

**Assignment -4**  
**Docker and kubernetes**

Date	10 <sup>th</sup> October 2022
Team ID	PNT2022TMID08153
Project Name	Project – Containment Zone Alerting Application
Maximum Marks	4 Marks

**Question-1: pull an image from docker hub and run it in docker playground.**

**1) pull an image form docker hub**

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1766]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ADMIN>docker push shabariganesan/docker_with_flask_form
Using default tag: latest
The push refers to repository [docker.io/shabariganesan/docker_with_flask_form]
An image does not exist locally with the tag: shabariganesan/docker_with_flask_form

C:\Users\ADMIN>docker pull shabariganesan/docker_with_flask_form
Using default tag: latest
latest: Pulling from shabariganesan/docker_with_flask_form
1671565cc8df: Pull complete
3e94d13e55e7: Pull complete
fa9c7528c685: Pull complete
53ad072f9cd1: Pull complete
d6b983117533: Pull complete
d8092d56ded5: Pull complete
c71afc637d59: Pull complete
864a18b3c784: Pull complete
4334b2fe8293: Pull complete
8944578783f4: Pull complete
f885911288d0: Pull complete
086f369ca59f: Pull complete
e113bd27b88e: Pull complete
Digest: sha256:c61f28873bflc909786ce991b8b60cd976765077f344e34d50e6cce8cf8d95c3
Status: Downloaded newer image for shabariganesan/docker_with_flask_form:latest
docker.io/shabariganesan/docker_with_flask_form:latest

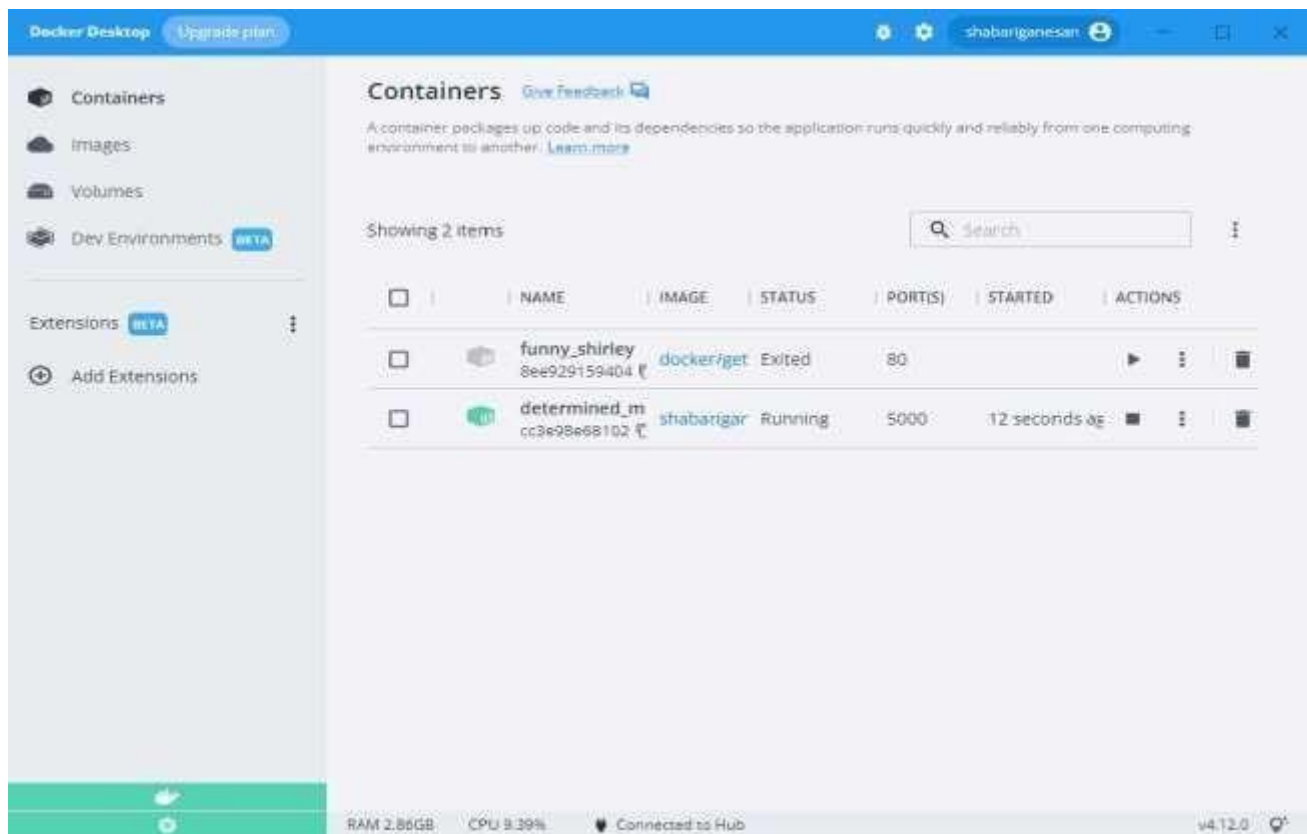
C:\Users\ADMIN>
```

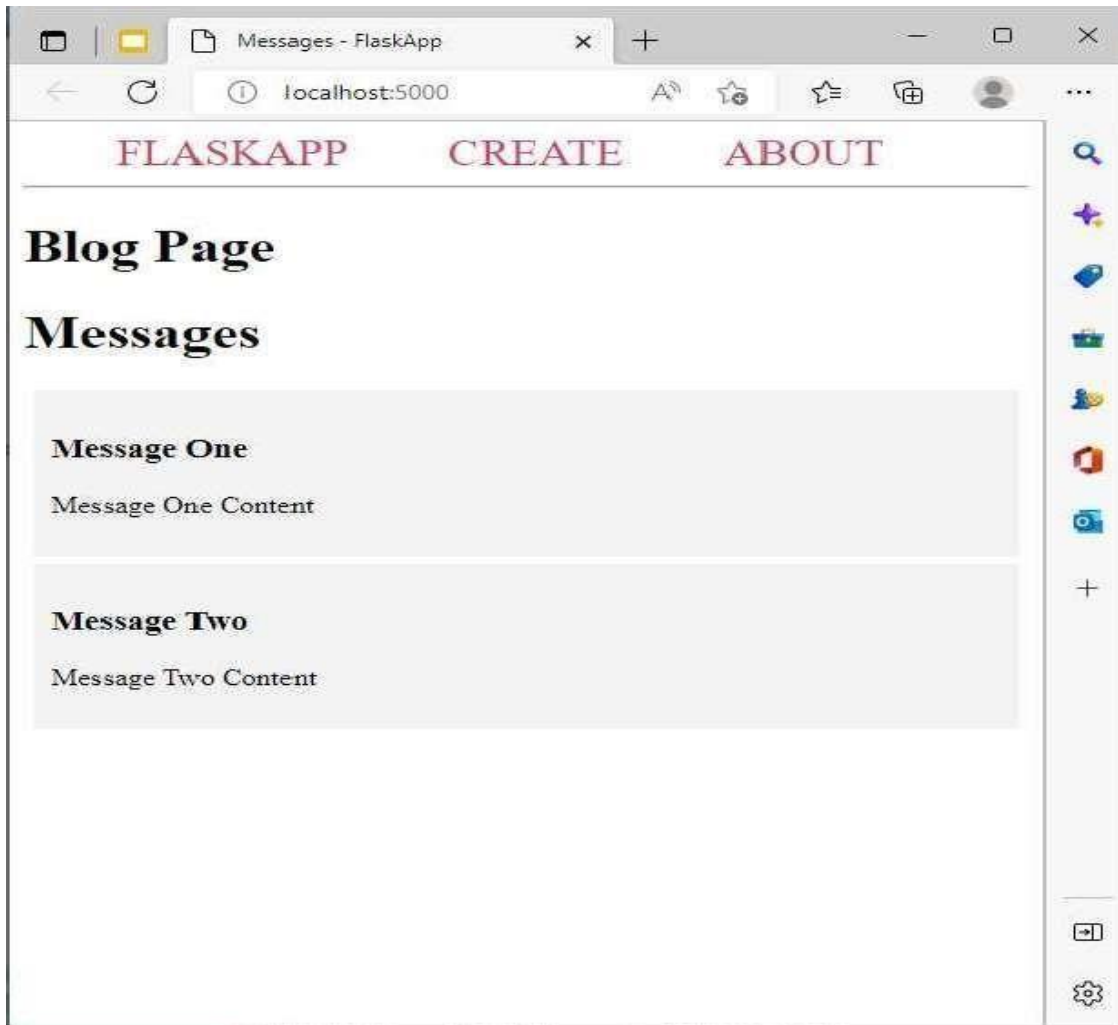
**2) runt it in docker playground**

```
Select Command Prompt
Microsoft Windows [Version 10.0.19044.1766]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ADMIN> docker run -d -p 5000:5000 shabariganesan/docker_with_flask_form
cc3e98e68102474e9c89c7674b07ad17a5645a7216d7c854d785197bdb54dee5

C:\Users\ADMIN>
```





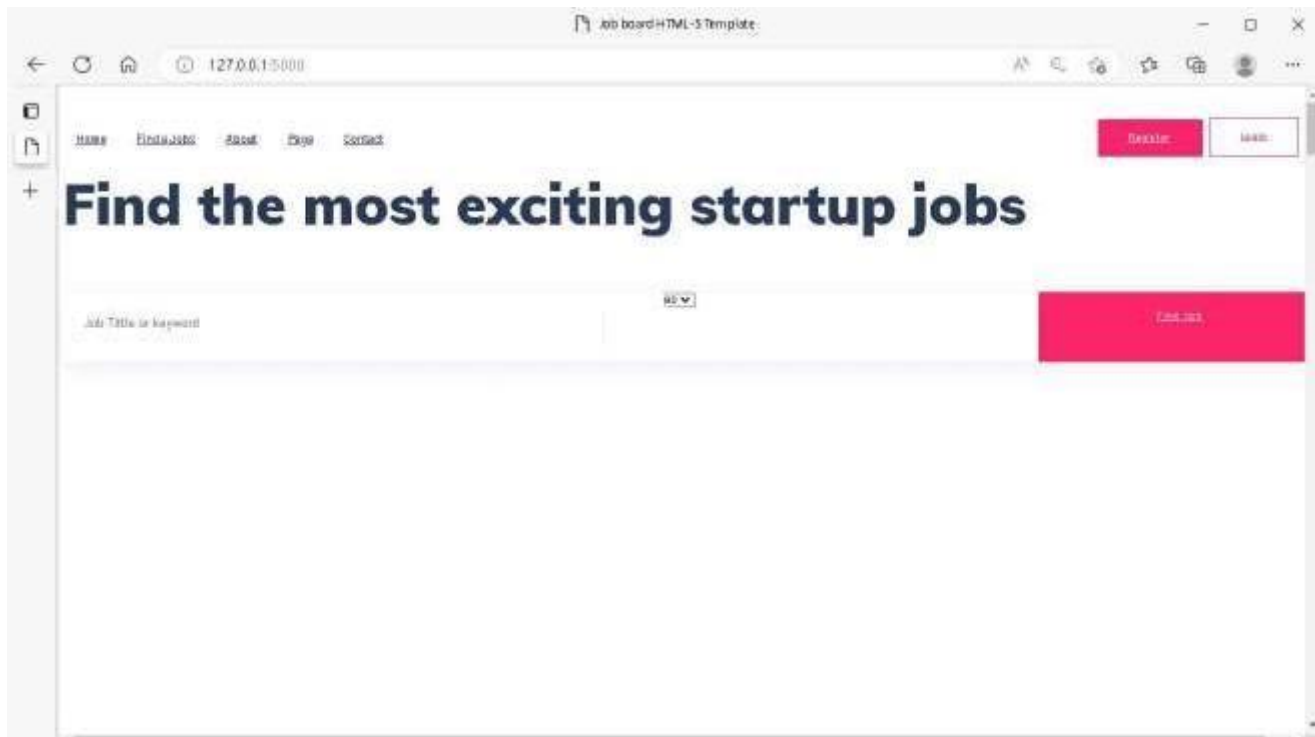
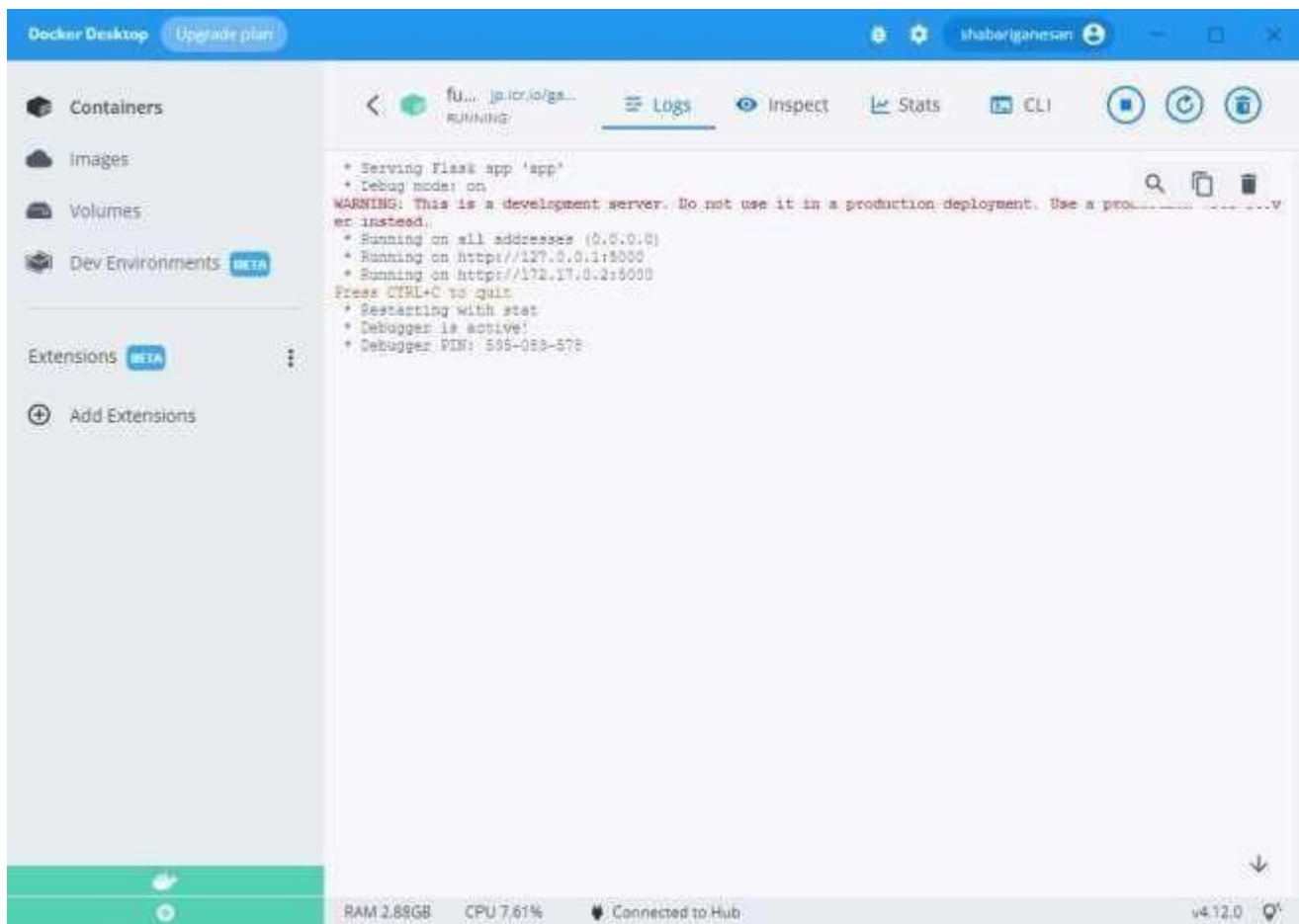
**Question-2:**

**Create a docker file for the jobportal application and deploy it in docker application.**

**1) Creating a docker file for the jobportal application**







[running in docker desktop 1](#)

**Question-3: Create an IBM container registry and deploy helloworld app or jobportalapp**

**1) create an IBM container registry**

```
Command Prompt
Account:      Ganesan S's Account (2a239674b9ba463891acc3c4fcbe0a99)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

New version 2.11.1 is available.
Change logs: https://github.com/IBM-Cloud/ibm-cloud-cli-release/releases/tag/v2.11.1
TIP: use 'ibmcloud config --check-version=false' to disable update check.

Do you want to update? [y/N] > y

Installing version '2.11.1'...
Downloading...
 14.88 MiB / 14.88 MiB [=====] 100.00% 2s
15604696 bytes downloaded
Saved in C:\Users\ADMIN\.bluemix\tmp\bx_2625690972\IBM_Cloud_CLI_2.11.1_amd64.exe

C:\Users\ADMIN>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% 1s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\ADMIN\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\ADMIN>
```

## 2) deployhelloworld or jobportal

```
C:\Windows\system32\cmd.exe
54acb5a6fa8b: Retrying in 1 second
8d51c618126f: Retrying in 1 second
9ff6e4d40744: Waiting
a80cd47b541: Waiting
655ed1b74428: Waiting
Failed to lookup host: 'jp.icr.io'

C:\Users\ganl\Desktop\job_portal>docker push jp.icr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganeshjob/job_portal]
1503b1584025: layer already exists
80e84fb5e186: Pushed
48c2a7a4c12b: layer already exists
9b72c7815466: layer already exists
bfc1deb0138e: layer already exists
1f123106024c: layer already exists
3d5eb1152931: Pushed
190796cdf3b1: Pushed
54acb5a6fa8b: Retrying in 1 second
8d51c618126f: Pushed
9ff6e4d40744: Pushed
a80cd47b541: Pushed
655ed1b74428: Pushing [=====] 89.88MB/124MB
^C

C:\Users\ganl\Desktop\job_portal>docker push jp.icr.io/ganeshjob/job_portal
Using default tag: latest
The push refers to repository [jp.icr.io/ganeshjob/job_portal]
1503b1584025: layer already exists
80e84fb5e186: layer already exists
48c2a7a4c12b: layer already exists
9b72c7815466: layer already exists
bfc1deb0138e: layer already exists
1f123106024c: layer already exists
3d5eb1152931: layer already exists
190796cdf3b1: layer already exists
54acb5a6fa8b: Pushed
8d51c618126f: layer already exists
9ff6e4d40744: layer already exists
a80cd47b541: layer already exists
655ed1b74428: Pushed
latest: sha256:e93189a7c97eeb9308668a54e899c161aa6eda939998c8c7a2147a7963fc207 size: 3852

C:\Users\ganl\Desktop\job_portal>
C:\Users\ganl\Desktop\job_portal>
```



IBM Cloud Container Registry Repositories

Location: Tokyo

Search

Create

Name	Image count	Namespace	Last updated
job_portal jp.icr.io/ganeshjob/job_portal	1	ganeshjob	1 day
docker_with_flask_form jp.icr.io/newnamespace/docker_with_flask_form	1	newnamespace	4 days

Items per page: 25 1-2 of 2 items 1 1 of 1 page

IBM\_Cloud\_CU\_2.1...exe Show all

IBM Cloud Container Registry Images

Location: Tokyo

View by: Digest Search

Create

Repository@digest	Tags	Manifest type	Created	Size	Security status
ganeshjob/job_portal@sha256:e93189a7c97e...	latest	Docker	1 day ago	356 MB	23 issues
newnamespace/docker_with_flask_form@sha256:cd1126873af1...	latest	Docker	4 days ago	356 MB	23 issues

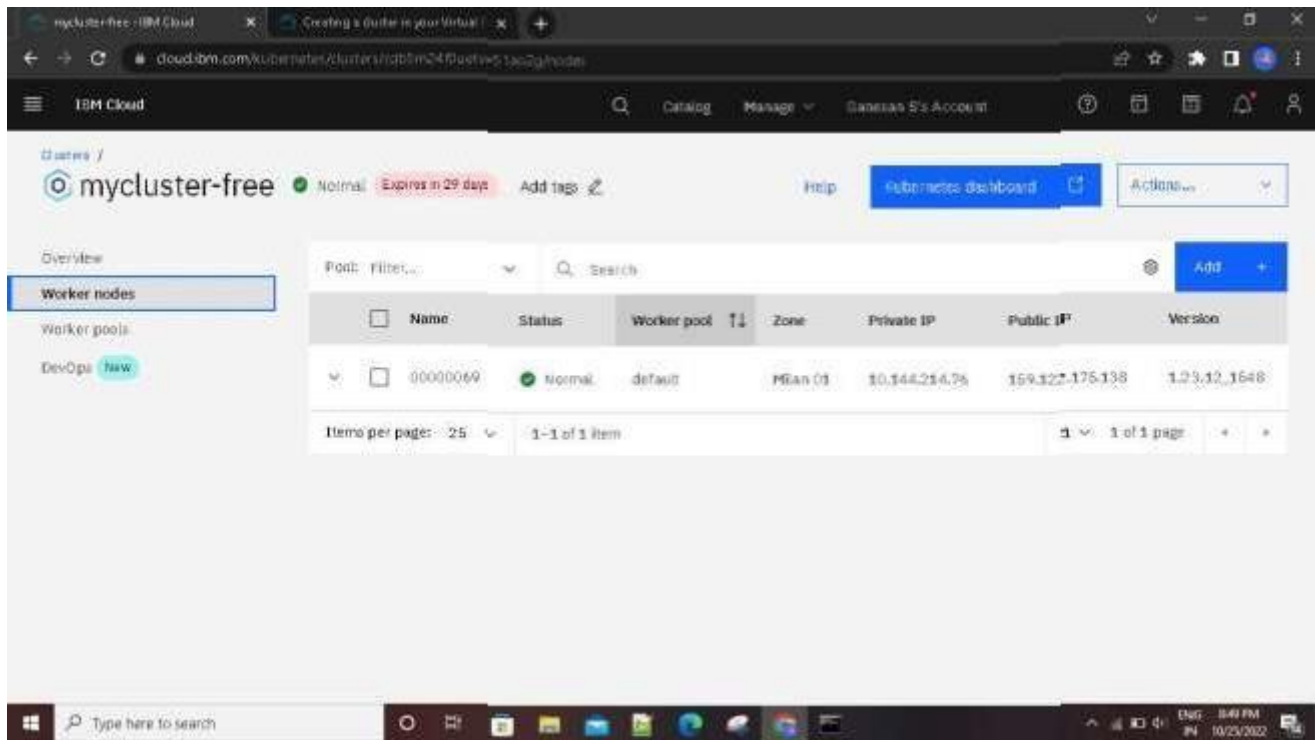
Items per page: 25 1-2 of 2 items 1 1 of 2 page

IBM\_Cloud\_CU\_2.1...exe Show all



**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 noteport**

**1) Creating a kubernetes cluster in ibm cloud**



**2) deploy helloworld image or jobportal image and also expose the same app to run in noteport**

```
C:\Windows\System32\cmd.exe
10/16/2022 12:28 PM 3,721 windows shortcut.txt
08/25/2022 08:40 PM 2,897 YouTube.lnk
24 File(s) 804,677,196 bytes
9 Dir(s) 79,221,886,976 bytes free

C:\Users\gani\Desktop>cd deploy
The system cannot find the path specified.

C:\Users\gani\Desktop>kubectl apply -f kubernetes/depoly.yaml
error: the path "kubernetes/depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f depoly.yaml
error: the path "depoly.yaml" does not exist

C:\Users\gani\Desktop>kubectl apply -f C:\Users\gani\Desktop\deploy.yaml
deployment.apps/flask-app created

C:\Users\gani\Desktop>
```

mycluster-free - IBM Cloud | mycluster-free - Kubernetes Dashb... | flask-app-with-ibm-kubernetes-ox

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdb5m24f0uehvs1ao2g/service/#/pod?namespace=default

kubernetes | default | Search

Workloads > Pods

Workloads | Cron Jobs | Daemon Sets | Deployments | Jobs | **Pods** | Replica Sets | Replication Controllers | Stateful Sets

Service | Ingresses | Services

Config and Storage | Config Maps | Persistent Volume Claims | Secrets | Storage Classes

Usage | Memory Usage

Waiting for more data to display chart...

Waiting for more data to display chart...

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
flask-app-79447b5c8c-4d8ww	gcr.io/google-samples/flask	Show all	10.144.214.76	Running	0	0.000	3.7 MiB	8 minutes ago
flask-app-79447b5c8c-qpmv5	Show all	Show all	10.144.214.76	Running	0	0.000	3.7 MiB	8 minutes ago
flask-app-79447b5c8c-vzwp	Show all	Show all	10.144.214.76	Running	0	0.000	3.7 MiB	8 minutes ago

mycluster-free - IBM Cloud | mycluster-free - Kubernetes Dashb... | 127.0.0.1 | 172.21.159.01

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdb5m24f0uehvs1ao2g/service/#/log/default/flask-app-79447b5c8c-4d8ww/pod?na...

kubernetes | default | Search

Workloads > Pods > flask-app-79447b5c8c-4d8ww > Logs

Jobs | Pods | **Replica Sets** | Replication Controllers | Stateful Sets

Service | Ingresses | Services

Config and Storage | Config Maps | Persistent Volume Claims | Secrets | Storage Classes

Cluster | Cluster Role Bindings | Cluster Roles | Events | Namespaces

Logs from flask-app-cont... in flask-app-7944...

```
Running Flask app 'app'
Running on http://172.21.159.01:5000
Press CTRL+C to quit
Starting with stat
Debugger is active!
Debugger PIN: 316-437-349
```

from Oct.26, 2022 to Oct.26, 2022 UTC

```

C:\Windows\System32\cmd.exe
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
The Service "flask-service" is invalid: metadata.name: Invalid value: "flask-service": a DNS-1035 label must consist of lower case alphanumeric characters or '-', start with an alphabetic character, and end with an alphanumeric character (e.g. "my-name", or "abc-123", regex used for validation is "[a-z]([-a-z0-9]*[a-z0-9])?")
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
Error from server (AlreadyExists): services "flask-service" already exists
C:\Windows\system32>
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl proxy
Starting to serve on 127.0.0.1:8001
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
^C
C:\Windows\system32>kubectl -n kubernetes-dashboard get deploy
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl -n kubernetes-dashboard get pods
No resources found in kubernetes-dashboard namespace.
C:\Windows\system32>kubectl expose deployment flask-app --type=NodePort --name=flask-service
Error from server (AlreadyExists): services "flask-service" already exists
C:\Windows\system32>kubectl get ing
NAME          CLASS  HOSTS      ADDRESS      PORTS      AGE
flask-app-ingress  cnone>  *          80           27%
C:\Windows\system32>kubectl get svc
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP    PORT(S)      AGE

```