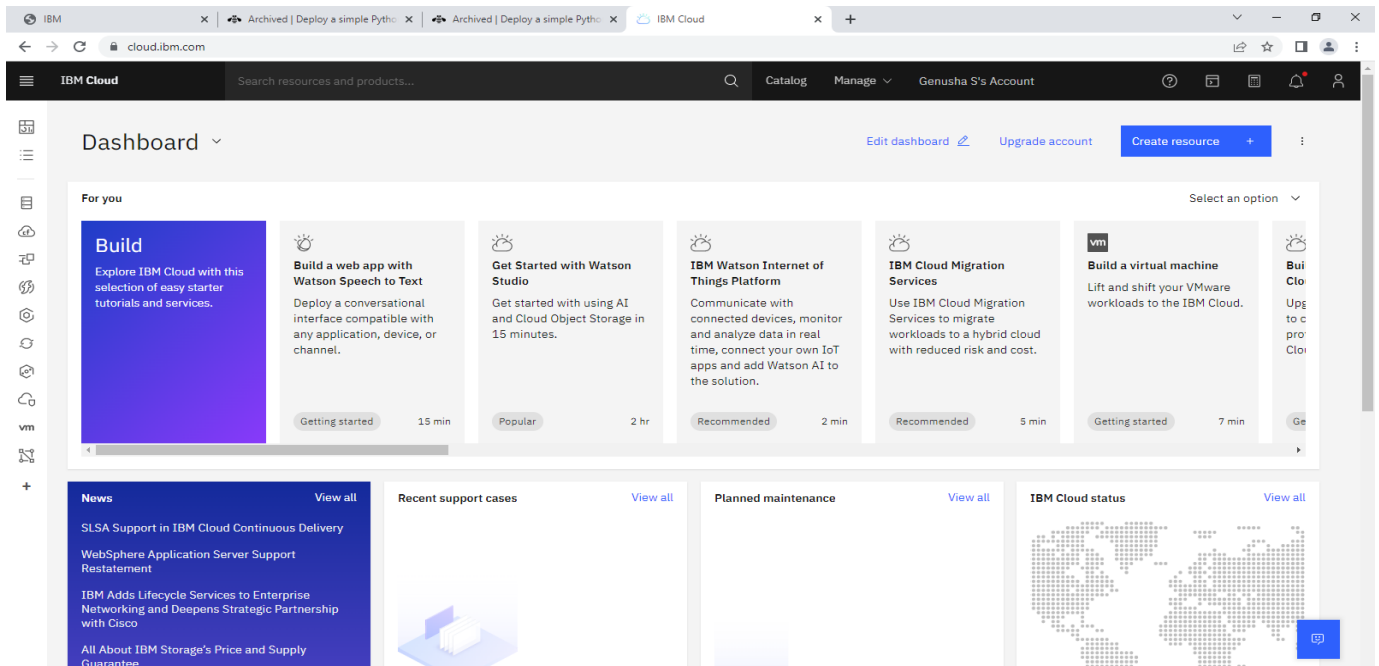


DEPLOY IN KUBERNATES CLUSTER

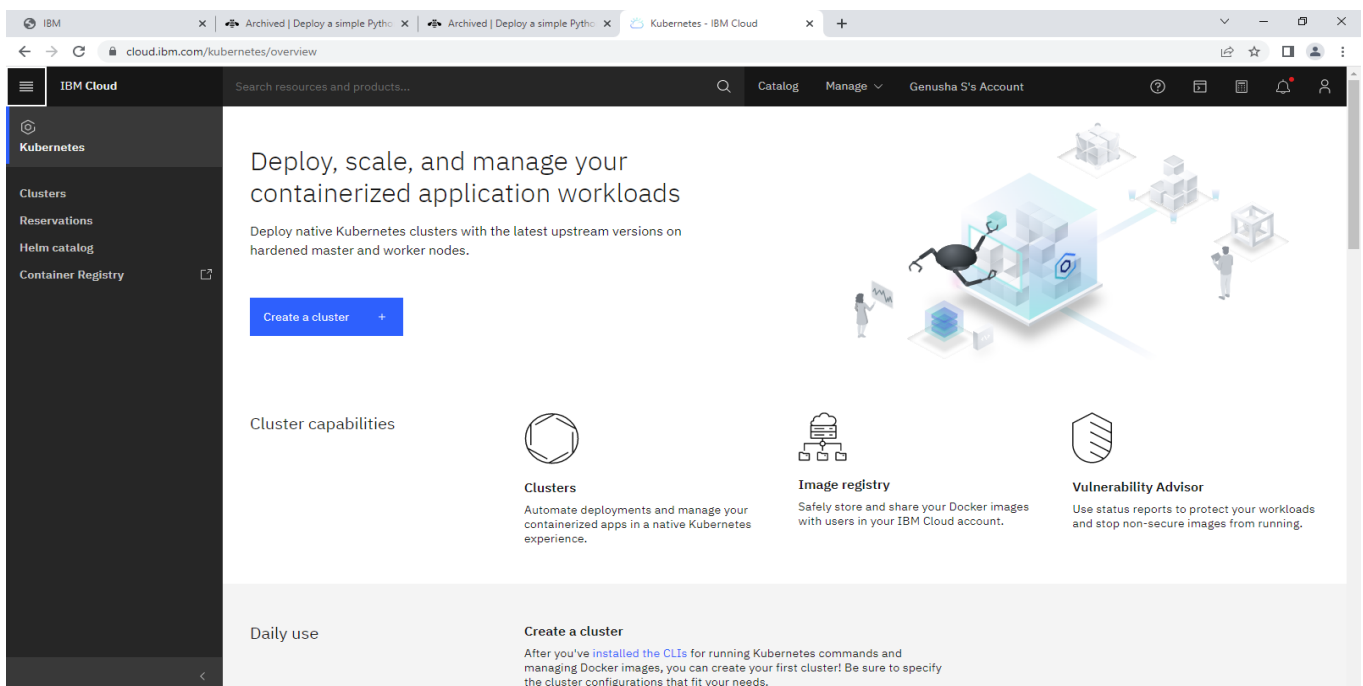
Team ID	PNT202TMID34851
Project Name	Skill and Job Recommender
Date	03 NOV 2022

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.

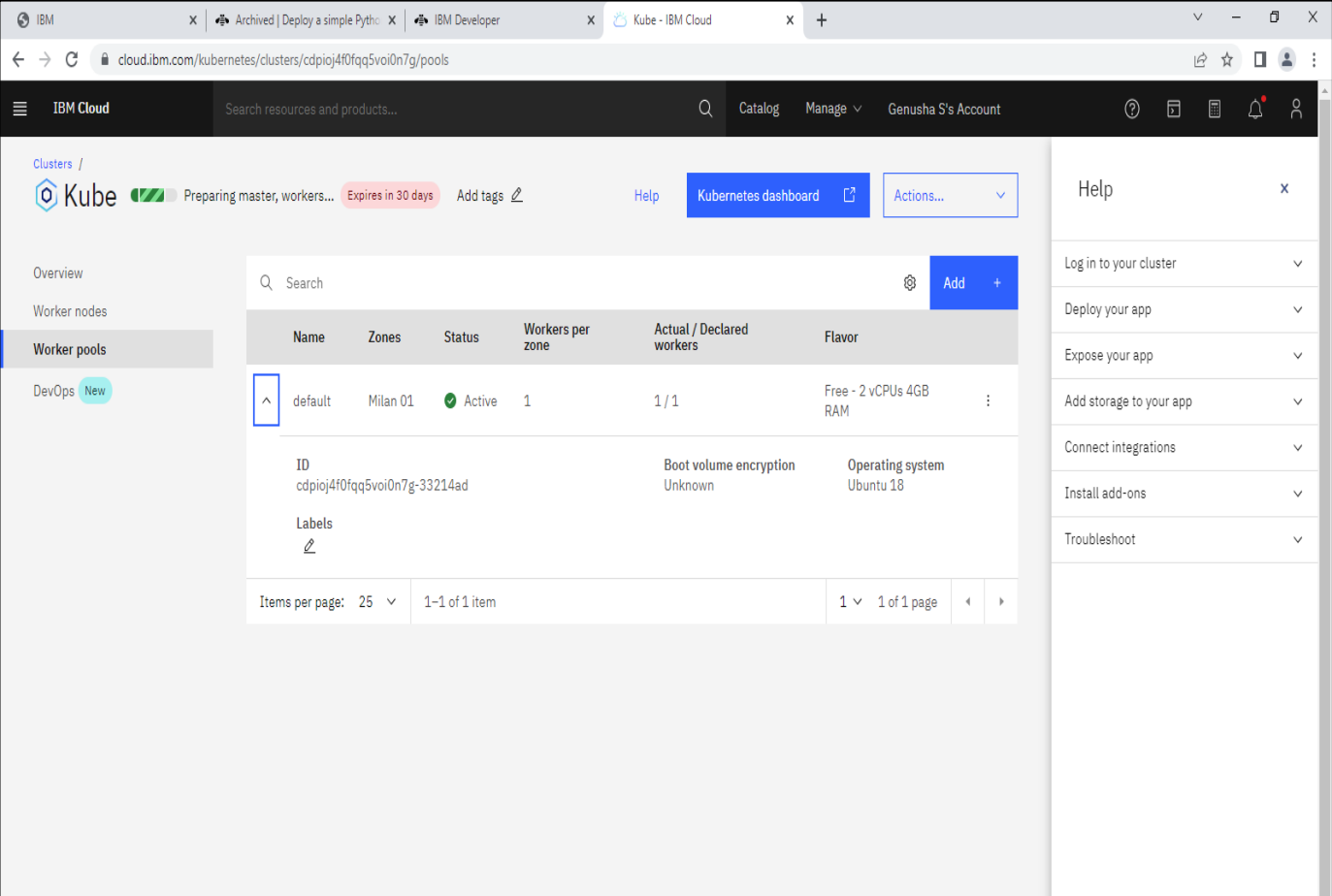
- Select the appropriate cluster type depending on your account.
- It takes some time for the cluster to get ready (around 30 minutes).

The screenshot shows the IBM Cloud 'Create a Cluster' page. The main heading is 'Kubernetes cluster' with sub-links for 'Author: IBM', 'Docs', and 'API docs'. There are two tabs: 'Create' (active) and 'About'. A banner for Red Hat OpenShift is visible. Under 'Plan details', there's a link to learn more about plan differences. A 'Pricing plan' dropdown is set to 'Free'. Under 'Kubernetes version', a dropdown is set to '1.24.7'. On the right, a 'Summary' sidebar shows the 'Worker node' plan (Free) with specifications: 2 vCPUs, 4GB RAM, Virtual - shared, Ubuntu 18. It also shows a 'Total estimated cost' of 'Free/mo' with a disclaimer about additional charges. At the bottom of the sidebar are 'Create' and 'Add to estimate' buttons.

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 IBM Cloud 'Overview' page for a Kubernetes cluster. The top bar indicates the cluster is 'Preparing master, workers...' and 'Expires in 30 days'. A 'Help' button and a 'Kubernetes dashboard' link are present. The left sidebar has 'Overview' selected, with links for 'Worker nodes', 'Worker pools', and 'DevOps' (marked as 'New'). The main content area has a warning banner about the 30-day expiration. Below this are four status cards: 'Node status' (1 of 1, Pending), 'Add-on status' (0 of 0, Normal), 'Master status' (Unknown), and 'Ingress status' (Pending). A 'Details' section shows metadata: Cluster ID, Version (1.24.7_1542), Infrastructure (Classic), Zones (Milan 01), Created time (11/15/2022, 11:36 AM), and Resource group. An 'Image security enforcement' toggle is set to 'Enable'. At the bottom, a 'Node health' section shows '1 total nodes'. A right sidebar contains a 'Help' menu with options 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.



The screenshot shows the IBM Cloud Kubernetes dashboard. The 'Worker nodes' tab is selected, displaying a table of worker nodes. The table has the following columns: Name, Zones, Status, Workers per zone, Actual / Declared workers, and Flavor. The 'default' worker node is listed with status 'Active' and 1 worker. A blue box highlights the 'default' worker node. The 'Worker pools' tab is also visible in the left sidebar.

Name	Zones	Status	Workers per zone	Actual / Declared workers	Flavor
default	Milan 01	Active	1	1 / 1	Free - 2 vCPUs 4GB RAM

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. On the left is a navigation menu with categories: Cluster, Namespaces, Nodes, Persistent Volumes, Roles, Storage Classes, Workloads, Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, Replication Controllers, Stateful Sets, Discovery and Load Balancing, Ingresses, Services, Config and Storage, and Config Maps. The main content area is titled 'Overview' and contains several sections: Deployments, Pods, Replica Sets, Discovery and Load Balancing, and Services. Each section displays a table of resources.

Deployments				
Name	Labels	Pods	Age	Images
Fast node deployment	app: flasknode	1 / 1	5 minutes	registry.threema.net/flasknode/app

Pods						
Name	Node	Status	Restarts	Age	CPU (cores)	Memory (bytes)
Fast node deployment-5c3f3b-fbdc-4b4fa	18-47-79-201	Running	0	3 minutes	0	19-252 Mi

Replica Sets				
Name	Labels	Pods	Age	Images
Fast node deployment-5c3f3b-fbdc-4b4fa	app: flasknode pod-template-hash: 1786279587	1 / 1	5 minutes	registry.threema.net/flasknode/app

Discovery and Load Balancing					
Services					
Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
kubernetes	component: kubelet provider: kubernetes	172.21.0.1	kubernetes-AZ TCP kubernetes-D TCP	-	4 minutes
Fast node deployment	-	172.21.184.14	Fast node deployment-5000 TCP Fast node deployment-3 TCP	-	5 minutes

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

