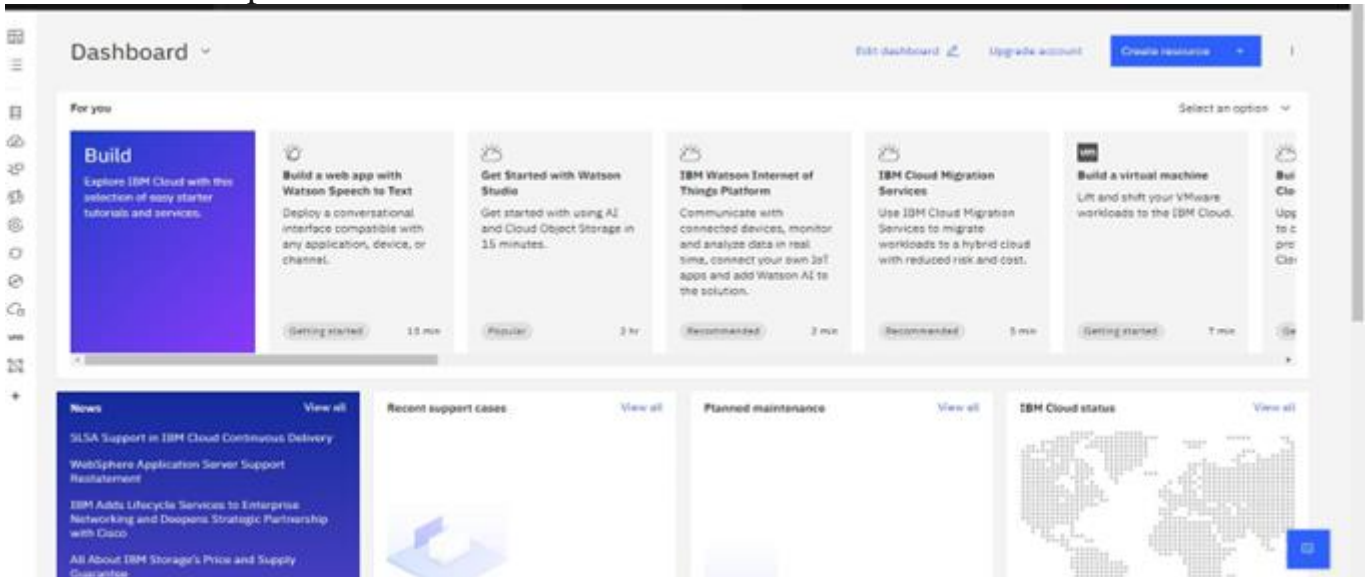


DEPLOY IN KUBERNATES CLUSTER

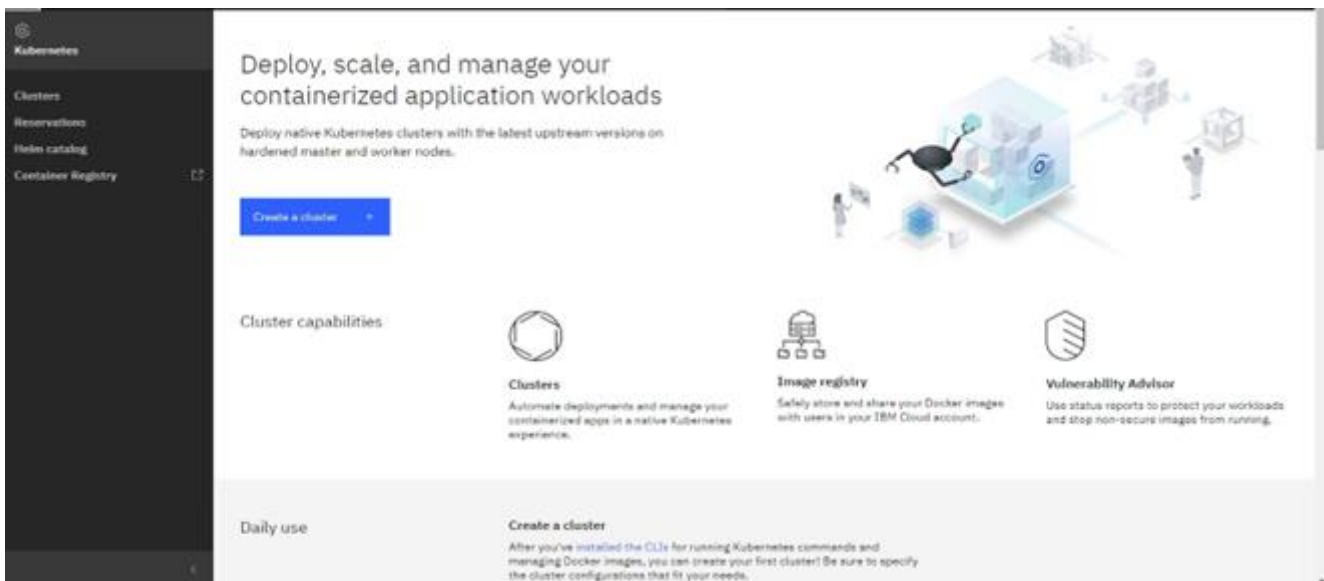
Team ID	PNT2022TMID34929
Project Name	Project - Personal Expense Tracker
Date	01 NOV 2022

Step 1: Create a Kubernetes cluster

- Sign in to your IBM Cloud Dashboard.
- Open IBM Kubernetes Service.



Step 2: Click Create Cluster.



Step 3 : Select the Region where you want to deploy the cluster, type a name for your cluster, then click Create Cluster.

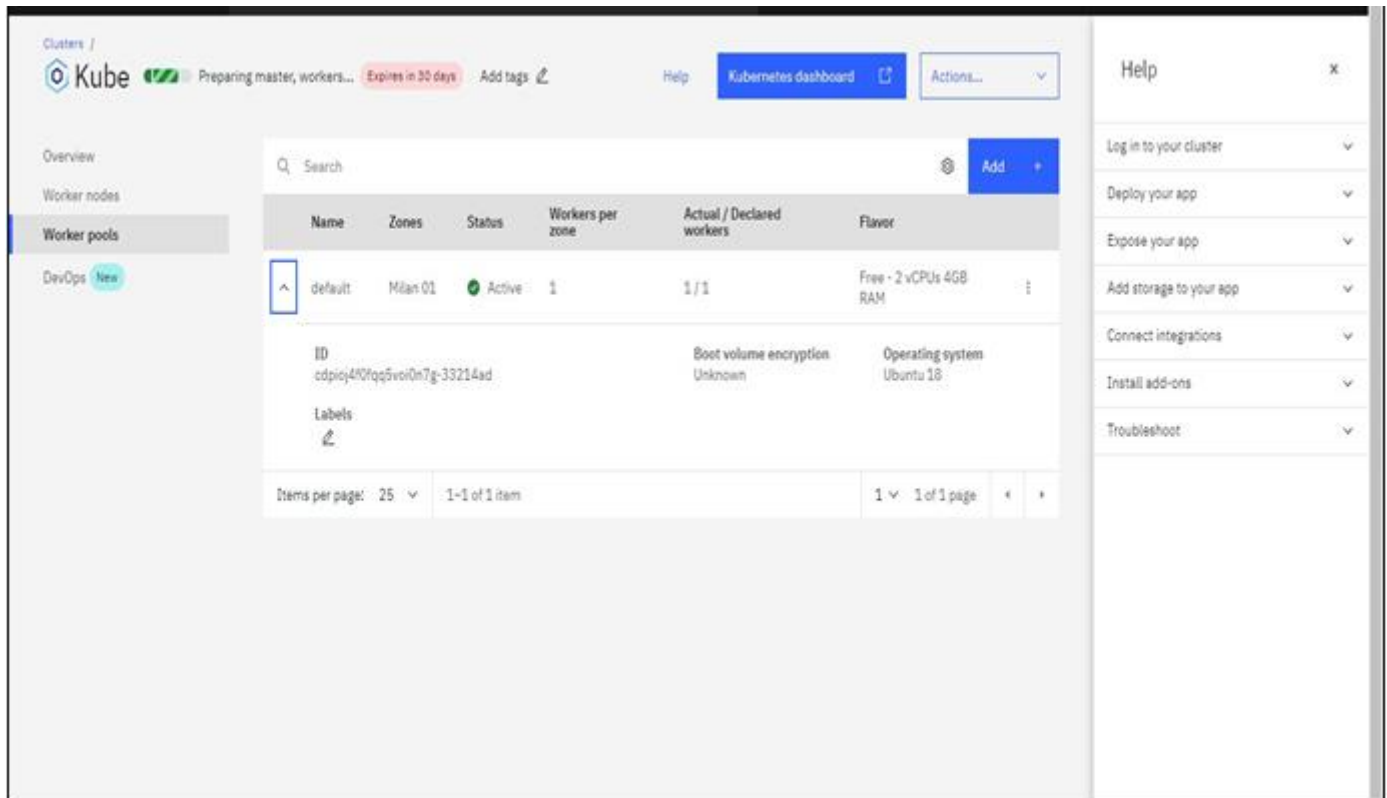
- Select the appropriate cluster type depending on your account.
- It takes some time for the cluster to get ready (around 30 minutes).

The screenshot shows the 'Kubernetes cluster' creation page. On the left, there's a 'Create' button and an 'About' button. Below them is a 'Plan details' section with a 'Pricing plan' dropdown set to 'Free'. Further down is the 'Kubernetes version' section with a dropdown set to '1.24.7'. On the right, a 'Summary' sidebar shows the 'Kubernetes cluster' details, including 'Worker node' specifications (Free, 2 vCPUs, 4GB RAM, Virtual, shared, Ubuntu 18). It also displays the 'Total estimated cost' as 'Free/mo' and includes a 'Create' button and an 'Add to estimate' button.

Step 4 : Once the cluster is ready, click on your cluster's name and you will be redirected to a new page with information about your cluster and workernode.

The screenshot shows the 'Kubernetes cluster' overview page. The top bar includes the 'Kube' logo, a progress indicator 'Preparing master, workers...', an 'Expires in 30 days' warning, and buttons for 'Help', 'Kubernetes dashboard', and 'Actions...'. The left sidebar has links for 'Overview', 'Worker nodes', 'Worker pools', and 'DevOps'. The main content area features a 'Node status' section showing '1 of 1' nodes in 'Pending' state. Below this is a 'Details' section with fields for 'Cluster ID', 'Version' (1.24.7_1542), 'Infrastructure' (Classic), 'Zone' (Mian 01), 'Created' (11/15/2022, 11:36 AM), and 'Resource group'. A 'Node health' section at the bottom shows '1 total nodes'. On the right, a 'Help' sidebar lists various actions like 'Log in to your cluster', 'Deploy your app', 'Expose your app', 'Add storage to your app', 'Connect integrations', 'Install add-ons', and 'Troubleshoot'.

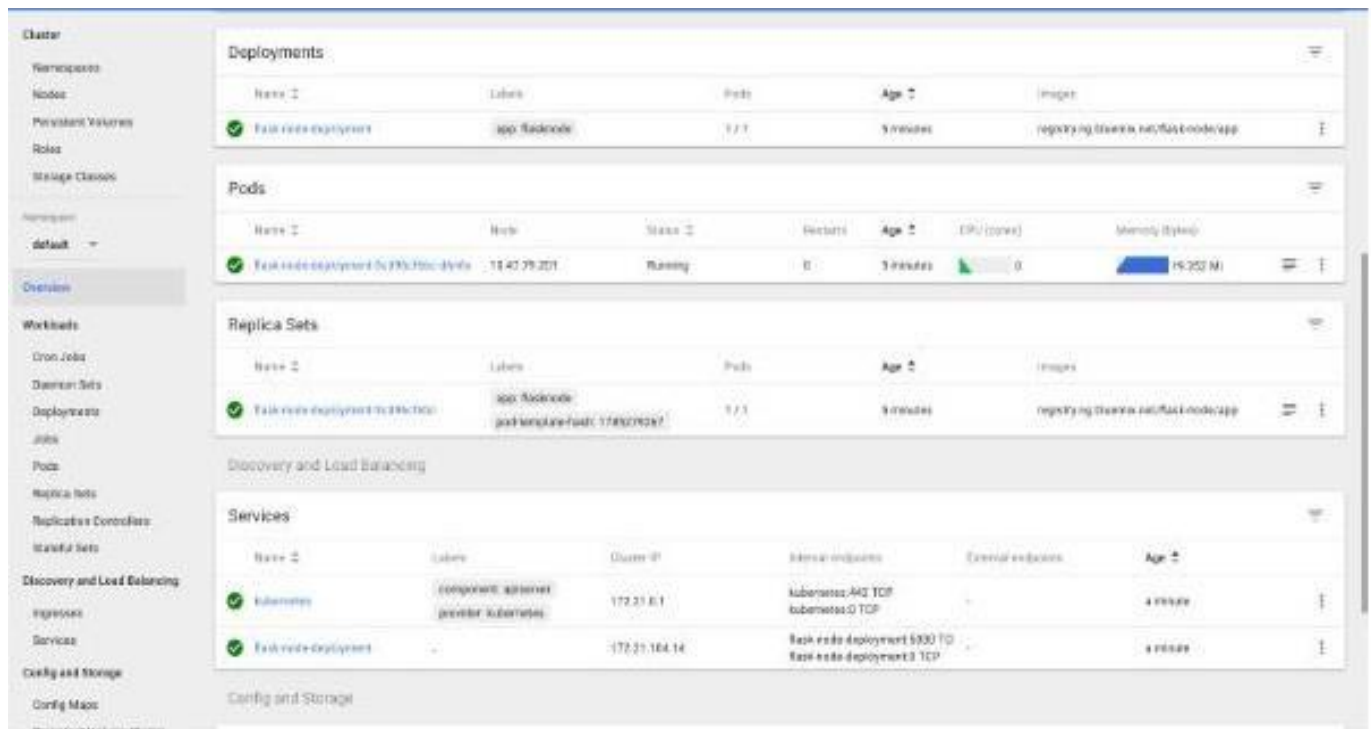
Step 5 : Click on the Worker Nodes tab to note the cluster's Public IP.



Step 6: Deploy your application to Kubernetes

- Target the IBM Cloud Kubernetes Service region where you want to work.
`ibmcloud cs region-set us-south`
- Set the context for the cluster in your CLI.
`ibmcloud cs cluster-config cluster_kunal`
- Verify that you can connect to your cluster by listing your worker nodes.
`kubectl get nodes`
- Create the deployment.
`kubectl create -f deployment.yaml`
- Create the service.
`kubectl create -f service.yaml`

Step 7: Look at the Kubernetes dashboard from the IBM Kubernetes Service overview page.



The screenshot shows the IBM Kubernetes Service dashboard. The left sidebar contains navigation links for Cluster, Namespaces, Nodes, Persistent Volumes, Roles, Storage Classes, Overview (selected), Workloads, Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, Replication Controllers, Horizontal Auto-Scaling, Discovery and Load Balancing, Ingresses, Services, Config and Storage, and Config Maps. The main content area displays several Kubernetes resource lists:

- Deployments:** A table with columns Name, Labels, Pods, Age, and Image. It shows one deployment: 'Fast node deployment' with 1/1 pods, 5 minutes age, and image 'registry.io/docker.io/fascode/nodeapp'.
- Pods:** A table with columns Name, Node, Status, Restarts, Age, CPU (cores), and Memory (bytes). It shows one pod: 'Fast node deployment-fc393fbc-d54fs' on node '11.47.79.201', status 'Running', 0 restarts, 3 minutes age, 0 CPU cores, and 15.252 Mi memory.
- Replica Sets:** A table with columns Name, Labels, Pods, Age, and Image. It shows one replica set: 'Fast node deployment-fc393fbc' with 1/1 pods, 5 minutes age, and image 'registry.io/docker.io/fascode/nodeapp'.
- Discovery and Load Balancing:** A section containing a table of **Services** with columns Name, Labels, Cluster IP, Internal endpoints, External endpoints, and Age. It shows two services: 'kubernetes' (cluster IP 172.31.0.1) and 'Fast node deployment' (cluster IP 172.31.164.14).
- Config and Storage:** A section header at the bottom.

Step 8: Finally, go to your browser and the Public IP of your worker node.

