

Upload Image To IBM Container

Team ID	PNT2022TMID03890
Project Name	Smart Fashion Recommender Application

CREATING IMAGE IN DOCKER:

```
C:\Users\musammil-pt5773\Desktop\Python>docker build -t flask_ibm .
[+] Building 169.7s (11/11) FINISHED
=> [internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 186B                                              0.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [internal] load metadata for docker.io/library/python:3.10.6                 31.8s
=> [auth] library/python:pull token for registry-1.docker.io                   0.0s
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 0.0s
=> [internal] load build context                                                  0.1s
=> => transferring context: 165.57kB                                             0.1s
=> CACHED [2/5] WORKDIR /app                                                      0.0s
=> [3/5] COPY requirements.txt ./                                                 0.1s
=> [4/5] RUN pip install -r requirements.txt                                     135.0s
=> [5/5] COPY . .                                                                0.1s
=> exporting to image                                                            2.4s
=> => exporting layers                                                            2.3s
=> => writing image sha256:a595cf92272a304b646caa4aff9e0ae08b94b3e5092059d91bce38c2248f161f 0.0s
=> => naming to docker.io/library/flask_ibm                                     0.0s
```

CONTAINERISING THE IMAGE:

```
C:\Users\musammil-pt5773\Desktop\Python>docker run -p 5000:5000 flask_ibm
* Serving Flask app 'Hello'
* Debug mode: on
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
* Restarting with stat
* Debugger is active!
* Debugger PIN: 883-075-625
172.17.0.1 - - [18/Nov/2022 12:23:13] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:13] "GET /static/images/adminad.jfif HTTP/1.1" 304 -
172.17.0.1 - - [18/Nov/2022 12:23:14] "GET /favicon.ico HTTP/1.1" 404 -
172.17.0.1 - - [18/Nov/2022 12:23:15] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:15] "GET /static/images/adminad.jfif HTTP/1.1" 304 -
172.17.0.1 - - [18/Nov/2022 12:23:18] "GET /login HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:18] "GET /static/css/login.css HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:18] "GET /static/images/gradient-cactus.jpg HTTP/1.1" 304 -
172.17.0.1 - - [18/Nov/2022 12:23:27] "POST /check HTTP/1.1" 302 -
172.17.0.1 - - [18/Nov/2022 12:23:28] "GET /admin HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:47] "GET /logout HTTP/1.1" 302 -
172.17.0.1 - - [18/Nov/2022 12:23:47] "GET /login HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:47] "GET /static/css/login.css HTTP/1.1" 304 -
172.17.0.1 - - [18/Nov/2022 12:23:47] "GET /static/images/gradient-cactus.jpg HTTP/1.1" 304 -
172.17.0.1 - - [18/Nov/2022 12:23:57] "POST /check HTTP/1.1" 302 -
172.17.0.1 - - [18/Nov/2022 12:23:57] "GET /home HTTP/1.1" 200 -
172.17.0.1 - - [18/Nov/2022 12:23:57] "GET /static/images/codetree.jpg HTTP/1.1" 200 -
```

SING THE IMAGE:

Containers































[Give feedback](#)

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. [Learn more](#)

☐

Only show running containers

Search

		NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
<input type="checkbox"/>		strange_hoover e59664391861 	docker/getting-started:latest	Exited (255)	80:80 		  
<input type="checkbox"/>		pensive_shockley e98df1336b2f 	flask_ibm:latest	Exited	5000:5000 		  
<input type="checkbox"/>		elated_aryabhata 98f0211cc3ad 	flask_with_ibm_db2:latest	Exited (1)	5001:5001 		  
<input type="checkbox"/>		fervent_mccarthy 4654d8e61ef3 	flask_with_ibm_db2:latest	Exited (1)	5001:5001 		  
<input type="checkbox"/>		interesting_shirley 173ef9a28fed 	hello_world:latest	Exited (137)	5002:5002 		  

IBM CLOUD CR LOGIN:

```
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud login
```

```
API endpoint: https://cloud.ibm.com
```

```
Email> sec19cs069@sairamtap.edu.in
```

```
Password>
```

```
Authenticating...
```

```
Credentials were rejected.
```

```
Code: BXNIM0602E, message: The credentials you entered for the user 'sec19cs069@sairamtap.edu.in' are incorrect.
```

```
Password>
```

```
Authenticating...
```

```
Credentials were rejected.
```

```
Code: BXNIM0602E, message: The credentials you entered for the user 'sec19cs069@sairamtap.edu.in' are incorrect.
```

```
Password>
```

```
Authenticating...
```

```
OK
```

```
Targeted account Mohamed Musammil's Account (f573a30aa84f432a91a05468f825e886)
```

CREATING REPOSITORY IN IBM CLOUD:

Location

Tokyo

Resource group: Filter...

Search



Create



Name

Resource group

Repository count

Image count

Retention policy



flask-with-ibm

Default

1

1

Retain all images



Items per page: 10



1-1 of 1 item

1



1 of 1 page



Location

Tokyo



Search



Create



Name

Image count

Namespace

Last updated



flask_ibm

jp.icr.io/flask-with-ibm/flask_ibm

1

flask-with-ibm

3 hours ago



Items per page:

25



1-1 of 1 item

1



1 of 1 page



```

C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe serviceaccount admin-user
Name:          admin-user
Namespace:     kubernetes-dashboard
Labels:        <none>
Annotations:   <none>
Image pull secrets: <none>
Mountable secrets: <none>
Tokens:        admin-user-token
Events:        <none>

C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe secret admin-user-token
Name:          admin-user-token
Namespace:     kubernetes-dashboard
Labels:        <none>
Annotations:   kubernetes.io/service-account.name: admin-user
                kubernetes.io/service-account.uid: b2e55ca8-9e50-4092-bc93-8a45a5684b05
Type:          kubernetes.io/service-account-token

```

UPLOAD IMAGE TO IBM CONTAINER REGISTRY:

Location: Tokyo

View by: Digest Search [Create](#) [+](#)

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size	Security status
<input type="checkbox"/>	flask-with-ibm/flask_ibm@sha256:b61b3b81dd88...	latest	Docker	3 hours ago	449 MB	26 issues

Items per page: 25 1-1 of 1 item 1 1 of 1 page

PUSHING IMAGE TO IBM CONTAINER REGISTRY:

```
C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe serviceaccount admin-user
```

```
Name:          admin-user
Namespace:     kubernetes-dashboard
Labels:        <none>
Annotations:   <none>
Image pull secrets: <none>
Mountable secrets: <none>
Tokens:        admin-user-token
Events:        <none>
```

```
C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe secret admin-user-token
```

```
Name:          admin-user-token
Namespace:     kubernetes-dashboard
Labels:        <none>
Annotations:   kubernetes.io/service-account.name: admin-user
                kubernetes.io/service-account.uid: b2e55ca8-9e50-4092-bc93-8a45a5684b05
```

```
Type: kubernetes.io/service-account-token
```

```
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud login
```

```
API endpoint: https://cloud.ibm.com
```

```
Email> sec19cs069@sairamtap.edu.in
```

```
Password>
```

```
Authenticating...
```

```
Credentials were rejected.
```

```
Code: BXNIM0602E, message: The credentials you entered for the user 'sec19cs069@sairamtap.edu.in' are incorrect.
```

```
Password>
```

```
Authenticating...
```

```
Credentials were rejected.
```

```
Code: BXNIM0602E, message: The credentials you entered for the user 'sec19cs069@sairamtap.edu.in' are incorrect.
```

```
Password>
```

```
Authenticating...
```

```
OK
```

```
Targeted account Mohamed Musammil's Account (f573a30aa84f432a91a05468f825e886)
```



```
C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe serviceaccount admin-user
Name:                admin-user
Namespace:           kubernetes-dashboard
Labels:              <none>
Annotations:         <none>
Image pull secrets:  <none>
Mountable secrets:   <none>
Tokens:              admin-user-token
Events:              <none>

C:\Users\musammil-pt5773\Desktop\Python>kubectl -n kubernetes-dashboard describe secret admin-user-token
Name:                admin-user-token
Namespace:           kubernetes-dashboard
Labels:              <none>
Annotations:         kubernetes.io/service-account.name: admin-user
                    kubernetes.io/service-account.uid: b2e55ca8-9e50-4092-bc93-8a45a5684b05
Type:                kubernetes.io/service-account-token
```

CREATING AND GENERATING SERVICE ACCOUNT IN KUBERNETES:

```
C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f dashboard-adminuser.yaml
serviceaccount/admin-user unchanged
secret/admin-user-token created
clusterrolebinding.rbac.authorization.k8s.io/admin-user unchanged
```

CREATING CLUSTER IN IBM CLOUD:

The screenshot displays the IBM Cloud console interface for a 'mycluster-free' Kubernetes cluster. The top navigation bar includes the IBM Cloud logo, a search bar, and links to 'Catalog', 'Manage', and the user profile 'Mohamed Musammil's ...'. The cluster name 'mycluster-free' is shown with a green checkmark indicating a 'Normal' status and a red 'Expires in 30 days' warning. A 'Kubernetes dashboard' link is highlighted in the top right.

The left sidebar contains navigation links: 'Overview' (selected), 'Worker nodes', 'Worker pools', and 'DevOps' with a 'New' button.

The main content area features a warning banner: 'Expires in 30 days: Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a [standard cluster](#).' Below this, four status cards are displayed:

- Node status:** 1 of 1, Normal (green checkmark), with a 'Details' link.
- Add-on status:** 0 of 0, Normal (green checkmark), with a 'Details' link.
- Master status:** Normal (green checkmark), with a 'Docs' link.
- Ingress status:** Healthy (green checkmark), with a 'Docs' link.

The 'Details' section provides the following information:

- Cluster ID:** cds72cdf03d7g58o98eg (with a copy icon)
- Version:** 1.24.8_1544
- Infrastructure:** Classic
- Zones:** Milan 01
- Created:** 11/19/2022, 11:31 AM
- Resource group:** Default
- Image security enforcement:** Enable (button)

The 'Node health' section shows '1 total nodes' with a green progress bar. A 'Worker node details' link is available on the right.

```
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.
[+] Building 29.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 186B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/python:3.10.6 28.8s
=> [auth] library/python:pull token for registry-1.docker.io 0.0s
=> [internal] load build context 0.1s
=> => transferring context: 249.13kB 0.1s
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 0.0s
=> CACHED [2/5] WORKDIR /app 0.0s
=> CACHED [3/5] COPY requirements.txt ./ 0.0s
=> CACHED [4/5] RUN pip install -r requirements.txt 0.0s
=> [5/5] COPY . . 0.1s
=> exporting to image 0.1s
=> => exporting layers 0.1s
=> => writing image sha256:5a885c0e2b22205f049798800c35d6ab3958284d5384c2054da825291047fc50 0.0s
=> => naming to docker.io/library/flask_ibm 0.0s
```

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

```
C:\Users\musammil-pt5773\Desktop\Python>docker run -p 5000:5000 flask_ibm
* Serving Flask app 'Hello'
* Debug mode: on
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
* Restarting with stat
* Debugger is active!
* Debugger PIN: 444-602-454
172.17.0.1 - - [19/Nov/2022 09:00:27] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [19/Nov/2022 09:00:27] "GET /static/images/adminad.jfif HTTP/1.1" 200 -
172.17.0.1 - - [19/Nov/2022 09:00:27] "GET /favicon.ico HTTP/1.1" 404 -
```

```
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.
```

OK

```
C:\Users\musammil-pt5773\Desktop\Python>docker tag flask_ibm jp.icr.io/flask-with-ibm/flask_ibm_app
```

```
C:\Users\musammil-pt5773\Desktop\Python>docker push jp.icr.io/flask-with-ibm/flask_ibm_app
Using default tag: latest
```

```
The push refers to repository [jp.icr.io/flask-with-ibm/flask_ibm_app]
```

```
fa633a880ff3: Preparing
```

```
89184a79e390: Preparing
```

```
60f225c40618: Preparing
```

```
3ee2800597ab: Preparing
```

```
bfc1deb8136e: Preparing
```

```
1f123186824c: Waiting
```

```
3d6eb1152931: Waiting
```

```
100796cdf3b1: Waiting
```

```
54acb5a6fa0b: Waiting
```

```
8d51c618126f: Waiting
```

```
9ff6e4d46744: Waiting
```

```
a89d1d47b5a1: Waiting
```

```
655ed1b7a428: Waiting
```

```
denied: You have exceeded your storage quota. Delete one or more images, or review your storage quota and pricing plan. For more information, see https://ibm.biz/BdPdFA.
```

```
C:\Users\musammil-pt5773\Desktop\Python>docker push jp.icr.io/flask-with-ibm/flask_ibm_app
Using default tag: latest
```

```
The push refers to repository [jp.icr.io/flask-with-ibm/flask_ibm_app]
```

```
fa633a880ff3: Pushed
```

```
89184a79e390: Mounted from flask-with-ibm/flask_ibm
```

```
60f225c40618: Mounted from flask-with-ibm/flask_ibm
```

```
3ee2800597ab: Mounted from flask-with-ibm/flask_ibm
```

```
bfc1deb8136e: Mounted from flask-with-ibm/flask_ibm
```

```
1f123186824c: Mounted from flask-with-ibm/flask_ibm
```

```
3d6eb1152931: Mounted from flask-with-ibm/flask_ibm
```

```
100796cdf3b1: Mounted from flask-with-ibm/flask_ibm
```

```
54acb5a6fa0b: Mounted from flask-with-ibm/flask_ibm
```

```
8d51c618126f: Mounted from flask-with-ibm/flask_ibm
```

```
9ff6e4d46744: Mounted from flask-with-ibm/flask_ibm
```

```
a89d1d47b5a1: Mounted from flask-with-ibm/flask_ibm
```

```
655ed1b7a428: Mounted from flask-with-ibm/flask_ibm
```

```
latest: digest: sha256:3c05e72b6f00fc7d462ab6f00105c48c270dec08352e71a07199921550e9e0bb size: 3053
```



```

C:\Users\musammil-pt5773\Desktop\Python>
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud ks cluster config --cluster cds72cdf03d7g58o98eg
OK
The configuration for cds72cdf03d7g58o98eg was downloaded successfully.

Added context for cds72cdf03d7g58o98eg to the current kubeconfig file.
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 synchronizes.

C:\Users\musammil-pt5773\Desktop\Python>ibmcloud ks cluster ls
OK

```

Name	ID	State	Created	Workers	Location	Version	Resource Group Name	Provider
mycluster-free	cds72cdf03d7g58o98eg	normal	3 hours ago	1	ams03	1.24.8_1544	Default	classic

```

C:\Users\musammil-pt5773\Desktop\Python>kubectl config current-context
mycluster-free/cds72cdf03d7g58o98eg

C:\Users\musammil-pt5773\Desktop\Python>kubect apply -f kubernetes/ibm_deployment.yaml
'kubect' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f kubernetes/ibm_deployment.yaml
deployment.apps/flask-ibm created

C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f kubernetes/flask-services.yaml
service/flask-ibmapp-service created

C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f kubernetes/flask-ingres.yaml
error: the path "kubernetes/flask-ingres.yaml" does not exist

C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f kubernetes/flask-ingress.yaml
ingress.networking.k8s.io/flask-ibmapp-ingress created

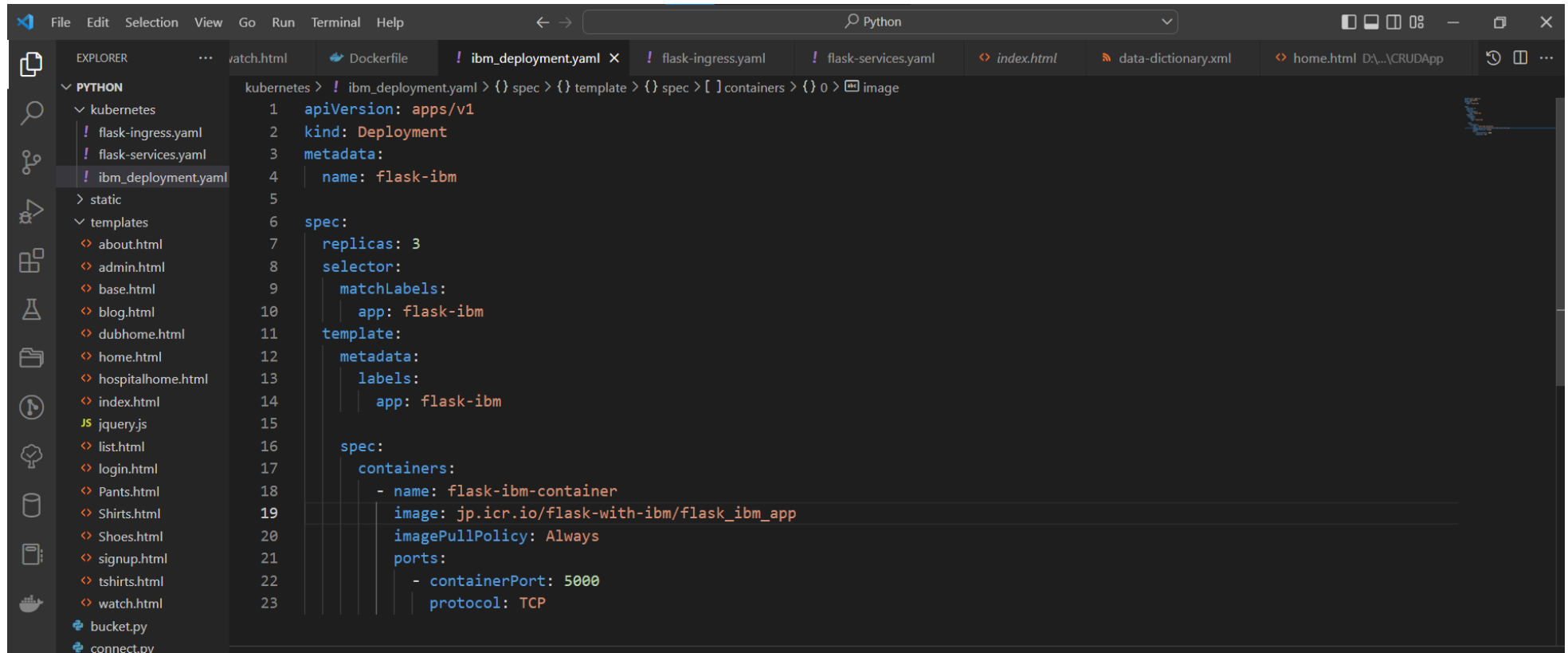
C:\Users\musammil-pt5773\Desktop\Python>ibmcloud login
API endpoint: https://cloud.ibm.com
Region: jp-tok

Email> sec19cs069@sairamtap.edu.in

Password>
Authenticating...
Credentials were rejected.
Code: BXNIM0602E, message: The credentials you entered for the user 'sec19cs069@sairamtap.edu.in' are incorrect.

Password>
Authenticating...
OK

```

DEPLOY IN KUBERNETES CLUSTER

```
Password>
Authenticating...
OK

Targeted account Mohamed Musammil's Account (f573a30aa84f432a91a05468f825e886)

API endpoint:      https://cloud.ibm.com
Region:            jp-tok
User:              sec19cs069@sairamtap.edu.in
Account:           Mohamed Musammil's Account (f573a30aa84f432a91a05468f825e886)
Resource group:    No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\musammil-pt5773\Desktop\Python>kubectl apply -f kubernetes/ibm_deployment.yaml
deployment.apps/flask-ibm unchanged

C:\Users\musammil-pt5773\Desktop\Python>kubectl get svc
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP  PORT(S)    AGE
flask-app-service   ClusterIP   172.21.127.57 <none>       5005/TCP    37m
flask-ibmapp-service ClusterIP   172.21.59.183 <none>       5000/TCP    7m18s
kubernetes          ClusterIP   172.21.0.1     <none>       443/TCP     3h7m

C:\Users\musammil-pt5773\Desktop\Python>kubectl get ing
NAME                CLASS  HOSTS  ADDRESS  PORTS  AGE
flask-app-ingress   <none> *      80      37m
flask-ibmapp-ingress <none> *      80      7m16s

C:\Users\musammil-pt5773\Desktop\Python>kubectl get nodes -o wide
NAME                STATUS  ROLES  AGE  VERSION  INTERNAL-IP  EXTERNAL-IP  OS-IMAGE             KERNEL-VERSION  CONTAINER-RUNTIME
10.144.183.253      Ready   <none>  179m v1.24.7+IKS  10.144.183.253  169.51.194.250  Ubuntu 18.04.6 LTS   4.15.0-194-generic  containerd://1.6.8

C:\Users\musammil-pt5773\Desktop\Python>
```

IBM Cloud

Container Registry

Quick start

Namespaces1

Repositories2

Images2

Trash1

Settings

Search resources and products...



CatalogManageMohamed Musammil's ...

Repositories

LocationTokyo

Search

Create

	Name	Image count	Namespace	Last updated
▼	 flask_ibm_app jp.icr.io/flask-with-ibm/flask_ibm_app	1	flask-with-ibm	15 minutes ago
▼	 flask-testing jp.icr.io/flask-with-ibm/flask-testing	1	flask-with-ibm	1 hour ago

Items per page: 251-2 of 2 items11 of 1 page

Type here to search

14:54

Workloads

Workloads N

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses N

Ingress Classes

Services N

Config and Storage

Config Maps N

Persistent Volume Claims N

Secrets N

Storage Classes

Workload Status



Running: 2

Deployments



Running: 13

Pods



Running: 2

Replica Sets

Deployments

Name	Images	Labels	Pods	Created ↑
● flask-ibm	Show all	-	3 / 3	15 minutes ago
● flask-app	Show all	-	10 / 10	45 minutes ago

Workloads N

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses N

Ingress Classes

Services N

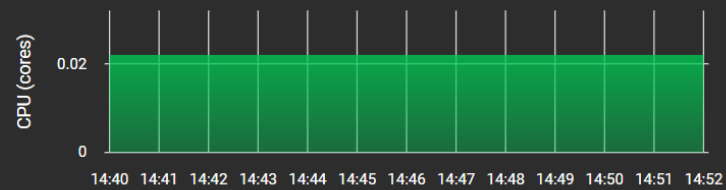
Config and Storage

Config Maps N

Persistent Volume Claims N

Secrets N

CPU Usage



Memory Usage



Deployments

Name	Images	Labels	Pods	Created ↑
flask-ibm	Show all	-	3 / 3	16 minutes ago
flask-app	Show all	-	10 / 10	46 minutes ago