## Assignment - 4

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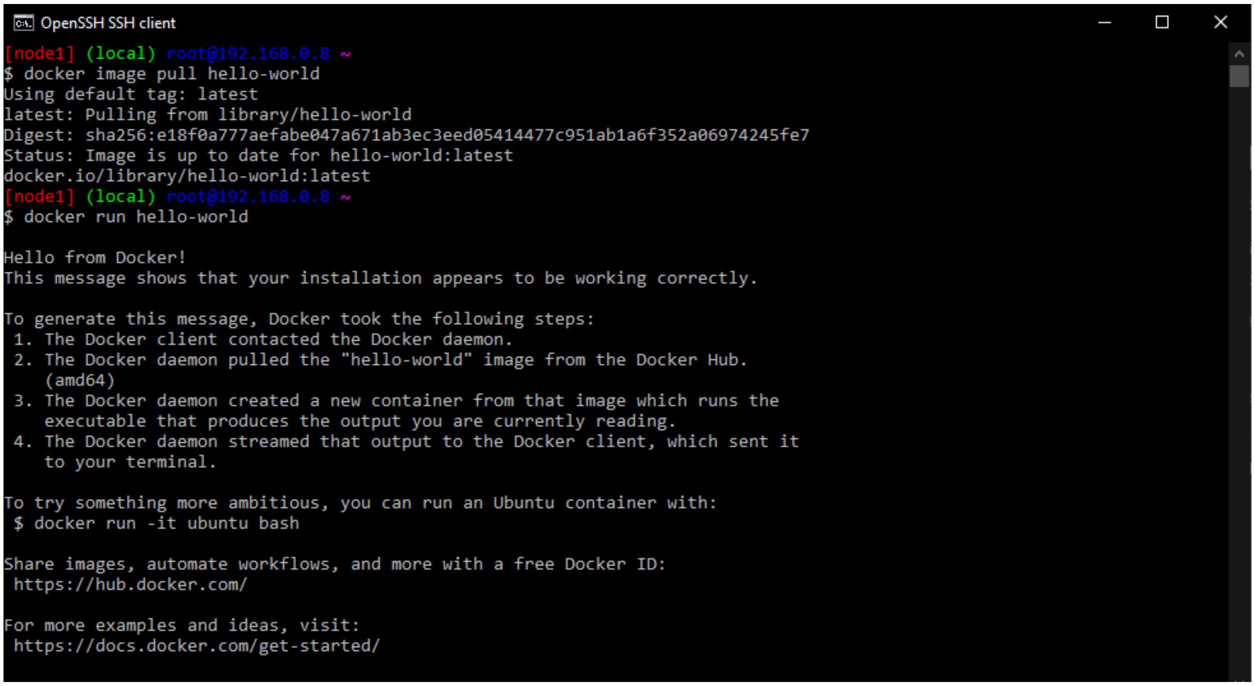
|---|---|
| Date | 27 October 2022 |
| Student Name | Sivaraman MM |
| Student Roll Number | 917719C099 |
| Maximum Marks | 2 Marks |

**Tasks:**

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



```
[node1] (local) root@192.168.0.8 ~
$ docker image pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:e18f0a777aefabe047a671ab3ec3eed05414477c951ab1a6f352a06974245fe7
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
[node1] (local) root@192.168.0.8 ~
$ docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/
```

Pull image from Docker Hub and run it

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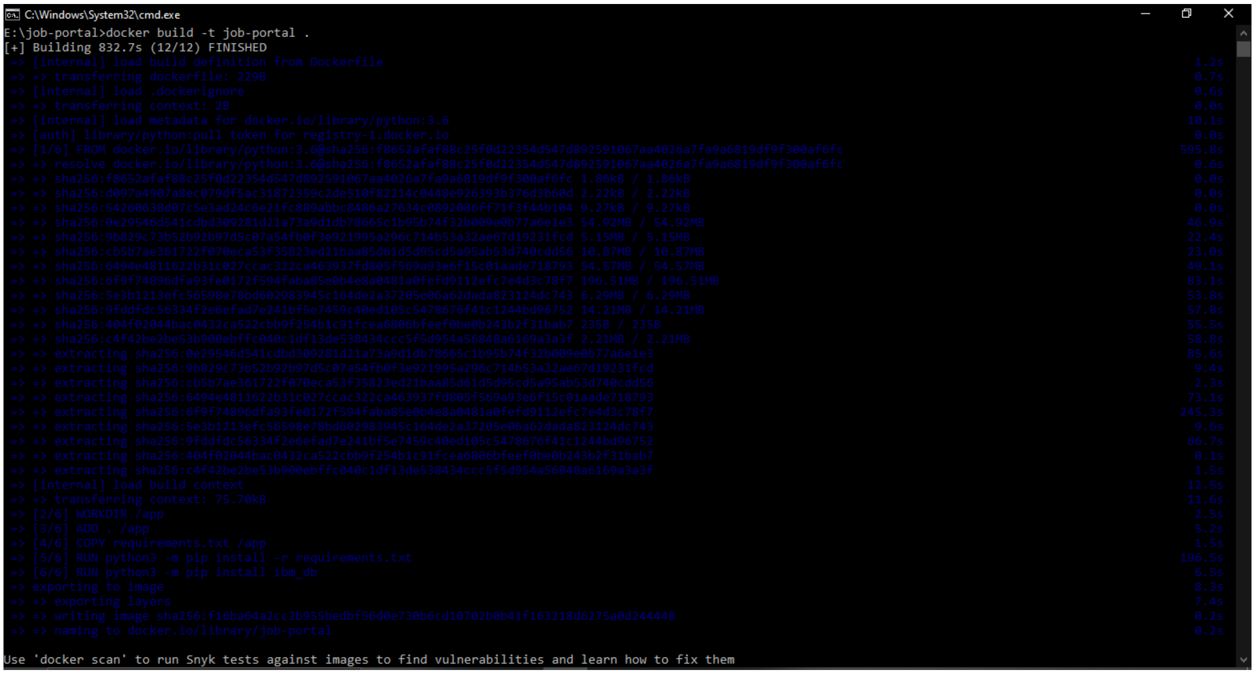
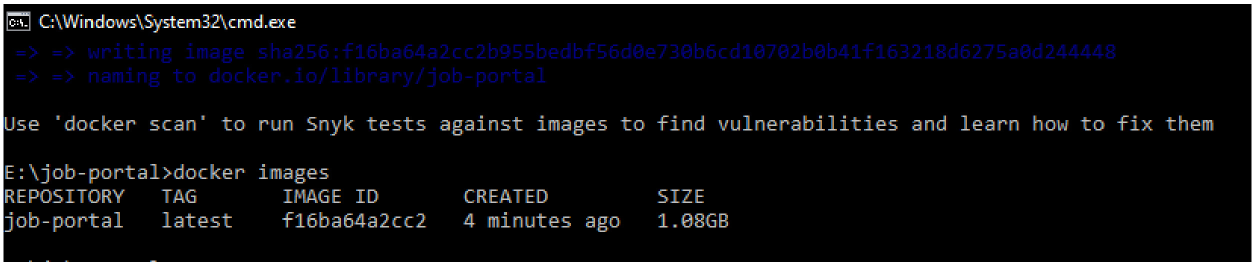
## 2. Create a docker file for the jobportal application and deploy it in Docker desktop application.



```
E:\job-portal>docker build -t job-portal .
[+] Building 832.7s (12/12) FINISHED
 => [internal] load build definition from Dockerfile                                                                           1.2s
 => => transferring dockerfile: 229B                                                                                           0.7s
 => [internal] load .dockerignore                                                                                              0.6s
 => => transferring context: 2B                                                                                                0.0s
 => [internal] load metadata for docker.io/library/python:3.6                                                                 10.1s
 => [auth] library/python:pull token for registry-1.docker.io                                                                  0.0s
 => [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc          595.8s
 => => resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc            0.6s
 => => sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc 1.86kB / 1.86kB                                 0.0s
 => => sha256:d097a4907a8ec079df5ac31872359c2de510f82214c0448e926393b376d3b60d 2.22kB / 2.22kB                                 0.0s
 => => sha256:54260638d07c5e3ad24c6e21fc889abbc8486a27634c0892086ff71f3f44b104 9.27kB / 9.27kB                                 0.0s
 => => sha256:0e29546d541cdbd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 54.92MB / 54.92MB                              46.9s
 => => sha256:9b829c73b52b92b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd 5.15MB / 5.15MB                                22.4s
 => => sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB                              23.0s
 => => sha256:6494e4811622b31c027ccac322ca463937fd805f569a93e6f15c01aade718793 54.57MB / 54.57MB                              49.1s
 => => sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fefd9112efc7e4d3c78f7 196.51MB / 196.51MB                            83.1s
 => => sha256:5e3b1213efc56598e78bd602983945c164de2a37205e06a62dada823124dc743 6.29MB / 6.29MB                                53.8s
 => => sha256:9fddfdc56334f2e6efad7e241bf5e7459c40ed105c5478676f41c1244bd96752 14.21MB / 14.21MB                              57.8s
 => => sha256:404f02044bac0432ca522cbb9f254b1c91fcea6806bfeef0be0b243b2f31bab7 235B / 235B                                    55.5s
 => => sha256:c4f42be2be53b900ebffc040c1df13de538434ccc5f5d954a56848a6169a3a3f 2.21MB / 2.21MB                                58.8s
 => => extracting sha256:0e29546d541cdbd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3                                     85.6s
 => => extracting sha256:9b829c73b52b92b97d5c07a54fb0f3e921995a296c714b53a32ae67d19231fcd                                      9.4s
 => => extracting sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56                                      2.3s
 => => extracting sha256:6494e4811622b31c027ccac322ca463937fd805f569a93e6f15c01aade718793                                     73.1s
 => => extracting sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fefd9112efc7e4d3c78f7                                    245.3s
 => => extracting sha256:5e3b1213efc56598e78bd602983945c164de2a37205e06a62dada823124dc743                                      9.6s
 => => extracting sha256:9fddfdc56334f2e6efad7e241bf5e7459c40ed105c5478676f41c1244bd96752                                     66.7s
 => => extracting sha256:404f02044bac0432ca522cbb9f254b1c91fcea6806bfeef0be0b243b2f31bab7                                      0.1s
 => => extracting sha256:c4f42be2be53b900ebffc040c1df13de538434ccc5f5d954a56848a6169a3a3f                                      1.5s
 => [internal] load build context                                                                                             12.5s
 => => transferring context: 75.70kB                                                                                          11.6s
 => [2/6] WORKDIR /app                                                                                                         2.5s
 => [3/6] ADD . /app                                                                                                           5.2s
 => [4/6] COPY requirements.txt /app                                                                                           1.5s
 => [5/6] RUN python3 -m pip install -r requirements.txt                                                                     196.5s
 => [6/6] RUN python3 -m pip install ibm_db                                                                                    6.5s
 => exporting to image                                                                                                         8.3s
 => => exporting layers                                                                                                        7.4s
 => => writing image sha256:f16ba64a2cc2b955bedbf56d0e730b6cd10702b0b41f163218d6275a0d244448                                   0.2s
 => => naming to docker.io/library/job-portal                                                                                  0.2s

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



```
 => => writing image sha256:f16ba64a2cc2b955bedbf56d0e730b6cd10702b0b41f163218d6275a0d244448
 => => naming to docker.io/library/job-portal

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

E:\job-portal>docker images
REPOSITORY   TAG       IMAGE ID       CREATED         SIZE
job-portal   latest    f16ba64a2cc2   4 minutes ago   1.08GB
```

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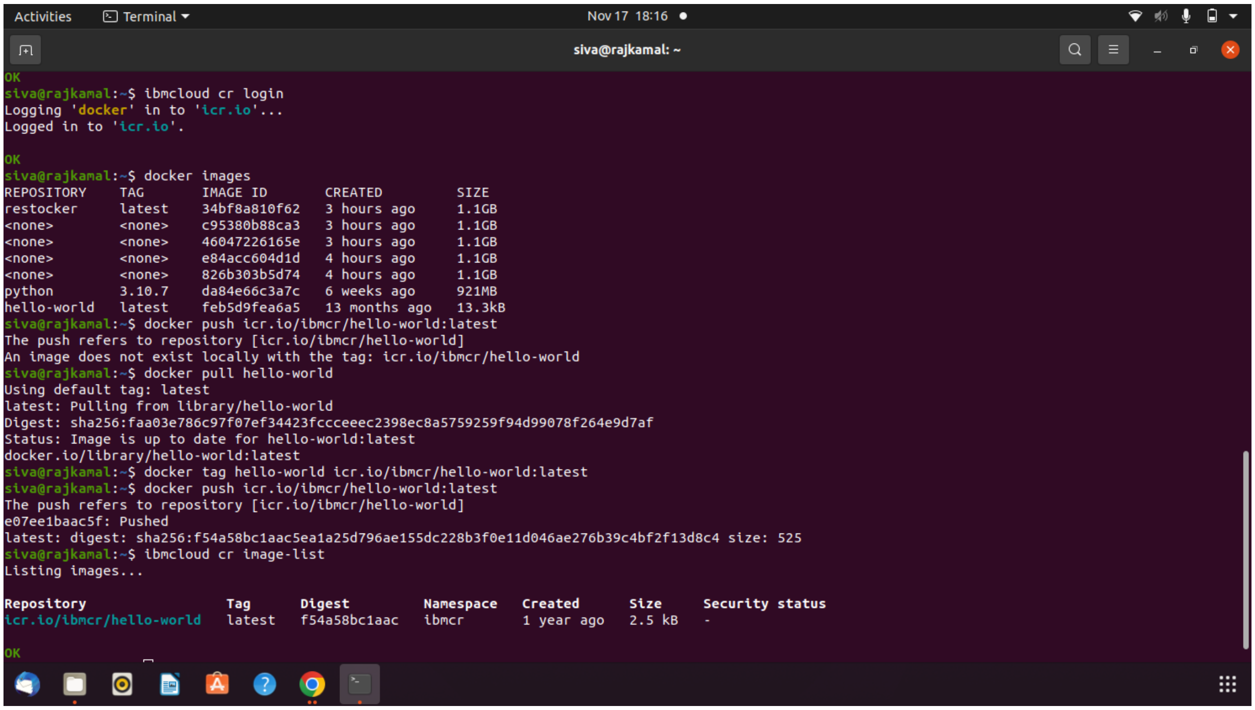
## 3. Create a IBM container registry and deploy helloworld app or jobportalapp.

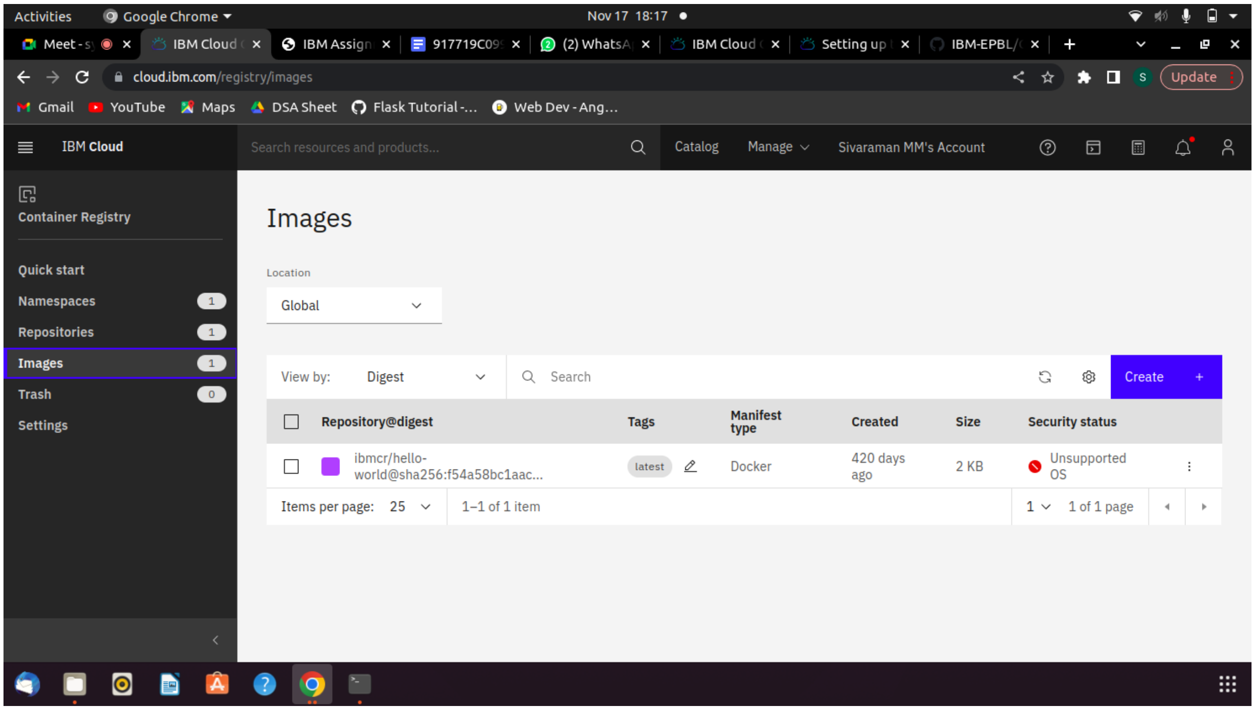


```
OK
siva@rajkamal:~$ ibmcloud cr login
Logging 'docker' in to 'icr.io'...
Logged in to 'icr.io'.

OK
siva@rajkamal:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
restocker     latest    34bf8a810f62   3 hours ago      1.1GB
<none>        <none>    c95380b88ca3   3 hours ago      1.1GB
<none>        <none>    46047226165e   3 hours ago      1.1GB
<none>        <none>    e84acc604d1d   4 hours ago      1.1GB
<none>        <none>    826b303b5d74   4 hours ago      1.1GB
python        3.10.7    da84e66c3a7c   6 weeks ago      921MB
hello-world   latest    feb5d9fea6a5   13 months ago    13.3kB
siva@rajkamal:~$ docker push icr.io/ibmcr/hello-world:latest
The push refers to repository [icr.io/ibmcr/hello-world]
An image does not exist locally with the tag: icr.io/ibmcr/hello-world
siva@rajkamal:~$ docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fccceeec2398ec8a5759259f94d99078f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest
siva@rajkamal:~$ docker tag hello-world icr.io/ibmcr/hello-world:latest
siva@rajkamal:~$ docker push icr.io/ibmcr/hello-world:latest
The push refers to repository [icr.io/ibmcr/hello-world]
e07ee1baac5f: Pushed
latest: digest: sha256:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525
siva@rajkamal:~$ ibmcloud cr image-list
Listing images...

Repository                 Tag      Digest         Namespace   Created      Size     Security status
icr.io/ibmcr/hello-world   latest   f54a58bc1aac   ibmcr       1 year ago   2.5 kB   -

OK
```



Images

Location: Global

View by: Digest

| □ | Repository@digest | Tags | Manifest type | Created | Size | Security status |
|---|---|---|---|---|---|---|
| □ | ibmcr/hello-world@sha256:f54a58bc1aac... | latest | Docker | 420 days ago | 2 KB | Unsupported OS |

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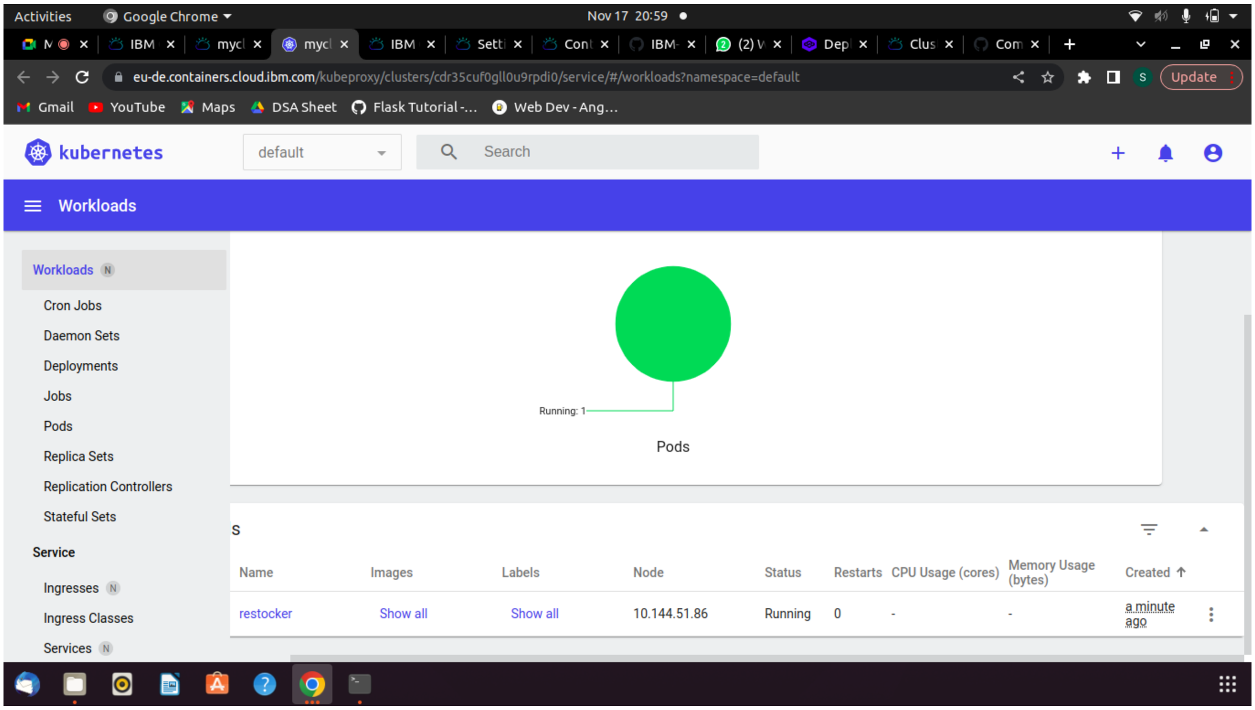
4. Create Kubernetes Cluster in IBM cloud and deploy hello world image or job portal image and expose the app to run in nodeport.



Activities Google Chrome Nov 17 20:59

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdr35cuf0gll0u9rpdi0/service/#/workloads?namespace=default

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Workloads

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Stateful Sets
Service
Ingresses N
Ingress Classes
Services N

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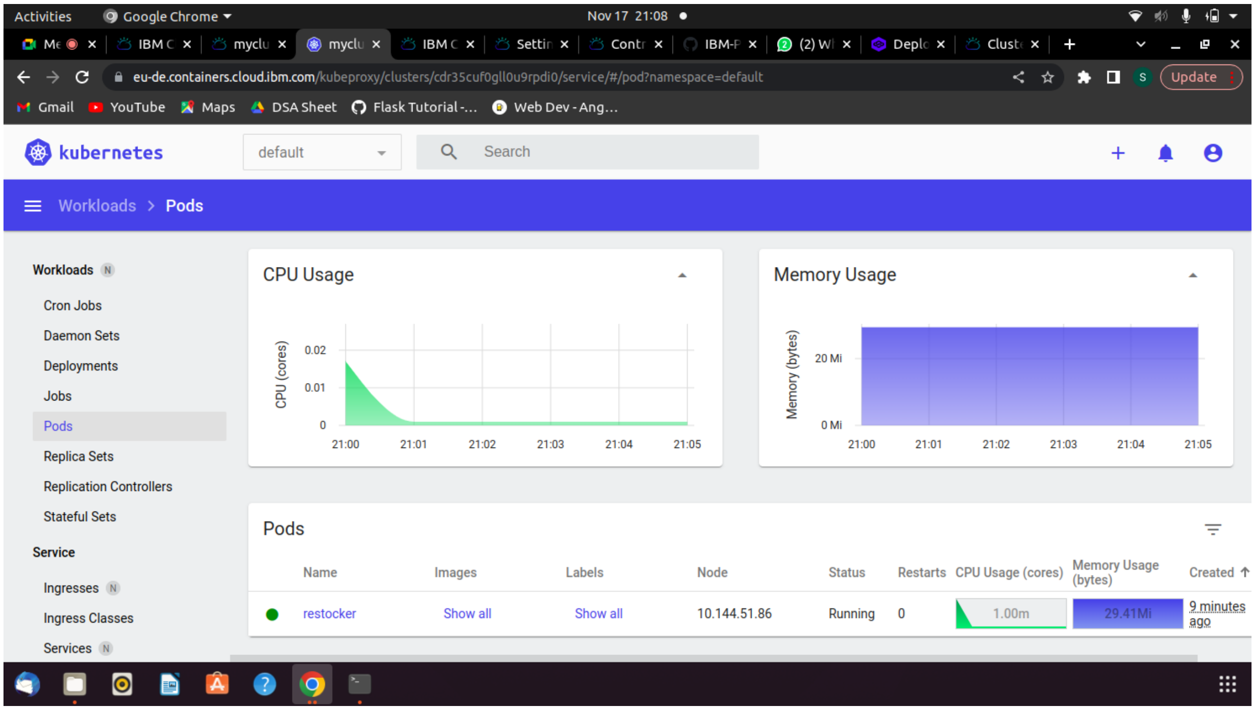
| Name | Images | Labels | Node | Status | Restarts | CPU Usage (cores) | Memory Usage (bytes) | Created ↑ |
|---|---|---|---|---|---|---|---|---|
| restocker | Show all | Show all | 10.144.51.86 | Running | 0 | - | - | a minute ago |



Activities Google Chrome Nov 17 21:08

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Replica Sets
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Stateful Sets
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Ingresses N
Ingress Classes
Services N

CPU Usage

Memory Usage

Pods

| | Name | Images | Labels | Node | Status | Restarts | CPU Usage (cores) | Memory Usage (bytes) | Created ↑ |
|---|---|---|---|---|---|---|---|---|---|
| ● | restocker | Show all | Show all | 10.144.51.86 | Running | 0 | 1.00m | 29.41Mi | 9 minutes ago |