BCDV 4032 – Building scalable blockchain applications.

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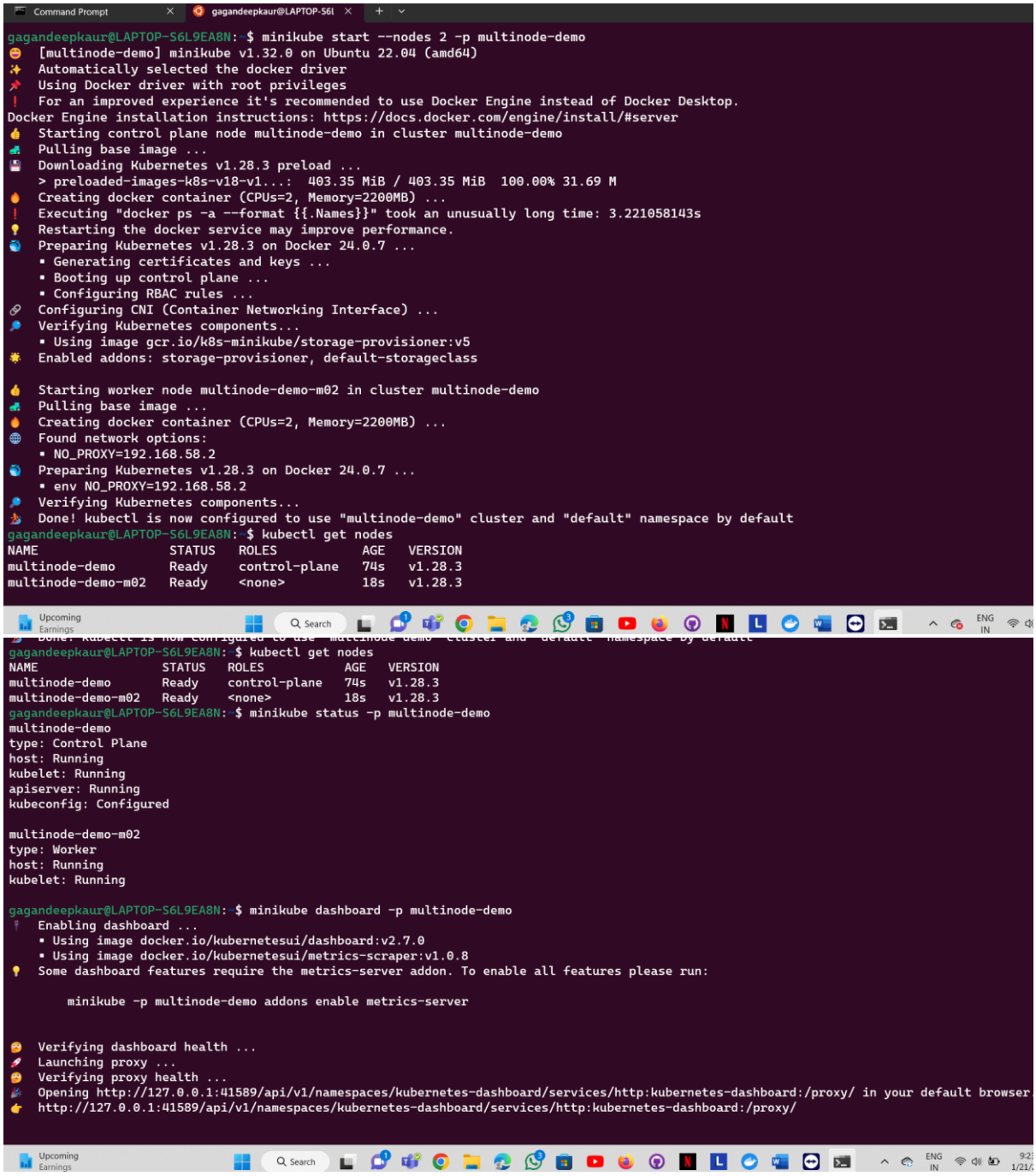
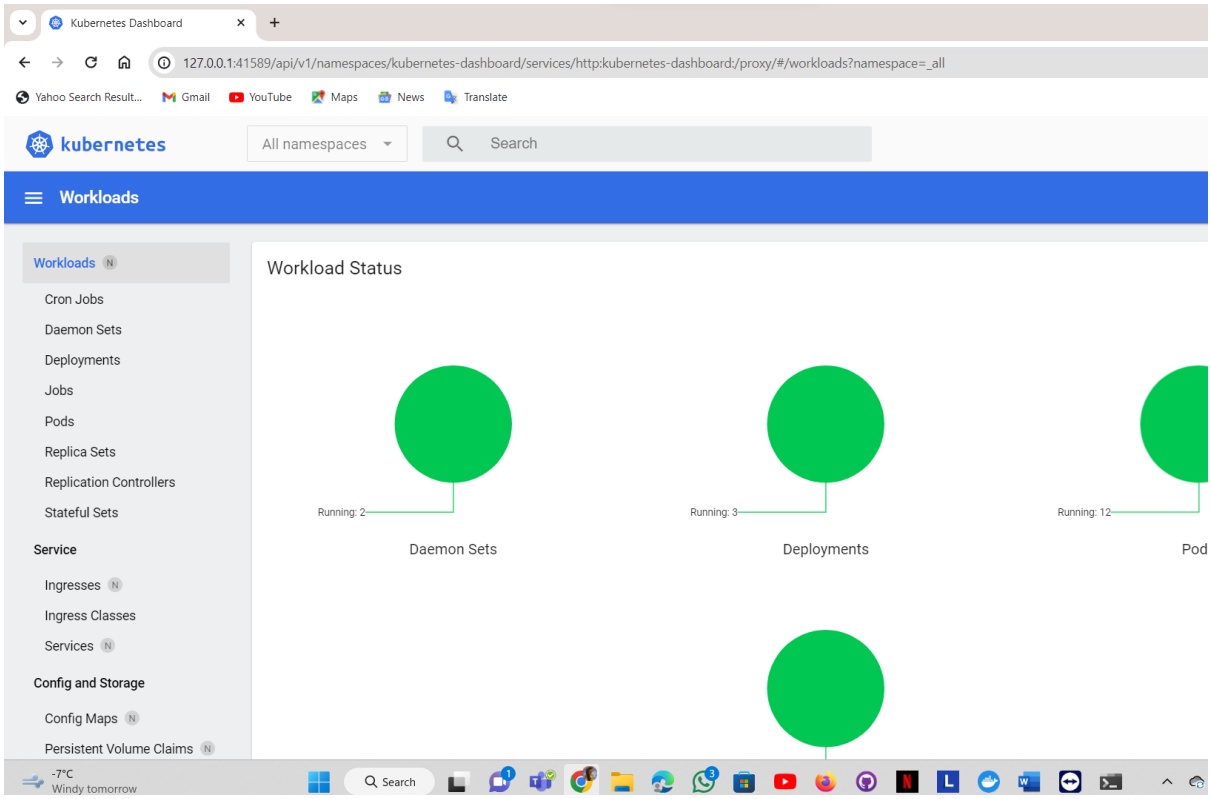
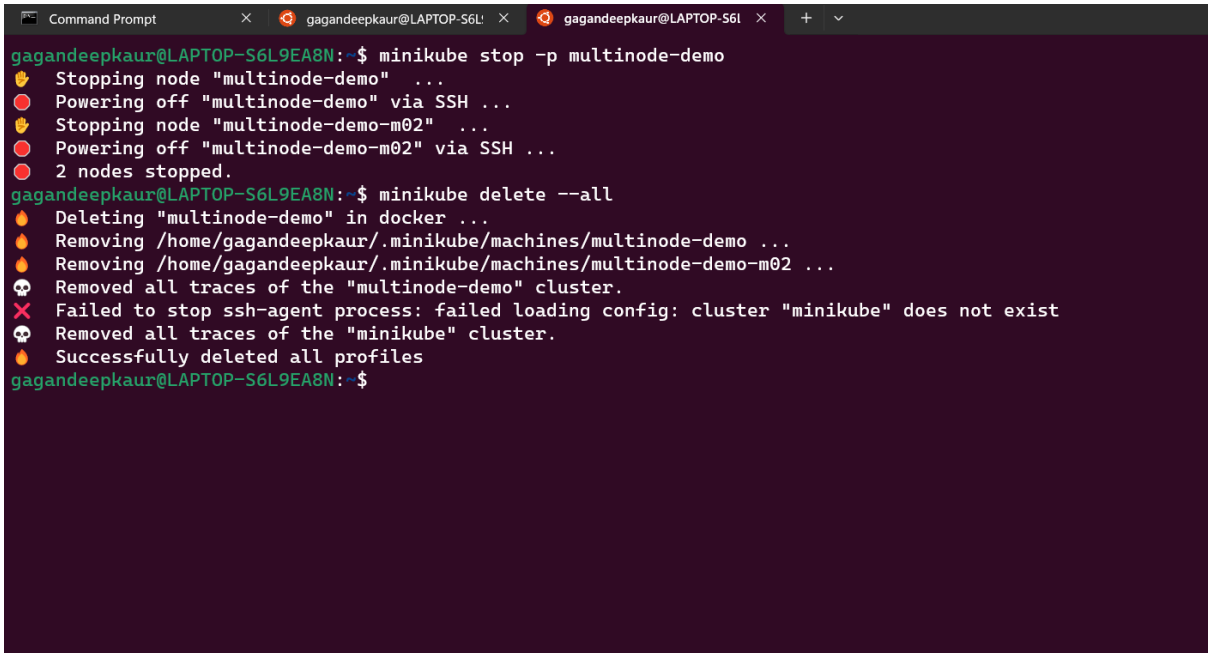
Lab3 screenshots




Kubernetes Dashboard
127.0.0.1:41589/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/workloads?namespace=_all
Yahoo Search Result...
Gmail
YouTube
Maps
News
Translate
kubernetes
All namespaces
Search
Workloads
Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses
Ingress Classes
Services
Config and Storage
Config Maps
Persistent Volume Claims
Workload Status
Running: 2
Daemon Sets
Running: 3
Deployments
Running: 12
Pod
-7°C
Windy tomorrow
Search


Command Prompt
gagandeepkaur@LAPTOP-S6L
gagandeepkaur@LAPTOP-S6L
gagandeepkaur@LAPTOP-S6L9EA8N:~$ minikube stop -p multinode-demo
Stopping node "multinode-demo" ...
Powering off "multinode-demo" via SSH ...
Stopping node "multinode-demo-m02" ...
Powering off "multinode-demo-m02" via SSH ...
2 nodes stopped.
gagandeepkaur@LAPTOP-S6L9EA8N:~$ minikube delete --all
Deleting "multinode-demo" in docker ...
Removing /home/gagandeepkaur/.minikube/machines/multinode-demo ...
Removing /home/gagandeepkaur/.minikube/machines/multinode-demo-m02 ...
Removed all traces of the "multinode-demo" cluster.
Failed to stop ssh-agent process: failed loading config: cluster "minikube" does not exist
Removed all traces of the "minikube" cluster.
Successfully deleted all profiles
gagandeepkaur@LAPTOP-S6L9EA8N:~$

```
gagandeepkaur@LAPTOP-S6L9EA8N:~$ minikube start
😄  minikube v1.32.0 on Ubuntu 22.04 (amd64)
✨  Automatically selected the docker driver
📌  Using Docker driver with root privileges
❗  For an improved experience it's recommended to use Docker Engine instead of Docker Desktop.
Docker Engine installation instructions: https://docs.docker.com/engine/install/#server
👍  Starting control plane node minikube in cluster minikube
🚜  Pulling base image ...
🔥  Creating docker container (CPUs=2, Memory=2200MB) ...
❗  Executing "docker ps -a --format {{.Names}}" took an unusually long time: 3.133457314s
💡  Restarting the docker service may improve performance.
🐳  Preparing Kubernetes v1.28.3 on Docker 24.0.7 ...
    ▪ Generating certificates and keys ...
    ▪ Booting up control plane ...
    ▪ Configuring RBAC rules ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: storage-provisioner, default-storageclass
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f replicaset.yaml
replicaset.apps/nginx created
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-6d6gk   1/1     Running   0          91s
nginx-fqnrc   1/1     Running   0          91s
nginx-mcvj8   1/1     Running   0          92s
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl delete pod nginx-fqnrc
pod "nginx-fqnrc" deleted
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-6d6gk   1/1     Running   0          114s
nginx-cq97q   1/1     Running   0          4s
nginx-mcvj8   1/1     Running   0          115s
gagandeepkaur@LAPTOP-S6L9EA8N:~$
```

```
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get replicasets
NAME                          DESIRED   CURRENT   READY   AGE
nginx                         0         0         0       5m28s
nginx-deployment-86dcfdf4c6   3         3         3       119s
gagandeepkaur@LAPTOP-S6L9EA8N:~$
```

```
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f deployment.yaml
deployment.apps/nginx-deployment created
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           27s
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl rollout status deployment nginx-deployment
deployment "nginx-deployment" successfully rolled out
```

```
deployment "nginx-deployment" successfully rolled out
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get replicasets
NAME                          DESIRED   CURRENT   READY   AGE
nginx                         0         0         0       5m28s
nginx-deployment-86dcfdf4c6   3         3         3       119s
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f statefulset.yaml
service/nginx created
statefulset.apps/web created
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get statefulsets
NAME   READY   AGE
web    0/3     35s
gagandeepkaur@LAPTOP-S6L9EA8N:~$
```

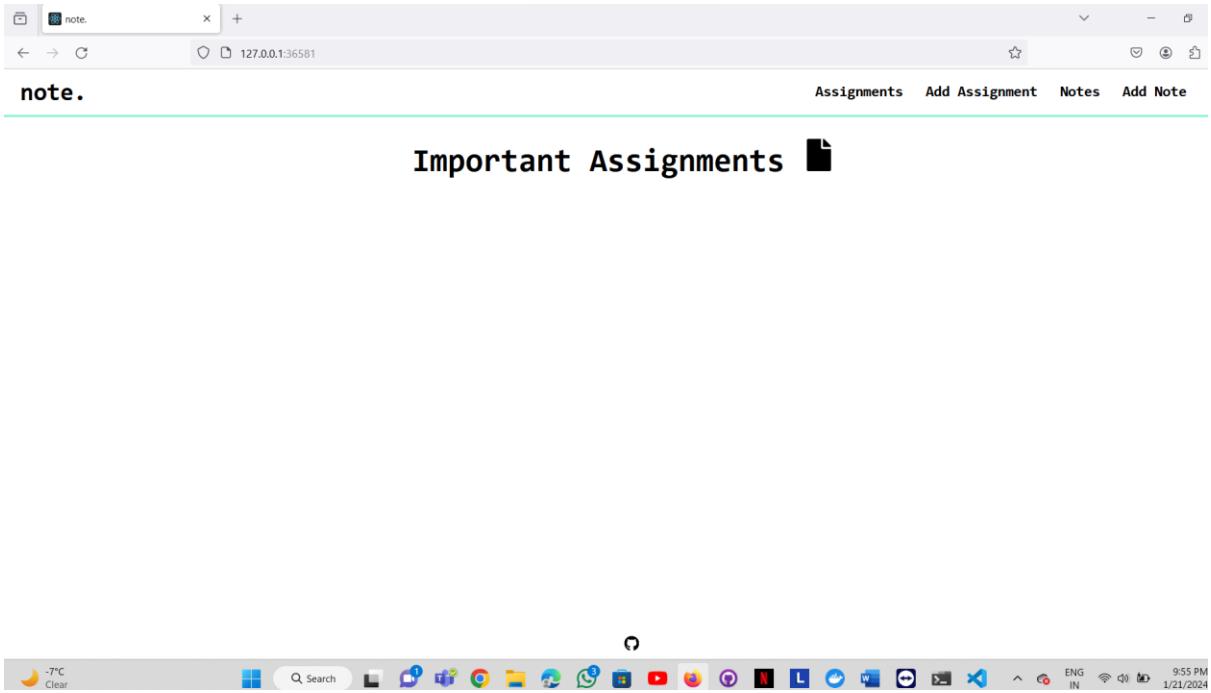
```
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f daemonset.yaml
daemonset.apps/nginx created
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get daemonset
NAME    DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
nginx   1         1         1       1            1           <none>          23s
```

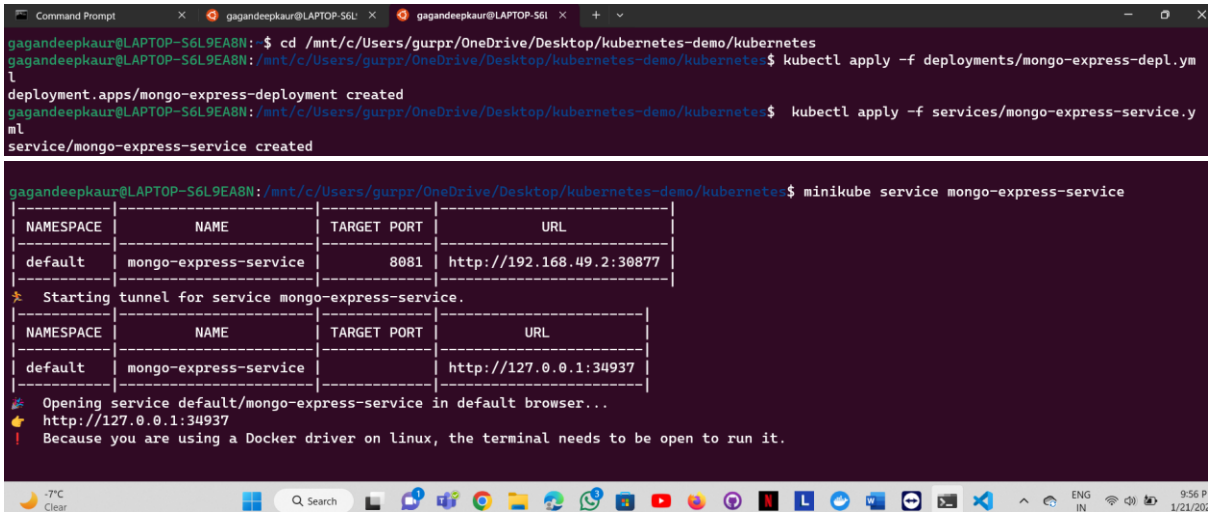
```
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f deploymentResourceLimit.yaml
deployment.apps/nginx-deployment configured
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           7m42s
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl apply -f deploymentHealthCheck.yaml
deployment.apps/nginx-deployment configured
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get deployments
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     1            3           8m12s
gagandeepkaur@LAPTOP-S6L9EA8N:~$
```

Kubernetes demo

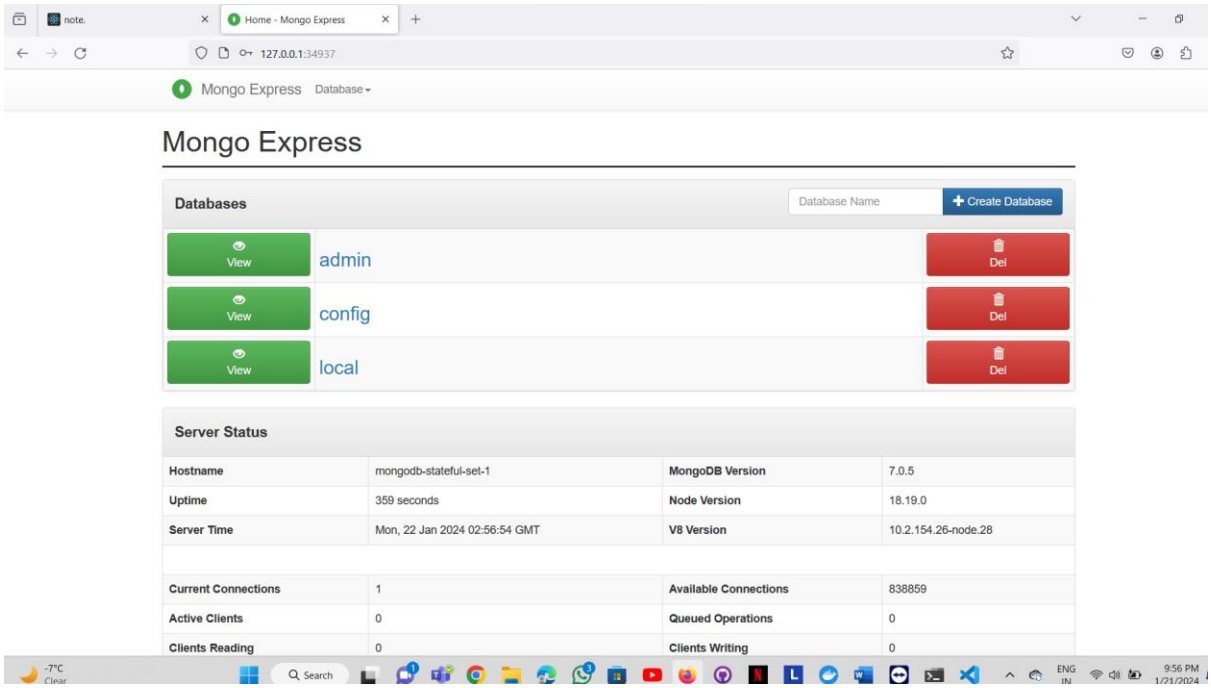
```
Command Prompt
gagandeepkaur@LAPTOP-S6L9EA8N:~$ cd /mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f secrets/mongodb-secret.yml
secret/mongodb-secret created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f stateful-sets/mongodb-stateful-se
t.yml
statefulset.apps/mongodb-stateful-set created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f services/mongodb-service.yml
service/mongodb-service created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f deployments/note-server-depl.yml
deployment.apps/note-server-deployment created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$  kubectl apply -f services/note-server-service.yml
service/note-server-service created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$  kubectl apply -f deployments/note-depl.yml
deployment.apps/note-deployment created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f services/note-service.yml
service/note-service created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ minikube service note-service
```

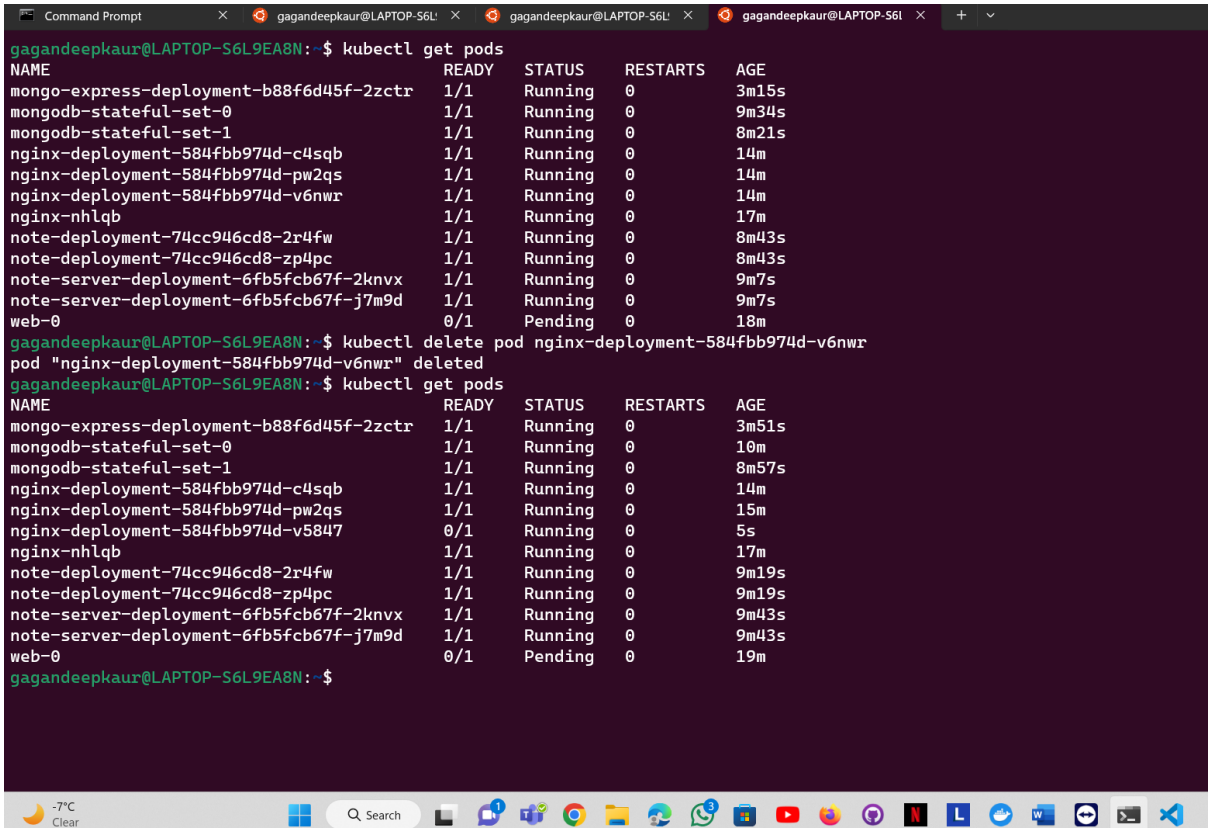
```
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ minikube service note-service
|-----------|--------------|-------------|-------------------------|
| NAMESPACE |     NAME     | TARGET PORT |           URL           |
|-----------|--------------|-------------|-------------------------|
| default   | note-service |        3000 | http://192.168.49.2:31211 |
|-----------|--------------|-------------|-------------------------|
🏃  Starting tunnel for service note-service.
|-----------|--------------|-------------|------------------------|
| NAMESPACE |     NAME     | TARGET PORT |          URL           |
|-----------|--------------|-------------|------------------------|
| default   | note-service |             | http://127.0.0.1:36581 |
|-----------|--------------|-------------|------------------------|
🎉  Opening service default/note-service in default browser...
👉  http://127.0.0.1:36581
❗  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```


note.
127.0.0.1:36581
note.
Assignments
Add Assignment
Notes
Add Note
Important Assignments


Command Prompt
gagandeepkaur@LAPTOP-S6L9EA8N:~$ cd /mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f deployments/mongo-express-depl.yml
deployment.apps/mongo-express-deployment created
gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ kubectl apply -f services/mongo-express-service.yml
service/mongo-express-service created

gagandeepkaur@LAPTOP-S6L9EA8N:/mnt/c/Users/gurpr/OneDrive/Desktop/kubernetes-demo/kubernetes$ minikube service mongo-express-service
| NAMESPACE | NAME | TARGET PORT | URL |
| default | mongo-express-service | 8081 | http://192.168.49.2:30877 |
Starting tunnel for service mongo-express-service.
| NAMESPACE | NAME | TARGET PORT | URL |
| default | mongo-express-service | | http://127.0.0.1:34937 |
Opening service default/mongo-express-service in default browser...
http://127.0.0.1:34937
Because you are using a Docker driver on linux, the terminal needs to be open to run it.


note.
Home - Mongo Express
127.0.0.1:34937
Mongo Express
Database
Mongo Express
Databases
Database Name
Create Database
View
admin
Del
View
config
Del
View
local
Del
Server Status
Hostname
mongodb-stateful-set-1
MongoDB Version
7.0.5
Uptime
359 seconds
Node Version
18.19.0
Server Time
Mon, 22 Jan 2024 02:56:54 GMT
V8 Version
10.2.154.26-node.28
Current Connections
1
Available Connections
838859
Active Clients
0
Queued Operations
0
Clients Reading
0
Clients Writing
0
-7°C
Clear
Search
ENG
IN
9:56 PM
1/21/2024


Command Prompt
gagandeepkaur@LAPTOP-S6L
gagandeepkaur@LAPTOP-S6L
gagandeepkaur@LAPTOP-S6l
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
mongo-express-deployment-b88f6d45f-2zctr 1/1 Running 0 3m15s
mongodb-stateful-set-0 1/1 Running 0 9m34s
mongodb-stateful-set-1 1/1 Running 0 8m21s
nginx-deployment-584fbb974d-c4sqb 1/1 Running 0 14m
nginx-deployment-584fbb974d-pw2qs 1/1 Running 0 14m
nginx-deployment-584fbb974d-v6nwr 1/1 Running 0 14m
nginx-nhlqb 1/1 Running 0 17m
note-deployment-74cc946cd8-2r4fw 1/1 Running 0 8m43s
note-deployment-74cc946cd8-zp4pc 1/1 Running 0 8m43s
note-server-deployment-6fb5fcb67f-2knvx 1/1 Running 0 9m7s
note-server-deployment-6fb5fcb67f-j7m9d 1/1 Running 0 9m7s
web-0 0/1 Pending 0 18m
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl delete pod nginx-deployment-584fbb974d-v6nwr
pod "nginx-deployment-584fbb974d-v6nwr" deleted
gagandeepkaur@LAPTOP-S6L9EA8N:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
mongo-express-deployment-b88f6d45f-2zctr 1/1 Running 0 3m51s
mongodb-stateful-set-0 1/1 Running 0 10m
mongodb-stateful-set-1 1/1 Running 0 8m57s
nginx-deployment-584fbb974d-c4sqb 1/1 Running 0 14m
nginx-deployment-584fbb974d-pw2qs 1/1 Running 0 15m
nginx-deployment-584fbb974d-v5847 0/1 Running 0 5s
nginx-nhlqb 1/1 Running 0 17m
note-deployment-74cc946cd8-2r4fw 1/1 Running 0 9m19s
note-deployment-74cc946cd8-zp4pc 1/1 Running 0 9m19s
note-server-deployment-6fb5fcb67f-2knvx 1/1 Running 0 9m43s
note-server-deployment-6fb5fcb67f-j7m9d 1/1 Running 0 9m43s
web-0 0/1 Pending 0 19m
gagandeepkaur@LAPTOP-S6L9EA8N:~$
-7°C
Clear
Search