DEPLOY IN KUBERNETES CLUSTER

Team ID	PNT2022TMID35705
Project Name	Personal Expense Tracker

Installing Kubectl in our system

```
ubuntu@ip-172-31-6-75:~/ibm-prj$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   138  100   138    0     0   1028      0 --:--:-- --:--:-- --:--:--  1029
100 42.9M  100 42.9M    0     0  43.1M      0 --:--:-- --:--:-- --:--:-- 82.2M
ubuntu@ip-172-31-6-75:~/ibm-prj$
ubuntu@ip-172-31-6-75:~/ibm-prj$ sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
ubuntu@ip-172-31-6-75:~/ibm-prj$
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl version --output=yaml
clientVersion:
  buildDate: "2022-11-09T13:36:36Z"
  compiler: gc
  gitCommit: 872a965c6c6526caa949f0c6ac028ef7aff3fb78
  gitTreeState: clean
  gitVersion: v1.25.4
  goVersion: go1.19.3
  major: "1"
  minor: "25"
  platform: linux/amd64
kustomizeVersion: v4.5.7

The connection to the server localhost:8080 was refused - did you specify the right host or port?
ubuntu@ip-172-31-6-75:~/ibm-prj$
```

Install IBM plugins

```
ubuntu@ip-172-31-6-75:~$ ibmcloud plugin install container-service
Looking up 'container-service' from repository 'IBM Cloud'...
Plug-in 'container-service[kubernetes-service/ks] 1.0.459' found in repository 'IBM Cloud'
Attempting to download the binary file...
 26.63 MiB / 26.63 MiB [==========================================================================================================================] 100.00% 0s
27922432 bytes downloaded
Installing binary...
OK
Plug-in 'container-service 1.0.459' was successfully installed into /home/ubuntu/.bluemix/plugins/container-service. Use 'ibmcloud plugin show container-service' to show it
s details.
ubuntu@ip-172-31-6-75:~$
ubuntu@ip-172-31-6-75:~$ ibmcloud plugin install observe-service
Looking up 'observe-service' from repository 'IBM Cloud'...
Plug-in 'observe-service 1.0.82' found in repository 'IBM Cloud'
Attempting to download the binary file...
 13.23 MiB / 13.23 MiB [==========================================================================================================================] 100.00% 0s
13869056 bytes downloaded
Installing binary...
OK
Plug-in 'observe-service 1.0.82' was successfully installed into /home/ubuntu/.bluemix/plugins/observe-service. Use 'ibmcloud plugin show observe-service' to show its detai
ls.
ubuntu@ip-172-31-6-75:~$
```

```
ubuntu@ip-172-31-6-75:~$ ibmcloud plugin list
Listing installed plug-ins...

Plugin Name                              Version   Status   Private endpoints supported
container-registry                       1.0.2             true
container-service[kubernetes-service/ks] 1.0.459           false
observe-service[ob]                      1.0.82            false

ubuntu@ip-172-31-6-75:~$
```

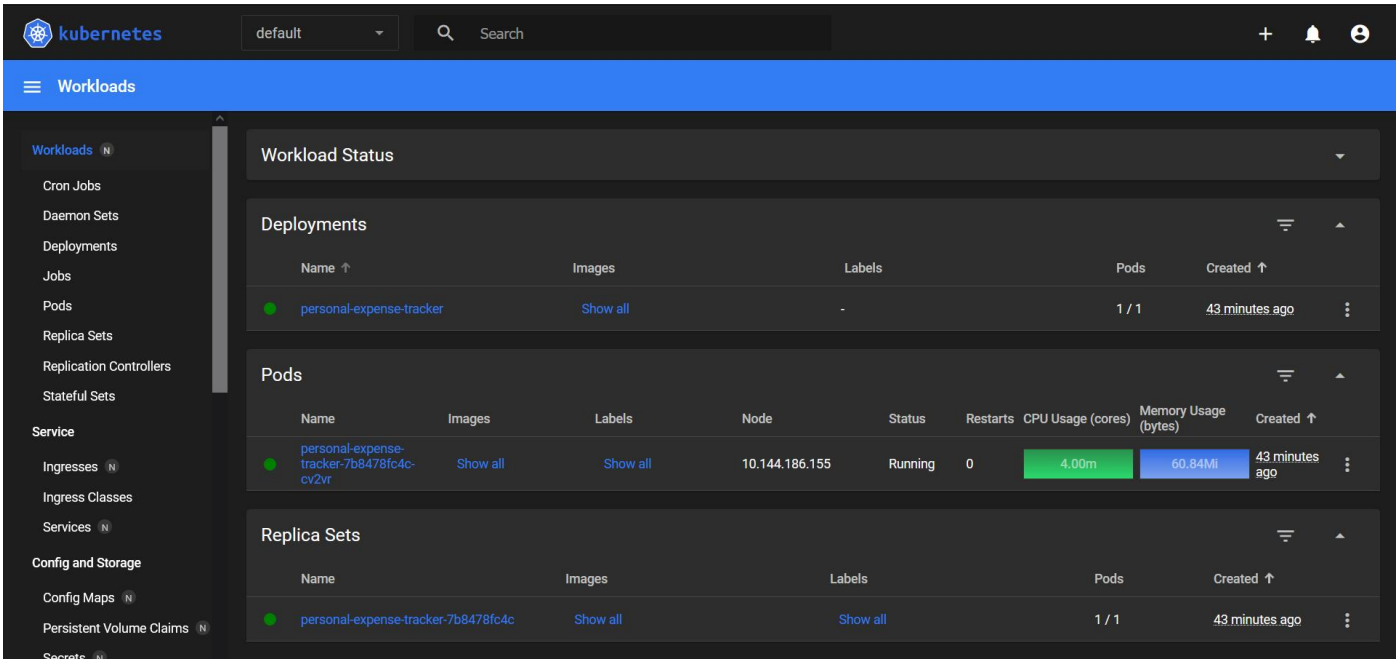
Configure IBM kubernetes cluster in our system

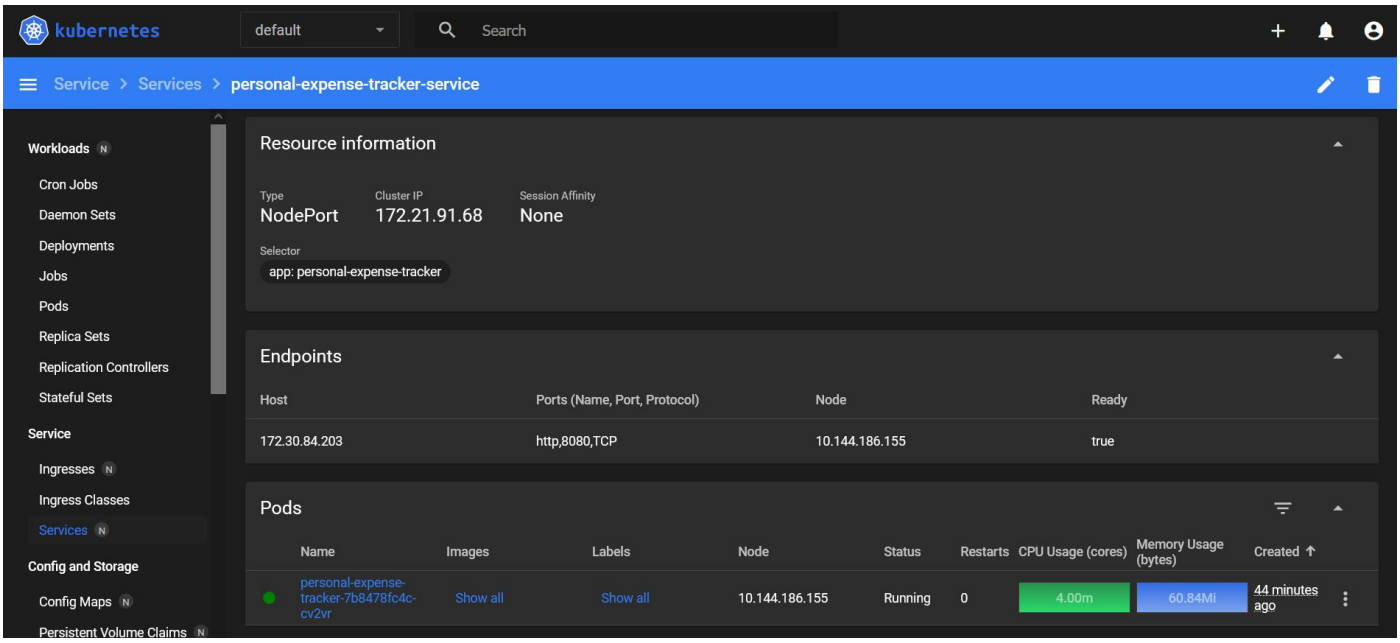
```
ubuntu@ip-172-31-6-75:~$ ibmcloud ks cluster config -c cdt0rqlf0i7o2hibn5v0
OK
The configuration for cdt0rqlf0i7o2hibn5v0 was downloaded successfully.

Added context for cdt0rqlf0i7o2hibn5v0 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.
ubuntu@ip-172-31-6-75:~$
```

Create pods and services

```
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl apply -f deployment.yaml
deployment.apps/personal-expense-tracker created
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl apply -f service.yaml
service/personal-expense-tracker-service created
ubuntu@ip-172-31-6-75:~/ibm-prj$
```

Kubernetes Dashboard





Pods and Services

```
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl get pods
NAME                                        READY   STATUS    RESTARTS   AGE
personal-expense-tracker-7b8478fc4c-cv2vr   1/1     Running   0          42m
ubuntu@ip-172-31-6-75:~/ibm-prj$
ubuntu@ip-172-31-6-75:~/ibm-prj$
```

```
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl get service
NAME                              TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
kubernetes                        ClusterIP   172.21.0.1      <none>        443/TCP          59m
personal-expense-tracker-service  NodePort    172.21.91.68    <none>        80:32488/TCP     42m
ubuntu@ip-172-31-6-75:~/ibm-prj$
```

External IP of worker node.

```
ubuntu@ip-172-31-6-75:~/ibm-prj$ kubectl get nodes -o wide
NAME            STATUS   ROLES    AGE   VERSION       INTERNAL-IP      EXTERNAL-IP      OS-IMAGE             KERNEL-VERSION       CONTAINER-RUNTIME
10.144.186.155  Ready    <none>   69m   v1.24.7+IKS   10.144.186.155   159.122.174.232  Ubuntu 18.04.6 LTS   4.15.0-194-generic   containerd://1.6.8
ubuntu@ip-172-31-6-75:~/ibm-prj$
```

Public IP: 159.122.174.232
Node Port: 32488

Accessing Personal Expense Tracker using http://159.122.174.232:32488/