

1. Containerize the App.

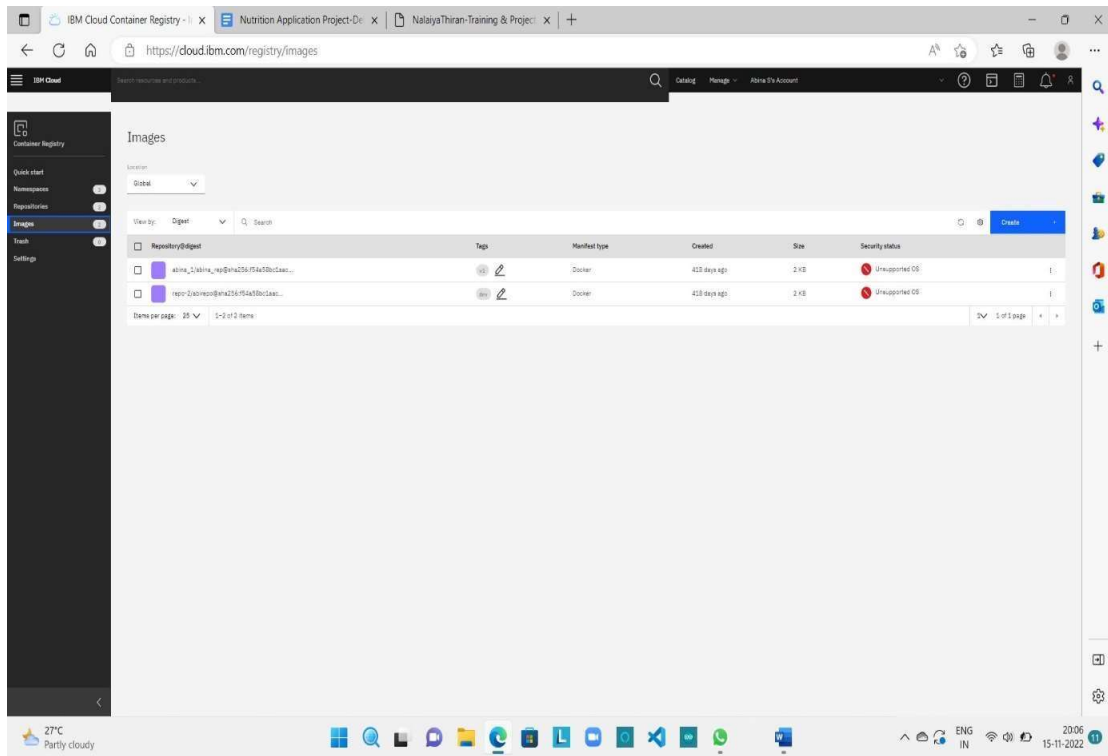
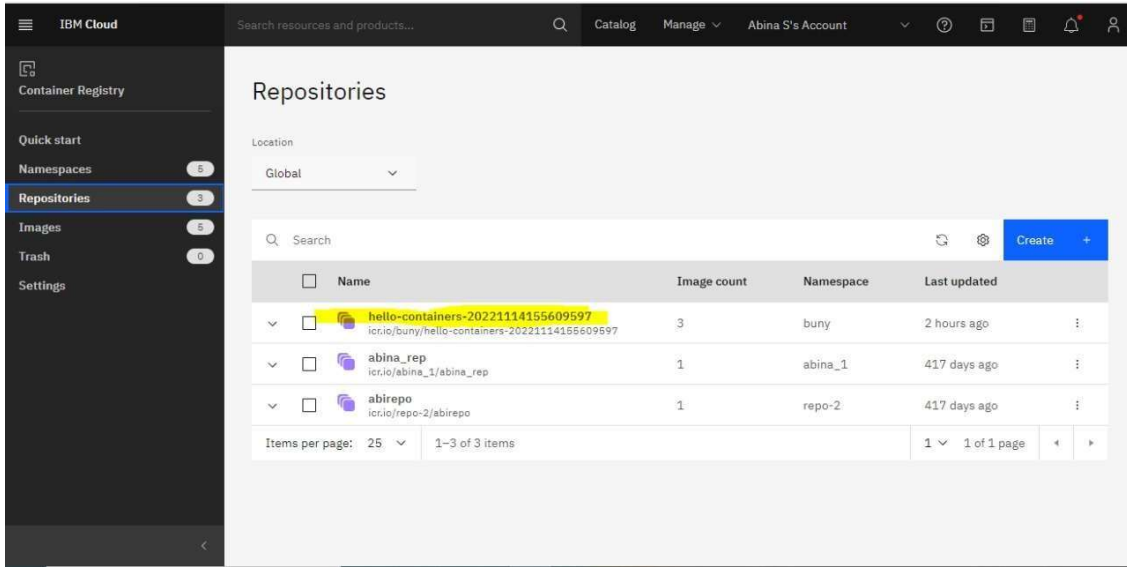
The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a timer at 03:52:20, a 'CLOSE SESSION' button, and an 'Instances' section showing one instance with IP 192.168.0.28. The main area displays the container details for 'cdj2d4n9_cdj2emu3tccg008jltng'. It shows the IP 192.168.0.28, memory usage at 2.29% (91.43MiB / 3.906GiB), and CPU usage at 0.39%. Below this, there's a terminal window showing the following commands and output:

```
7d694ce2bb07: Pull complete
99f5116afda5: Pull complete
Digest: sha256:deca832efceeb33df7224b80d4c6b5ab219599614f408dfb6960be94c396
Status: Downloaded newer image for testcontainers/helloworld:latest
docker.io/testcontainers/helloworld:latest
[root@192.168.0.28 ~]# docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
lmcom/helloworld    latest      25fc249f6ce8  15 months ago 11.9MB
testcontainers/helloworld latest      6974669be52b  2 years ago   12.7MB
[root@192.168.0.28 ~]# docker run t
testcontainers/helloworld testcontainers/helloworld:latest
[root@192.168.0.28 ~]# docker run testcontainers/helloworld
2022/11/05 09:07:14 DELAY_START_MSRC: 0
2022/11/05 09:07:14 Sleeping for 0 ms
2022/11/05 09:07:14 Starting server on port 8080
2022/11/05 09:07:14 Sleeping for 0 ms
2022/11/05 09:07:14 Starting server on port 8081
2022/11/05 09:07:14 Ready, listening on 8080 and 8081
```

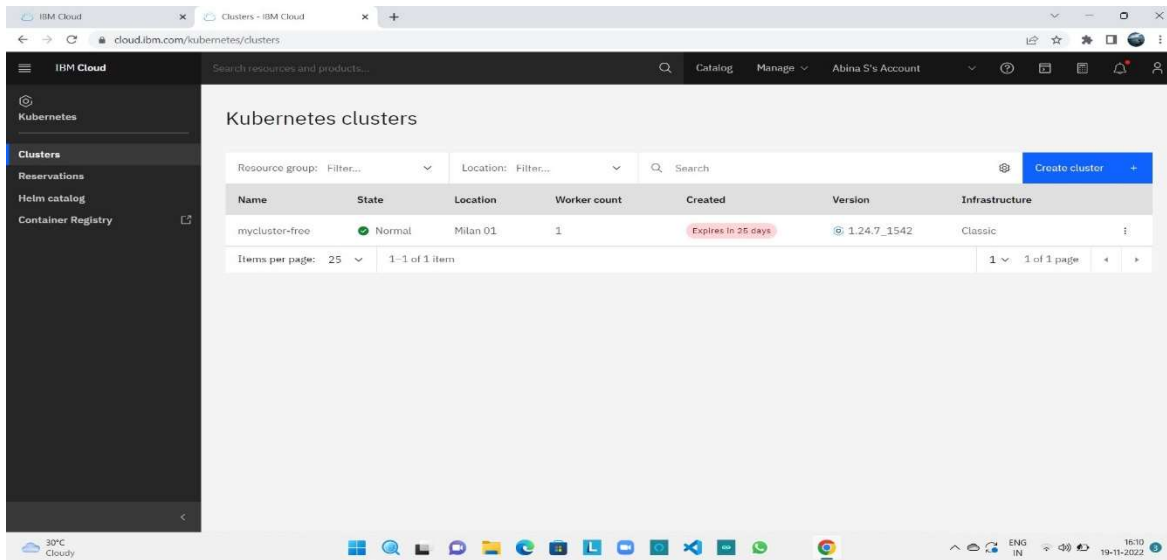
The screenshot shows the Docker Desktop interface. The left sidebar has a 'Containers' section with a 'BETA' tag. The main area is titled 'Containers' and shows a list of running containers. The status bar at the bottom indicates RAM 4.67GB, CPU 6.06%, and 'Connected to Hub'.

NAME	IMAGE	STATUS	PORT(S)	STARTED	ACTIONS
sam 571a3400ad56	nutrion/latest	Running	-	40 minutes ago	[Stop] [Restart] [Delete]
jobportal 7478aaf53b6	jobportal/latest	Running	-	18 seconds ago	[Stop] [Restart] [Delete]

2. Upload Image to IBM Container Registry.



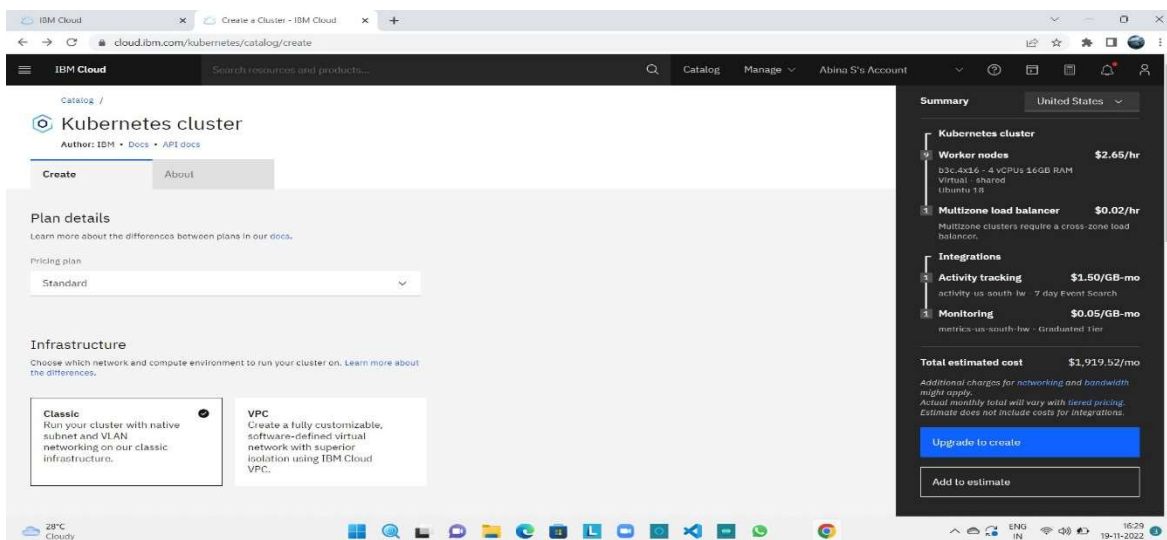
3. Deploy In Kubernetes Cluster.



The screenshot shows the IBM Cloud Clusters management page. The left sidebar contains navigation links for Kubernetes, Clusters, Reservations, Helm catalog, and Container Registry. The main content area displays a table of clusters with the following data:

Name	State	Location	Worker count	Created	Version	Infrastructure
mycluster-free	Normal	Milan 01	1	Expires in 25 days	1.24.7_1542	Classic

Below the table, there are filters for 'Items per page' (set to 25) and '1-1 of 1 item'. A 'Create cluster' button is visible in the top right corner.



The screenshot shows the 'Create a Cluster' page in the IBM Cloud console. The page is divided into two main sections: 'Plan details' and 'Infrastructure'.

Plan details: This section includes a 'Pricing plan' dropdown set to 'Standard' and a link to 'Learn more about the differences between plans in our docs.'

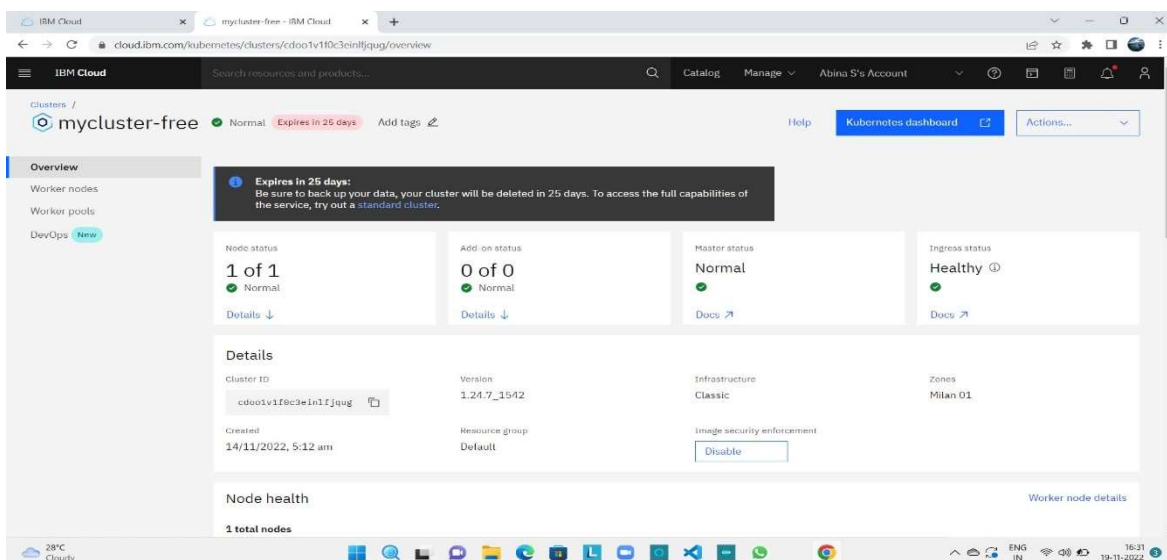
Infrastructure: This section allows users to choose between two infrastructure options:

- Classic:** Run your cluster with native subnet and VLAN networking on our classic infrastructure.
- VPC:** Create a fully customizable, software-defined virtual network with superior isolation using IBM Cloud VPC.

On the right side, a 'Summary' panel provides a cost breakdown for the 'United States' region:

- Worker nodes:** \$2.65/hr (B3C.4x16 - 4 vCPUs 16GB RAM, Virtual, shared Ubuntu 18)
- Multizone load balancer:** \$0.02/hr (Multizone clusters require a cross-zone load balancer)
- Integrations:**
 - Activity tracking:** \$1.50/GB-mo (activity us south-lw - 7 day Event Search)
 - Monitoring:** \$0.05/GB-mo (metrics-us-south-lw - Graduated tier)
- Total estimated cost:** \$1,919.52/mo

Additional notes mention that additional charges for networking and bandwidth might apply, and that the actual monthly total will vary with billed pricing. The estimate does not include costs for integrations. Two buttons are present: 'Upgrade to create' and 'Add to estimate'.



The screenshot shows the 'Overview' page for a specific cluster named 'mycluster-free'. The page includes a warning banner stating: 'Expires in 25 days: Be sure to back up your data, your cluster will be deleted in 25 days. To access the full capabilities of the service, try out a standard cluster.'

The 'Overview' section displays several status indicators:

- Node status:** 1 of 1 Normal
- Add on status:** 0 of 0 Normal
- Master status:** Normal
- Ingress status:** Healthy

Below these indicators, a 'Details' section provides information about the cluster:

- Cluster ID:** cdoov1f8c3e1n1fjqug
- Version:** 1.24.7_1542
- Infrastructure:** Classic
- Zones:** Milan 01
- Created:** 14/11/2022, 5:12 am
- Resource group:** Default
- Image security enforcement:** Disable

A 'Node health' section at the bottom indicates '1 total nodes'.

