

ASSIGNMENT-4

Team ID:PNT2022TMID47037

Project Name: NEWS TRACKER APPLICATION

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

The image consists of two screenshots of the Docker Playground interface, showing the process of pulling and running a Docker image.

Top Screenshot:

- The interface shows a session titled "cdpqp4u3_cdpqp8f91rrg00bv64o0".
- The IP address is 192.168.0.28. The OPEN PORT is 5000 and 80.
- Memory usage is 29.17% (1.14GiB / 3.906GiB). CPU usage is 0.88%.
- The SSH command is `ssh ip172-18-0-4-cdpqp4u3tccg009q2dgg@direct.labs.play-`.
- The terminal output shows the command `$ docker images` and the output of `$ docker pull dharun04032002/flask_with_form_and_docker`, which is pulling the latest image from the repository.

Bottom Screenshot:

- The interface shows the same session titled "cdpqp4u3_cdpqp8f91rrg00bv64o0".
- The IP address is 192.168.0.28. The OPEN PORT is 5000 and 80.
- Memory usage is 29.20% (1.141GiB / 3.906GiB). CPU usage is 1.00%.
- The SSH command is `ssh ip172-18-0-4-cdpqp4u3tccg009q2dgg@direct.labs.play-`.
- The terminal output shows the command `$ docker run -d -p 80:80 dharun04032002/flask_with_form_and_docker` and the output of `$ docker run -d -p 5000:5000 dharun04032002/flask_with_form_and_docker`, which are running the container in detached mode.

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

The screenshot displays the Docker Hub repository page for `dharun04032002/jobportal` and the Docker Desktop application interface.

Docker Hub Repository Page:

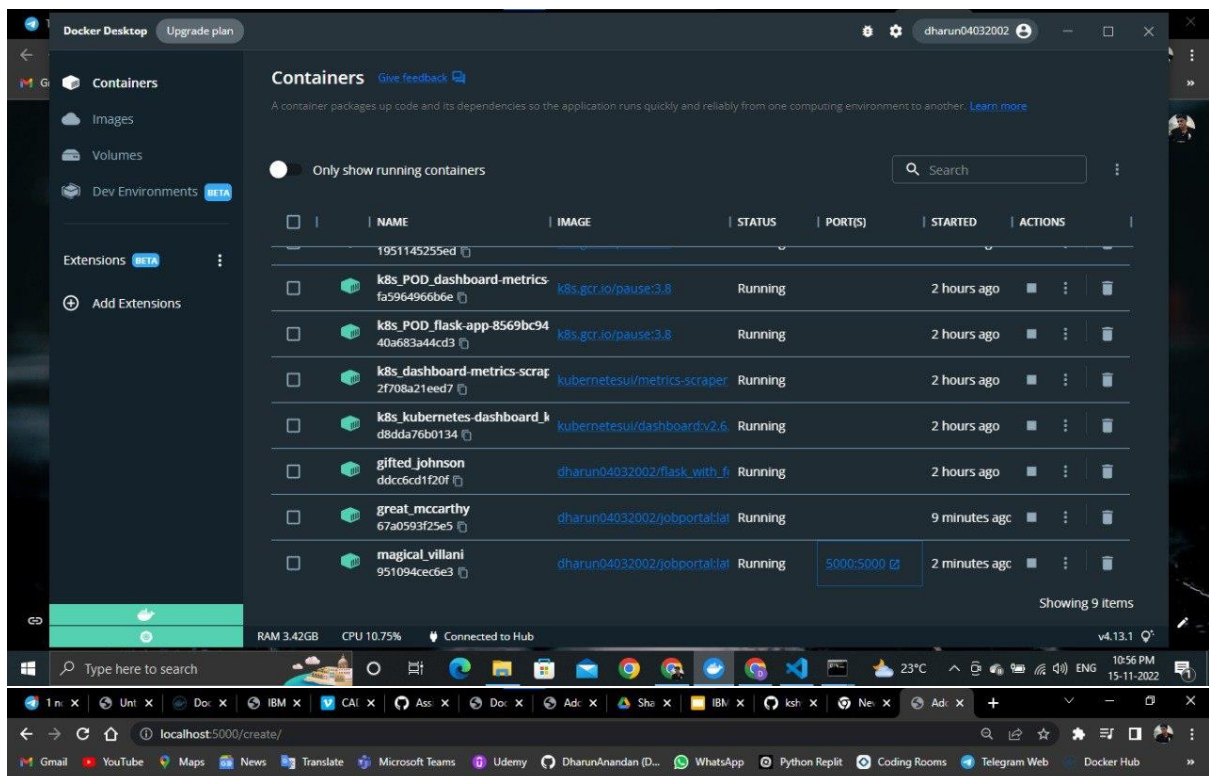
- Repository name: `dharun04032002/jobportal`
- By: `dharun04032002` • Updated 5 minutes ago
- Image type: Image
- Overview tab selected
- Tags: No overview available (This repository doesn't have an overview)
- Docker Pull Command: `docker pull dharun04032002/jobportal`

Docker Desktop Interface:

- Left sidebar: Containers, Images, Volumes, Dev Environments (BETA), Extensions (BETA), Add Extensions
- Main panel: Images on disk (Last refresh: 9 days ago, 25 images, 1.96 GB total size, 1.22 GB / 1.96 GB in use)
- Images table:

| NAME | Tags | Image ID | Created | Size |
|--------------------------|--------|--------------|-----------------|-----------|
| agileek/cpuset-test | latest | 51474ad5c0b3 | over 1 year ago | 1.45 MB |
| alpine/git | latest | 42a1cda0ba24 | 27 days ago | 43.61 MB |
| dharun04032002/flask... | latest | 9281a60227c7 | 9 days ago | 932.79 MB |
| dharun04032002/getti... | latest | cb90f98fd791 | 7 months ago | 28.78 MB |
| dharun04032002/jobp... | latest | f3e14a4d84d2 | 7 minutes ago | 932.79 MB |
| dharun04032002/jobportal | v2.0 | 99f89471f470 | over 1 year ago | 41.85 MB |
| docker/desktop-vpnkit... | v2.0 | 8c2c38aa676e | over 1 year ago | 21.03 MB |
| docker/getting-started | latest | cb90f98fd791 | 7 months ago | 28.78 MB |
| docker101tutorial | latest | b4e890471319 | 10 days ago | 28.94 MB |
| flask_with_form_and_d... | latest | 9281a60227c7 | 9 days ago | 932.79 MB |

RAM 3.43GB CPU 5.62% Connected to Hub v4.13.1



JOBPORTAL CREATE ABOUT

Add a New Message

Name

List out Job Role Preference
Message content



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

```
Windows PowerShell
PS C:\Users\Dharun> ibmcloud cr namespace-add jobportal
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'jobportal' in resource group 'Default' for account Dharun A's Account in registry icr.io...
FAILED
The requested namespace is already in use in registry 'icr.io'.
Choose a different namespace.

PS C:\Users\Dharun> ibmcloud cr namespace-add jobportal13
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'jobportal13' in resource group 'Default' for account Dharun A's Account in registry icr.io...
Successfully added namespace 'jobportal13'

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

PS C:\Users\Dharun> docker pull jobportal
Using default tag: latest
Error response from daemon: pull access denied for jobportal, repository does not exist or may require 'docker login': denied: requested access to the resource is denied
PS C:\Users\Dharun> docker pull dharun04032002/jobportal
Using default tag: latest
latest: Pulling from dharun04032002/jobportal
Digest: sha256:c59075df8714db1f12a02a74591c9177a50c1875f1ab53ef299eb94c4b77c
Status: Image is up to date for dharun04032002/jobportal:latest
docker.io/dharun04032002/jobportal:latest
PS C:\Users\Dharun> docker tag dharun04032002/jobportal icr.io/jobportal13/jobportal:jobportal
PS C:\Users\Dharun> docker tag push icr.io/jobportal13/jobportal:jobportal
Error response from daemon: No such image: push:latest
PS C:\Users\Dharun> docker push icr.io/jobportal13/jobportal:jobportal
The push refers to repository [icr.io/jobportal13/jobportal]
b1002f11b3fc: Pushed
e2653b69d0d7: Pushed
a26ff885ac37: Pushed
ad8c1a35802: Pushed
cf399be408ea: Pushed
f936971cc099: Pushed
d172a9e6f9e6: Pushed
0c7daf9a72c8: Pushed
75ba02937496: Pushed
288cf3a46e32: Pushed
186da837555d: Pushed
955c9335e041: Pushed
8e079fee2186: Pushed

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/powershell

PS C:\Users\Dharun> ibmcloud plugin install container-registry -r 'IBM Cloud'
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Plug-in 'container-registry 1.0.2' was already installed. Do you want to update it with 'container-registry[cr] 1.0.2' or not? [y/N] > y
Attempting to download the binary...
11.90 MiB / 11.90 MiB [=====] 100.00% 6s
12476416 bytes downloaded
Installing binary...

Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Dharun\bluemix\plugins\container-registry. Use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe plugin show container-registry' to show its details.
PS C:\Users\Dharun> ibmcloud cr region-set global
The region is set to 'global', the registry is 'icr.io'.

PS C:\Users\Dharun> ibmcloud cr namespace-add dharun04032002
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'dharun04032002' in resource group 'Default' for account Dharun A's Account in registry icr.io...
Successfully added namespace 'dharun04032002'

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

PS C:\Users\Dharun> docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
PS C:\Users\Dharun> docker tag hello-world icr.io/dharun04032002/helloworld:hello-world
PS C:\Users\Dharun> docker push icr.io/dharun04032002/helloworld:hello-world
The push refers to repository [icr.io/dharun04032002/helloworld]
e07ee1baac5f: Pushed
hello-world: digest: sha256:f54a58b1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
PS C:\Users\Dharun> ibmcloud cr image-list
Listing images...

Repository      Tag      Digest      Namespace      Created      Size      Security status
```



```
Windows PowerShell
PS C:\Users\Dharun> ibmcloud cr login
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.

PS C:\Users\Dharun> docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fcccceec2398ec8a5759259f94d99878f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
PS C:\Users\Dharun> docker tag hello-world icr.io/<my_namespace>/<my_repository>/<my_tag>
Error parsing reference: "icr.io/<my_namespace>/<my_repository>/<my_tag>" is not a valid repository/tag: invalid reference format
PS C:\Users\Dharun> docker tag hello-world icr.io/dharun04032002/helloworld:helloworld
PS C:\Users\Dharun> docker push icr.io/dharun04032002/helloworld:helloworld
The push refers to repository [icr.io/dharun04032002/helloworld]
e07ee1baac5f: Pushed
helloworld: digest: sha256:f54a58bclaac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
PS C:\Users\Dharun> ibmcloud cr image-list
Listing images...

Repository          Tag          Digest          Namespace          Created          Size          Security status
icr.io/dharun04032002/helloworld  helloworld    f54a58bclaac    dharun04032002    1 year ago      2.5 kB      -

PS C:\Users\Dharun> ibmcloud cr namespace-add jobportal
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'jobportal' in resource group 'Default' for account Dharun A's Account in registry icr.io...
FAILED
The requested namespace is already in use in registry 'icr.io'.
Choose a different namespace.

PS C:\Users\Dharun> ibmcloud cr namespace-add jobportal3
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.
Adding namespace 'jobportal3' in resource group 'Default' for account Dharun A's Account in registry icr.io...
Successfully added namespace 'jobportal3'

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

PS C:\Users\Dharun> docker pull jobportal
Using default tag: latest
Error response from daemon: pull access denied for jobportal, repository does not exist or may require 'docker login': denied: requested access to the resource is denied
PS C:\Users\Dharun> docker pull dharun04032002/jobportal
Using default tag: latest
latest: Pulling from dharun04032002/jobportal
Digest: sha256:c59675dff8714dbb1f12a02a745931c9177a50c1875f1ab53ef299eb94c4b77c
Status: Image is up to date for dharun04032002/jobportal:latest
docker.io/dharun04032002/jobportal:latest
PS C:\Users\Dharun> docker tag dharun04032002/jobportal icr.io/jobportal3/jobportal:jobportal
PS C:\Users\Dharun> docker tag push icr.io/jobportal3/jobportal:jobportal
Error response from daemon: No such image: push:latest
PS C:\Users\Dharun> docker push icr.io/jobportal3/jobportal:jobportal
The push refers to repository [icr.io/jobportal3/jobportal]
b1002f11b3fc: Pushed
e2a55b69dcb7: Pushed
a26ff885ac37: Pushed
4d0c1a35802: Pushed
cf399be408ea: Pushed
793b971ccb99: Pushed
d172a9e6f9e6: Pushed
6c7d9f971c8: Pushed
75ba02937496: Pushed
288cf3a46e32: Pushed
186da837555d: Pushed
958c9338e041: Pushed
8e079fe02186: Pushed
jobportal: digest: sha256:c59675dff8714dbb1f12a02a745931c9177a50c1875f1ab53ef299eb94c4b77c size: 3051
PS C:\Users\Dharun> ibmcloud cr image-list
Listing images...

Repository          Tag          Digest          Namespace          Created          Size          Security status
icr.io/dharun04032002/helloworld  helloworld    f54a58bclaac    dharun04032002    1 year ago      2.5 kB      -
icr.io/jobportal3/jobportal        jobportal      c59675dff871    jobportal3         16 hours ago    356 MB      -

PS C:\Users\Dharun>
```

Docker Hub

IBM Cloud Container Registry - h...

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IBM Cloud

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Manage

Dharun A's Account

Container Registry

Quick start

Namespaces2

Repositories2

Images2

Trash0

Settings

Namespaces

Location

Global

Resource group: Filter... Search

Create

| | Name | Resource group | Repository count | Image count | Retention policy |
|---|----------------|----------------|------------------|-------------|-------------------|
| ▼ | jobportal3 | Default | 1 | 1 | Retain all images |
| ▼ | dharun04032002 | Default | 1 | 1 | Retain all images |

Items per page: 251-2 of 2 items1 of 1 page

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Docker Hub

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Container Registry

Quick start

Namespaces2

Repositories2

Images2

Trash0

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Namespaces

Location

Global

Resource group: Filter... Search

Create

| | Name | Resource group | Repository count | Image count | Retention policy |
|---|-----------------------------|----------------|------------------|-------------|-------------------|
| ⌕ | jobportal3 | Default | 1 | 1 | Retain all images |
| | Repository | | Image count | | Last updated |
| | icr.io/jobportal3/jobportal | | 1 | | 1 day ago |
| ▼ | dharun04032002 | Default | 1 | 1 | Retain all images |

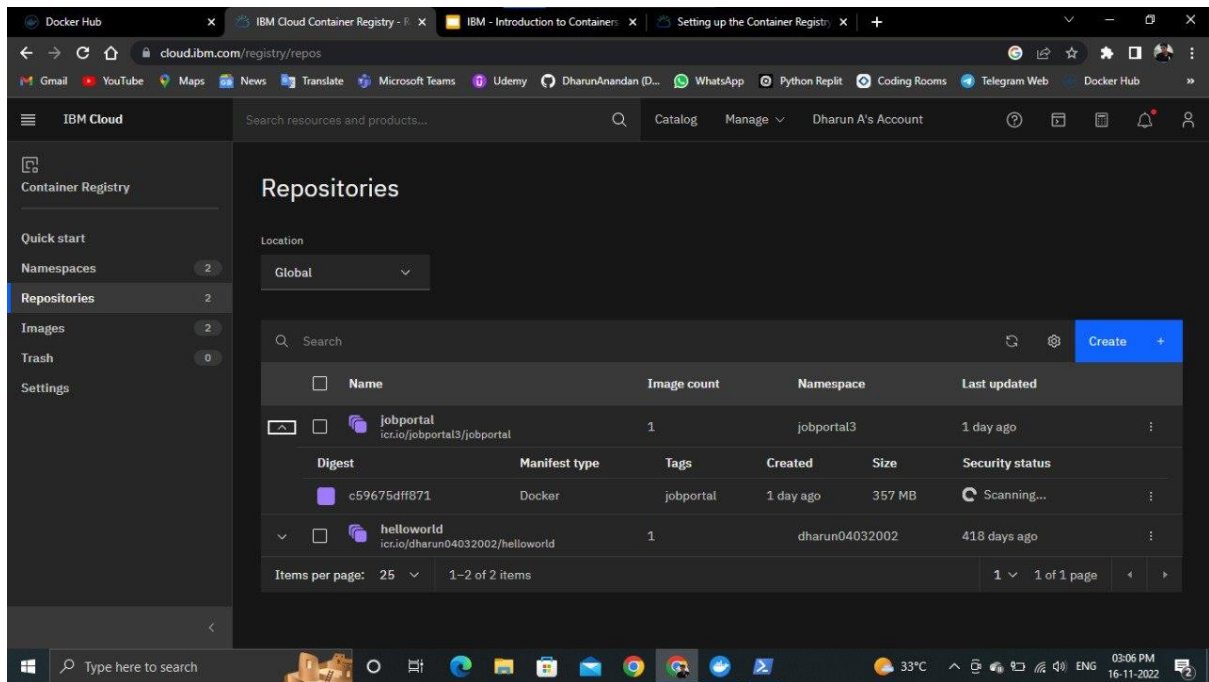
Items per page: 251-2 of 2 items1 of 1 page

Type here to search

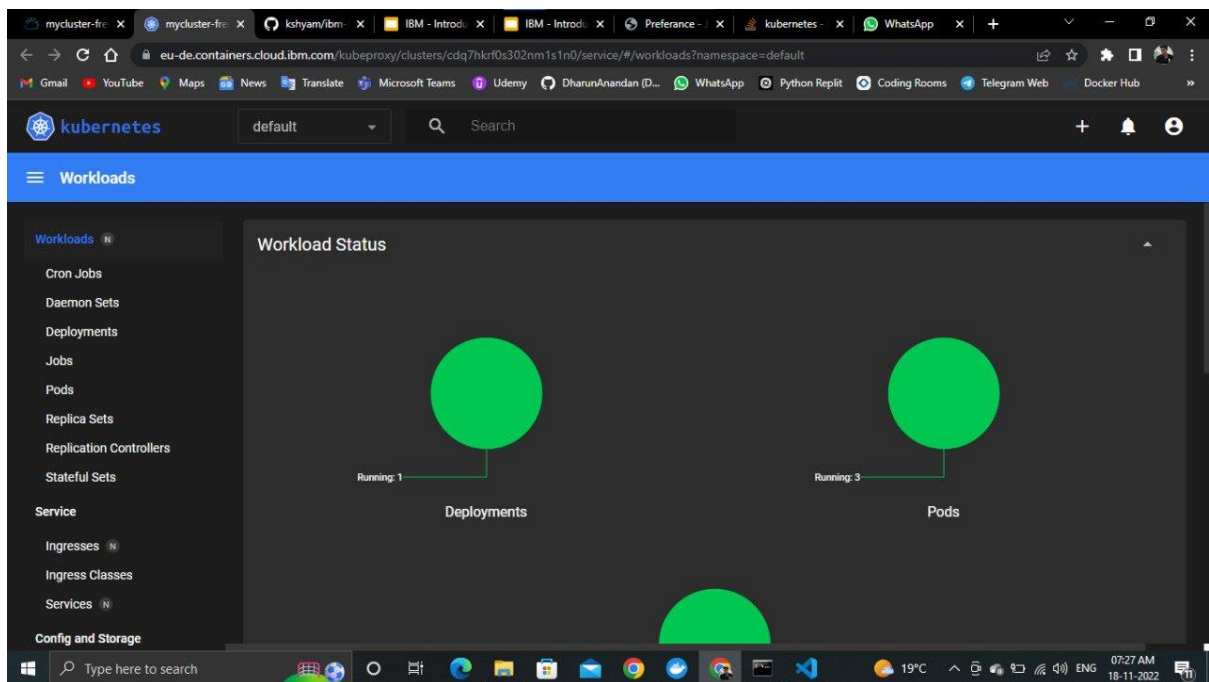
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4. Create a Kubernetes cluster in IBM cloud and deploy helloworld image or jobportal image and also expose the same app to run in nodeport.



mycluster-fre

mycluster-fre

kshyam/ibm

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IBM - Introdu

Preference -

kubernetes -

WhatsApp

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18-11-2022

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdq7hkrf0s302nm1s1n0/service/#/workloads?namespace=default

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kubernetes

default

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Workloads

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Replica Sets

Deployments

Pods

| Name | Images | Labels | Pods | Created ↑ |
|-----------|----------|--------|-------|--------------|
| flask-app | Show all | - | 3 / 3 | a minute ago |

| Name | Images | Labels | Node | Status | Restarts | CPU Usage (cores) | Memory Usage (bytes) | Created |
|----------------------------|----------|----------|----------------|---------|----------|-------------------|----------------------|--------------|
| flask-app-5849d57747-h74h6 | Show all | Show all | 10.144.217.184 | Running | 0 | - | - | a minute ago |
| flask-app-5849d57747-p9zm2 | Show all | Show all | 10.144.217.184 | Running | 0 | - | - | a minute ago |
| flask-app-5849d57747-zm8p | Show all | Show all | 10.144.217.184 | Running | 0 | - | - | a minute ago |

| Name | Images | Labels | Pods | Created ↑ |
|----------------------|----------|----------|-------|--------------|
| flask-app-5849d57747 | Show all | Show all | 3 / 3 | a minute ago |

mycluster-fre x mycluster-fre x kshyam/ibm x IBM - Introdu x IBM - Introdu x Preference - x kubernetes - x WhatsApp x +

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdq7hkrf0s302nm1s1n0/service/#/service?namespace=default

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kubernetes

default

Search

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Service > Services

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Cluster

Services

| Name | Labels | Type | Cluster IP | Internal Endpoints | External Endpoints | Created |
|-------------------|----------|-----------|--------------|---|--------------------|--------------|
| flask-app-service | - | ClusterIP | 172.21.40.99 | flask-app-service:5000 TCP flask-app-service:0 TCP | - | a minute ago |
| kubernetes | Show all | ClusterIP | 172.21.0.1 | kubernetes:443 TCP kubernetes:0 TCP | - | a day ago |

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Service > Services

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Cluster

Services

| Name | Labels | Type | Cluster IP | Internal Endpoints | External Endpoints | Created |
|-------------------|----------|-----------|--------------|---|--------------------|--------------|
| flask-app-service | - | ClusterIP | 172.21.40.99 | flask-app-service:5000 TCP flask-app-service:0 TCP | - | a minute ago |
| kubernetes | Show all | ClusterIP | 172.21.0.1 | kubernetes:443 TCP kubernetes:0 TCP | - | a day ago |

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eu-de.containers.cloud.ibm.com/kubepoxy/clusters/cdq7hkrf0s302nm1s1n0/service/#/ingress?namespace=default

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kubernetes default Search

Service > Ingresses

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Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Storage Classes

Cluster

Cluster Data Binding

| Name | Labels | Endpoints | Hosts | Created |
|-------------------|--------|-----------|-------|--------------|
| flask-app-ingress | - | - | - | a minute ago |

API endpoint: https://cloud.ibm.com
Region: eu-de
User: dharunanandan@gmail.com
Account: Dharun A's Account (00dbee53ea47423581171e276e910b8a)
Resource group: Default
CF API endpoint:
Org:
Space:

D:\IBM\jobportal\kubernetes>ibmcloud ks cluster config --cluster cdq7hkrf0s302nm1s1n0
OK
The configuration for cdq7hkrf0s302nm1s1n0 was downloaded successfully.
Added context for cdq7hkrf0s302nm1s1n0 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.

D:\IBM\jobportal\kubernetes>kubectl config current-context
mycluster-free/cdq7hkrf0s302nm1s1n0

D:\IBM\jobportal\kubernetes>kubectl apply -f ibm_deployment.yaml
deployment.apps/flask-app created

D:\IBM\jobportal\kubernetes>kubectl apply -f flask_service.yaml
service/flask-app-service created

D:\IBM\jobportal\kubernetes>kubectl apply -f flask_ingress.yaml
ingress.networking.k8s.io/flask-app-ingress created

D:\IBM\jobportal\kubernetes>kubectl get ing

| NAME | CLASS | HOSTS | ADDRESS | PORTS | AGE |
|-------------------|--------|-------|---------|-------|-----|
| flask-app-ingress | <none> | * | | 80 | 12s |

D:\IBM\jobportal\kubernetes>kubectl get svc

| NAME | TYPE | CLUSTER-IP | EXTERNAL-IP | PORT(S) | AGE |
|-------------------|-----------|--------------|-------------|----------|-----|
| flask-app-service | ClusterIP | 172.21.40.99 | <none> | 5000/TCP | 38s |
| kubernetes | ClusterIP | 172.21.0.1 | <none> | 443/TCP | 44h |

D:\IBM\jobportal\kubernetes>kubectl get nodes -o wide

| NAME | STATUS | ROLES | AGE | VERSION | INTERNAL-IP | EXTERNAL-IP | OS-IMAGE | KERNEL-VERSION | CONTAINER-RUNTIME |
|----------------|--------|--------|-----|-------------|----------------|-----------------|--------------------|--------------------|--------------------|
| 10.144.217.104 | Ready | <none> | 43h | v1.24.7+IKS | 10.144.217.104 | 159.122.179.128 | Ubuntu 18.04.6 LTS | 4.15.0-194-generic | containerd://1.6.8 |

D:\IBM\jobportal\kubernetes>

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Type here to search

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18-11-2022

IBM - Introduction to Kubernetes

```
D:\IBM\jobportal\kubernetes>kubectl expose deployment jobportal --type=NodePort --name=flask-app-service
Error from server (NotFound): deployments.apps "jobportal" not found

D:\IBM\jobportal\kubernetes>kubectl expose deployment icr.io/jobportal3/jobportal --type=NodePort --name=flask-app-service
Error: there is no need to specify a resource type as a separate argument when passing arguments in resource/name form (e.g. 'kubectl get resource/<resource_name>' instead of 'kubectl get resource resource/<resource_name>')

D:\IBM\jobportal\kubernetes>kubectl expose deployment flask-app --type=NodePort --name=flask-app-service/flask-app
service/flask-app exposed

D:\IBM\jobportal\kubernetes>kubectl expose deployment jobportal --type=NodePort --name=flask-app-service
Error from server (NotFound): deployments.apps "jobportal" not found

D:\IBM\jobportal\kubernetes>kubectl expose deployment jobportal3 --type=NodePort --name=flask-app-service
Error from server (NotFound): deployments.apps "jobportal3" not found

D:\IBM\jobportal\kubernetes>kubectl expose deployment flaskapp --type=NodePort --name=flask-app-service
Error from server (NotFound): deployments.apps "flaskapp" not found

D:\IBM\jobportal\kubernetes>kubectl expose deployment flask-app --type=NodePort --name=flask-app-service
Error from server (AlreadyExists): services "flask-app-service" already exists

D:\IBM\jobportal\kubernetes>kubectl get svc
NAME                TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
flask-app            NodePort    172.21.216.99   <none>        5000:30177/TCP   2m6s
flask-app-service    ClusterIP   172.21.40.99    <none>        5000/TCP         27m
kubernetes            ClusterIP   172.21.0.1      <none>        443/TCP         44h
```

19°C 07:52 AM 18-11-2022

JOBPORTAL CREATE ABOUT

Entries

Preference

Message One

Message One Content

Message Two

Message Two Content

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Run the jobportal at the URL:159.122.179.128.30177