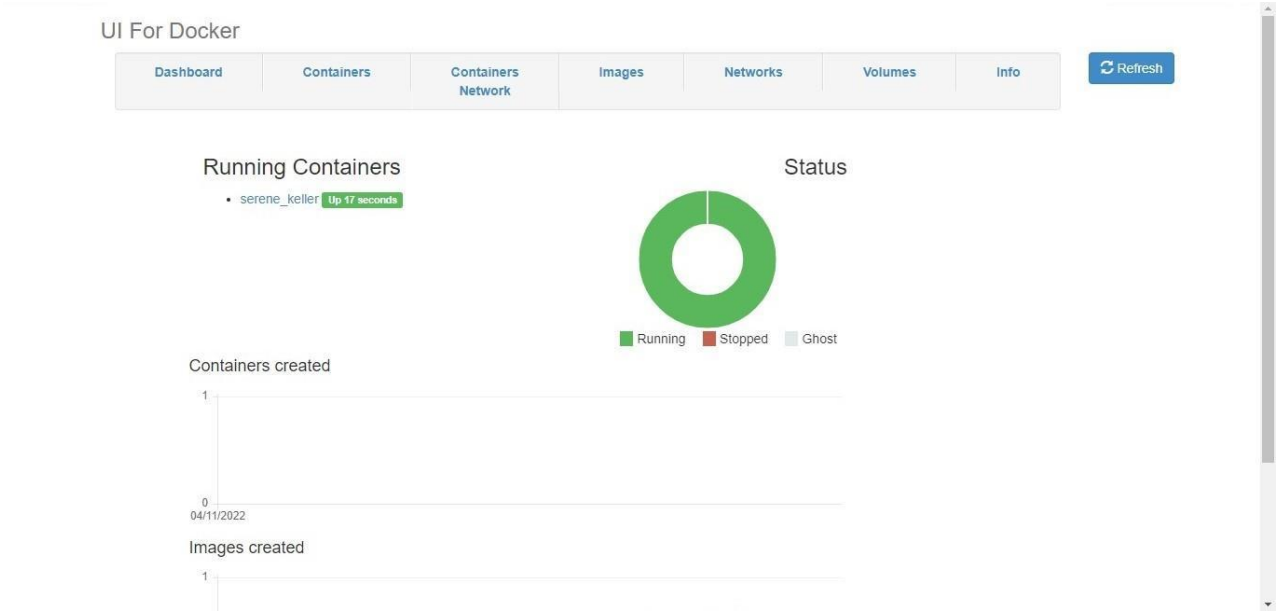
```
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock uifd/ui-for-docker
```



Docker playground:



Docker UI:



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 0.0s
=> => transferring dockerfile: 194B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/python:3.8 5.8s
=> [1/5] FROM docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5 149.9s
=> => resolve docker.io/library/python:3.8@sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5 0.0s
=> => sha256:900972f9eecd8c17c25b21573681851f092e054f57ccd7eb43937a1a47114480 8.56kB / 8.56kB 0.0s
=> => sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770 55.85MB / 55.85MB 65.2s
=> => sha256:4edced8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d 10.88MB / 10.88MB 8.7s
=> => sha256:089d758211770a2dd03ecc4b10a8d851f6f77af3f1e3f3620d8519190b8aa1d5 1.86kB / 1.86kB 0.0s
=> => sha256:254101fcf737f709a912ce9ad7488801a01e0a35bffc5e7d6bb86d0b6e1c3f 2.22kB / 2.22kB 0.0s
=> => sha256:de4a4c6cae8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1 5.16MB / 5.16MB 18.3s
=> => sha256:a7969cfbf46e6a91291fd76b19ecbe93c03ea4ded0d14042aebc4c0c4211a43 54.59MB / 54.59MB 47.5s
=> => sha256:74fbfd6af91271fb88f0a1716224dce5c0ehead3609943792a9cb6ba4d6d3d 196.87MB / 196.87MB 133.3s
=> => sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 6.29MB / 6.29MB 53.8s
=> => sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 17.39MB / 17.39MB 68.0s
=> => sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 234B / 234B 67.3s
=> => extracting sha256:17c9e6141fdb3387e5a1c07d4f9b6a05ac1498e96029fa3ea55470d4504f7770 10.8s
=> => sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fd7f7312a397806b4637f72ce01b6 2.89MB / 2.89MB 70.7s
=> => extracting sha256:de4a4c6cae8801bb0b7377e10220a914da403bc93fa79663cbf2dcf1800b6f1 1.3s
=> => extracting sha256:4edced8587e6c18412817019074f5e04a8ede4e2fc89d06af13df3f80d78a70d 1.0s
=> => extracting sha256:a7969cfbf46e6a91291fd76b19ecbe93c03ea4ded0d14042aebc4c0c4211a43 13.1s
=> => extracting sha256:74fbfd6af91271fb88f0a1716224dce5c0ehead3609943792a9cb6ba4d6d3d 13.6s
=> => extracting sha256:16fe51aed899f36017fe42b598b1a622b29ebe8c3622e92e13df14578825eb37 0.4s
=> => extracting sha256:2b979a731384cf50dac8fd255d381b70028d67b69b45c1a2b6c3ea10b92636d4 1.1s
=> => extracting sha256:aa3c4359fdb43308669ae8ba78b2ebb713221ef3a3eca97f93590508f1506de1 0.0s
=> => extracting sha256:58700fbcfa0c82e5d24a9f76ba7748a194c4fd7f7312a397806b4637f72ce01b6 0.4s
=> [internal] load build context 0.0s
=> => transferring context: 1.15kB 0.0s
=> [2/5] WORKDIR /app 0.4s
=> [3/5] ADD . /app 0.1s
=> [4/5] COPY requirements.txt /app 0.0s
=> [5/5] RUN python3 -m pip install -r requirements.txt 3.8s
=> exporting to image 0.2s
=> => exporting layers 0.2s
=> => writing image sha256:f68fcdce5bb665f80e8f47bc4d137a47e0533348402c5bfad71121d7d43f63 0.0s
=> => naming to docker.io/library/hello-world 0.0s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```

Deploy it on Docker hub

Containers

Images

Volumes

Dev Environments BETA

Extensions BETA

Add Extensions

Images on disk

Last refresh: Never 1 images Refresh to see disk usage Clean up

Images Give feedback

LOCAL

REMOTE REPOSITORIES

Search

☐

In use only

NAME ↑	TAG	IMAGE ID	CREATED	SIZE
hello-world	latest	f68fcdce5bb6	less than a minute ago	919.36 MB

RAM 3.66GB CPU 0.08% Connected to Hub

v4.13.1

C:\Windows\System32\cmd.exe

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

hello-world latest f68fcdce5bb6 5 minutes ago 919MB

E:\Study materials\Sem 7\IBM\Exercise\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:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world itsmona14/hello-world

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push itsmona14/hello-world

Using default tag: latest

The push refs to repository [docker.io/itsmona14/hello-world]

373eb5cf4ceb: Pushed

1e505ddc1de5e: Pushed

090c85cb75c5: Pushed

ded8299b8f1a: Pushed

1fe0699af9f7: Mounted from library/python

156568a71809: Mounted from library/python

5fca8a94d542: Mounted from library/python

6b183c62e3d7: Mounted from library/python

882fd36bfd35: Mounted from library/python

d1dec9917839: Mounted from library/python

d38adf39e1dd: Mounted from library/python

4ed121b84368: Mounted from library/python

d9d07d703dd5: Mounted from library/python

latest: digest: sha256:46ff91edc98aaa5d7fff51ba708b6498af3c4fe4612d9a990bf437497555fd82 size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>

Tested it using Docker playground

03:09:45

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13
node1

cdi0ji60_cdi18b63tccg00fmtsog

IP: 192.168.0.13 OPEN PORT 5000

Memory: 27.73% (1.083GiB / 3.906GiB) CPU: 0.16%

SSH: ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-v

DELETE EDITOR

```
1bd231713cc1: Pull complete
59ebc78c27fb: Pull complete
72f61f026f6a: Pull complete
b8ba28aaa452: Pull complete
Digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f
Status: Downloaded newer image for itsmona14/hello-world:latest
docker.io/itsmona14/hello-world:latest
[node1] (local) root@192.168.0.13 ~
$ docker run -p 5000:5000 itsmona14/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://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.18.0.1 - - [03/Nov/2022 19:24:35] "GET / HTTP/1.1" 200 -
```

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

```
Command Prompt - docker push au.icr.io/hello-world-app/helloworldapp

C:\Users\Monashree>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% 5s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Monashree\bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry'
to show its details.

C:\Users\Monashree>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com

Email> 2019115055@smartinternz.com

Password>
Authenticating...
OK

Targeted account Monashree K's Account (302198646cc145ea8bc880cfb0a0d15d)

Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. au-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
882fd36bfd35: Pushing [=====] 110.5MB/529MB
d1dec9917839: Pushing [=====] 79.9MB/152MB

API endpoint: https://cloud.ibm.com
d6d07d703d05: Pushing [=====] 67.45MB/124.1MB
d1dec9917839: Pushing [=====] 69.67MB/152MB

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

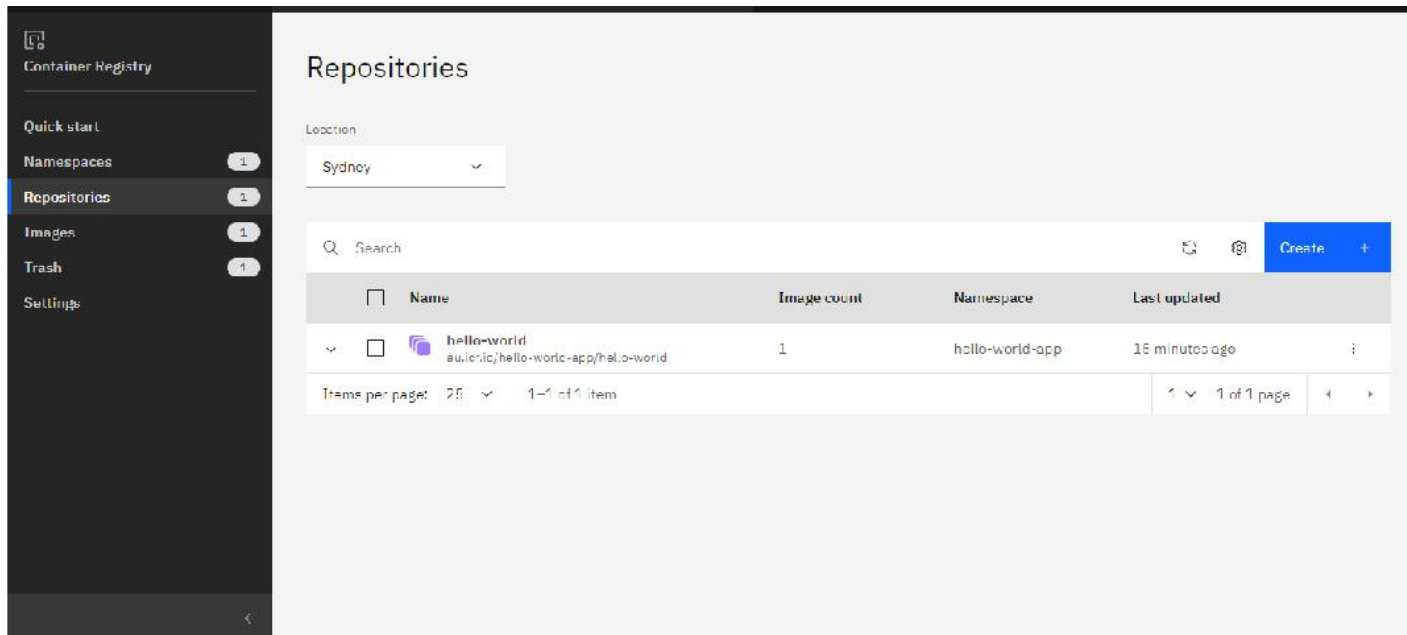
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc009: Pushed
006e092bfc5e: Pushed
4bb70ce0724f: Pushed
402dea3c8533: Pushed
f5d161bbe139: Pushed
1569e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/helloworldapp
882fd36bfd35: Mounted from hello-world-app/helloworldapp
d1dec9917839: Mounted from hello-world-app/helloworldapp
d38adf39e1dd: Mounted from hello-world-app/helloworldapp
d6d121b04368: Mounted from hello-world-app/helloworldapp
d6d07d703d05: Mounted from hello-world-app/helloworldapp
latest: digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f 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  0036fe145662    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://172.0.0.1:5000
 * 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
```


Overview

[Worker nodes](#)[Worker pools](#)[DevOps](#) New

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✓ Normal[Details](#) ↓

Add-on status

0 of 0✓ Normal[Details](#) ↓

Master status

Normal✓[Docs](#) ↗

Ingress status


Unknown

—

[Docs](#) ↗

Details

Cluster ID

cd1f30f0a6mchav0kig 

Version

1.24.7_1542

Infrastructure

Classic

Zones

Milan 01

Created

04/11/2022, 01:12

Resource group

Default

Image security enforcement

[Enable](#)

