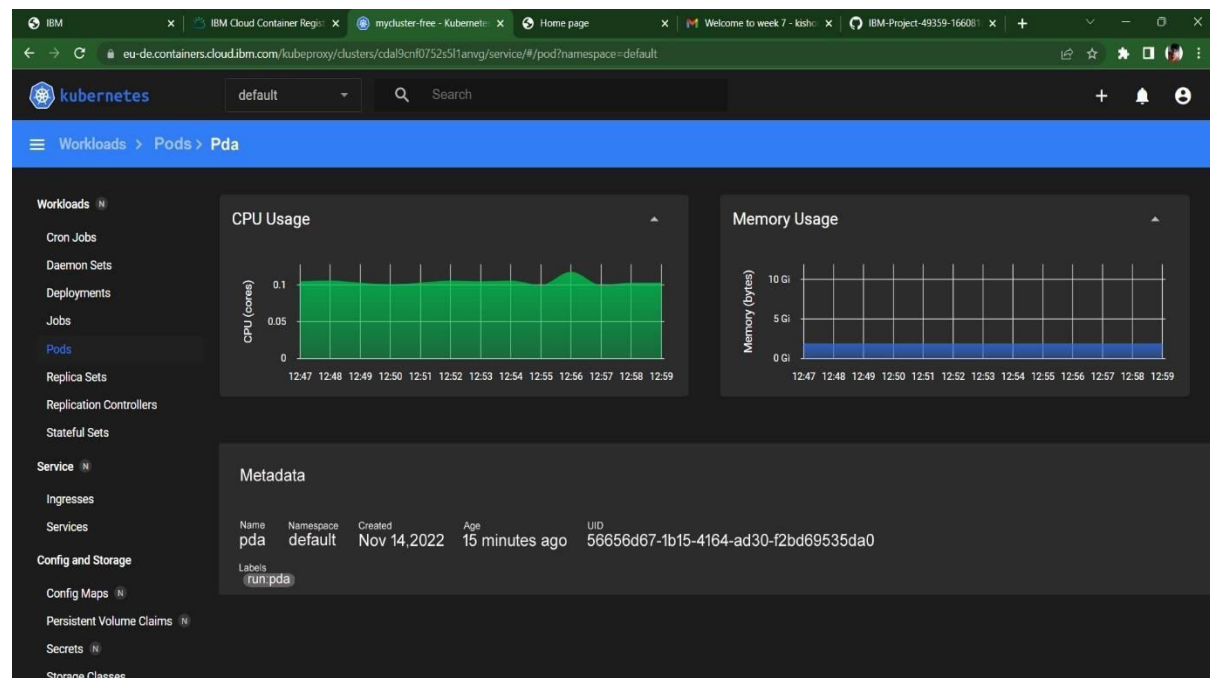
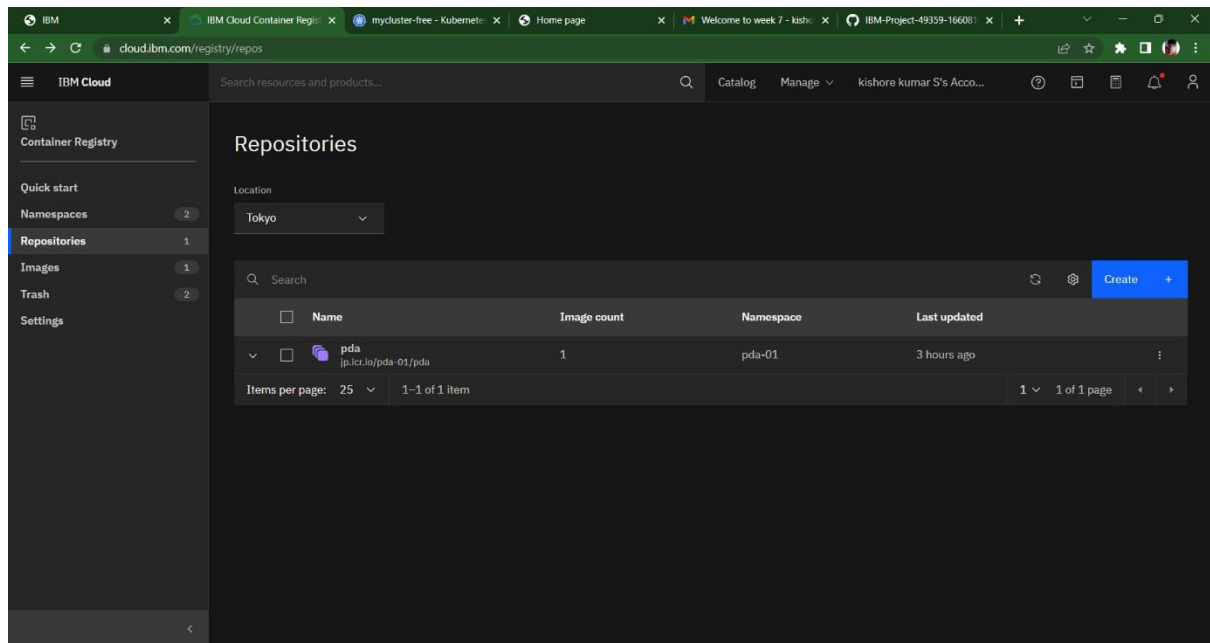


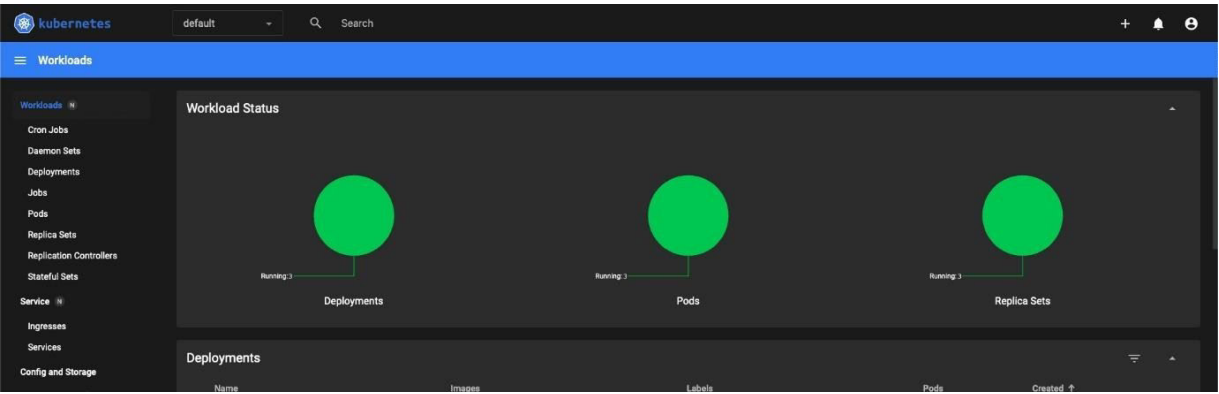
## Creating Kubernetes Cluster using IBM Cloud Container Registry

```
C:\Windows\System32\cmd.exe
bfc1deb8136e: Mounted from mod-01/ibm-db2-docker
1f123186824c: Mounted from mod-01/ibm-db2-docker
3ddeb1157931: Mounted from mod-01/ibm-db2-docker
100796cdf2b1: Mounted from mod-01/ibm-db2-docker
54acb5a6fa0b: Mounted from mod-01/ibm-db2-docker
8d51c618126f: Mounted from mod-01/ibm-db2-docker
9ff6e4d46744: Mounted from mod-01/ibm-db2-docker
a89d1d47b5a1: Mounted from mod-01/ibm-db2-docker
655ed1b7a428: Mounted from mod-01/ibm-db2-docker
latest: digest: sha256:7e60b8c662fa6836bed998ea2f97a3a31e7ddfb131dd7096a2eecd8288bbf27 size: 3265

C:\Users\kishore kumar\Desktop\Pda>kubectl config get-contexts
CURRENT  NAME  CLUSTER  AUTHINFO  NAMESPACE
*        docker-desktop  docker-desktop  docker-desktop
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/ibm_deployment.yaml
deployment.apps/pda created
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/flask_service.yaml
service/flask-app-service created
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/flask_ingress.yaml
ingress.networking.k8s.io/pda-ingress created
C:\Users\kishore kumar\Desktop\Pda>kubectl get ing
NAME  CLASS  HOSTS  ADDRESS  PORTS  AGE
pda-ingress  <none>  *      80      25s
C:\Users\kishore kumar\Desktop\Pda>kubectl get svc
NAME  TYPE  CLUSTER-IP  EXTERNAL-IP  PORT(S)  AGE
flask-app-service  ClusterIP  10.97.238.223  <none>  5000/TCP  2m5s

C:\Windows\System32\cmd.exe
C:\Users\kishore kumar\Desktop\Pda>kubectl describe svc flask-app-service
Name:          flask-app-service
Namespace:     default
Labels:        <none>
Annotations:   <none>
Selector:      app=pda
Type:          ClusterIP
IP Family Policy: SingleStack
IP Families:   IPv4
IP:            10.97.238.223
IPs:           10.97.238.223
Port:          <unset> 5000/TCP
TargetPort:    5000/TCP
Endpoints:
Session Affinity: None
Events:        <none>
C:\Users\kishore kumar\Desktop\Pda>kubectl describe svc pda
Error from server (NotFound): services "pda" not found
C:\Users\kishore kumar\Desktop\Pda>kubectl run flask-app-service --image=jp.icr.io/pda-01/pda
pod/flask-app-service created
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/ibm_deployment.yaml
deployment.apps/pda unchanged
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/flask_service.yaml
service/flask-app-service unchanged
C:\Users\kishore kumar\Desktop\Pda>kubectl apply -f kubernetes/flask_ingress.yaml
ingress.networking.k8s.io/pda-ingress unchanged
C:\Users\kishore kumar\Desktop\Pda>kubectl get nodes -o wide
NAME  STATUS  ROLES  AGE  VERSION  INTERNAL-IP  EXTERNAL-IP  OS-IMAGE  KERNEL-VERSION  CONTAINER-RUNTIME
E     docker-desktop  Ready  control-plane  38h  v1.25.0  192.168.65.4  <none>  Docker Desktop  5.10.16.3-microsoft-standard-WSL2  docker://20.10.17
C:\Users\kishore kumar\Desktop\Pda>
```





## Docker – Convert into Image and Container

```
C:\Windows\System32\cmd.exe x + v
Microsoft Windows [Version 10.0.22621.819]
(c) Microsoft Corporation. All rights reserved.

C:\Users\kishore kumar\Desktop\Pda>docker build -t pda .
[+] Building 219.5s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring Dockerfile: 208B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/python:3.10.6 1.8s
=> [internal] load build context 0.0s
=> => transferring context: 3.33kB 0.0s
=> [1/6] FROM docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 0.0s
=> CACHED [2/6] WORKDIR /app 0.0s
=> CACHED [3/6] COPY requirements.txt ./ 0.0s
=> CACHED [4/6] RUN pip install -r requirements.txt 0.0s
=> [5/6] RUN pip install ibm_db 216.5s
=> [6/6] COPY . . 0.1s
=> exporting to image 1.0s
=> => exporting layers 1.0s
=> => writing image sha256:13a3f96dea2de5af79dc3f04d957524f9aa54912be56b1db9bb3104eb024bdac 0.0s
=> => naming to docker.io/library/pda 0.0s

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

C:\Users\kishore kumar\Desktop\Pda>
```

```
C:\Windows\System32\cmd.exe x + v

=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/python:3.10.6 1.8s
=> [internal] load build context 0.0s
=> => transferring context: 3.33kB 0.0s
=> [1/6] FROM docker.io/library/python:3.10.6@sha256:745efd7b7e4aac9a8422bd8c62d8bc35a693e8979a240d29677cb03e6aa 0.0s
=> CACHED [2/6] WORKDIR /app 0.0s
=> CACHED [3/6] COPY requirements.txt ./ 0.0s
=> CACHED [4/6] RUN pip install -r requirements.txt 0.0s
=> [5/6] RUN pip install ibm_db 216.5s
=> [6/6] COPY . . 0.1s
=> exporting to image 1.0s
=> => exporting layers 1.0s
=> => writing image sha256:13a3f96dea2de5af79dc3f04d957524f9aa54912be56b1db9bb3104eb024bdac 0.0s
=> => naming to docker.io/library/pda 0.0s

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

C:\Users\kishore kumar\Desktop\Pda>docker run -p 5000:5000 pda
* Serving Flask app 'app'
* 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://172.17.0.3:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 877-205-231
```