Cloud Computing Assignment: Flask + MongoDB on Docker, Minikube, EKS with Monitoring & Alerts

Abstract

This report documents the complete lifecycle of deploying a Flask + MongoDB To-Do application using Docker, Kubernetes (Minikube and AWS EKS), implementing health probes, rolling updates, autoscaling, and setting up Prometheus-Alertmanager with Slack notification. The deployment journey, debugging steps, commands, and screenshots are provided.

Objectives

- Containerize a Flask + MongoDB app

- Run locally using Docker Compose

- Deploy on Minikube and AWS EKS

- Configure ReplicaSets, scaling, rolling updates

- Add liveness/readiness probes

- Implement HPA

- Setup Prometheus & Alertmanager

- Integrate Slack alerts

- Troubleshoot and validate reliability

Tech Stack

Docker, Docker Hub, Kubernetes, Minikube, AWS EKS, Flask, MongoDB, Prometheus, Alertmanager, Slack, BusyBox load-generator

Docker Containerization

Built Dockerfile & docker-compose to run Flask + MongoDB locally.

Verified CRUD in Mongo and UI in browser.

Pushed image to DockerHub.

Minikube Deployment

Deployed app to Minikube using YAML files:

Deployment, Service, Probes, HPA.

Verified pods, services, scaling, recovery.

AWS EKS Deployment

Provisioned EKS cluster, deployed app, accessed via LoadBalancer endpoint.

Scaling & ReplicaSets

Deleted pods & saw auto-healing.

Scaled replicas manually & using HPA.

Rolling Updates

Updated image tag → rolling replacement of pods verified.

Liveness & Readiness Probes

Configured HTTP GET probes, tested failure & restart behavior.

Prometheus & Alertmanager Setup

Installed kube-prometheus-stack.

Verified alert rules, port-forwarding for web UI.

Slack Integration

Created Secret + AlertmanagerConfig CRD.

Received actual alerts in Slack.

Troubleshooting Journey

Faced:

- ImagePullBackOff

- Metrics missing for HPA

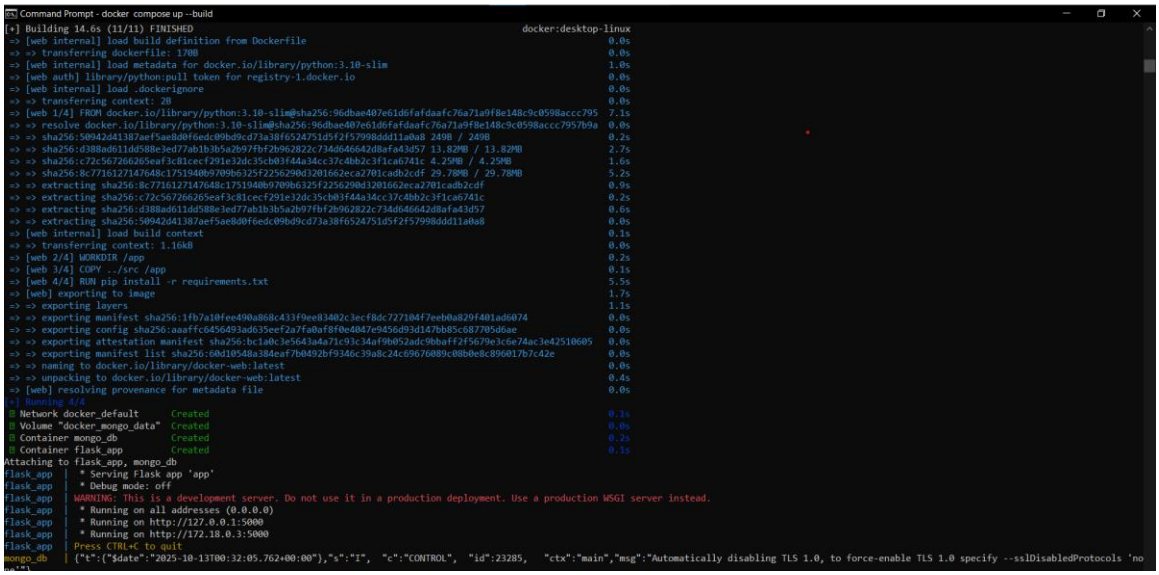
- Probes failing

- Alertmanager config overridden by operator

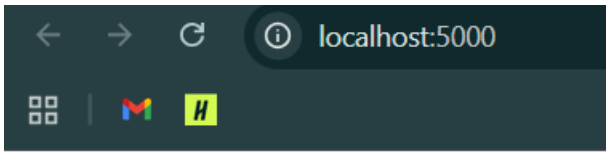
Solved via pushing correct image, patching metrics-server, adjusting probe delays, and using AlertmanagerConfig CRD with secret.

Conclusion

We successfully containerized and deployed a distributed Flask + MongoDB system with resilience, observability, scaling, and alerting. The system auto-heals, scales based on CPU load, and sends Slack alerts for failures.



Screenshot 1 Docker Compose Build Output (Terminal)

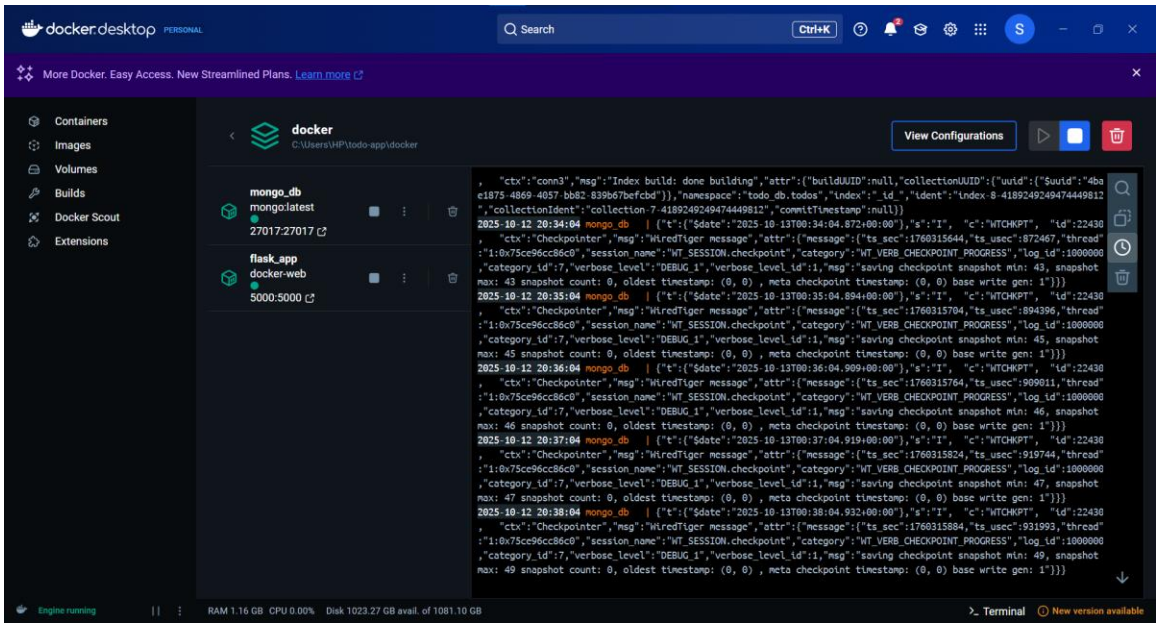


My To-Do List

New task Add

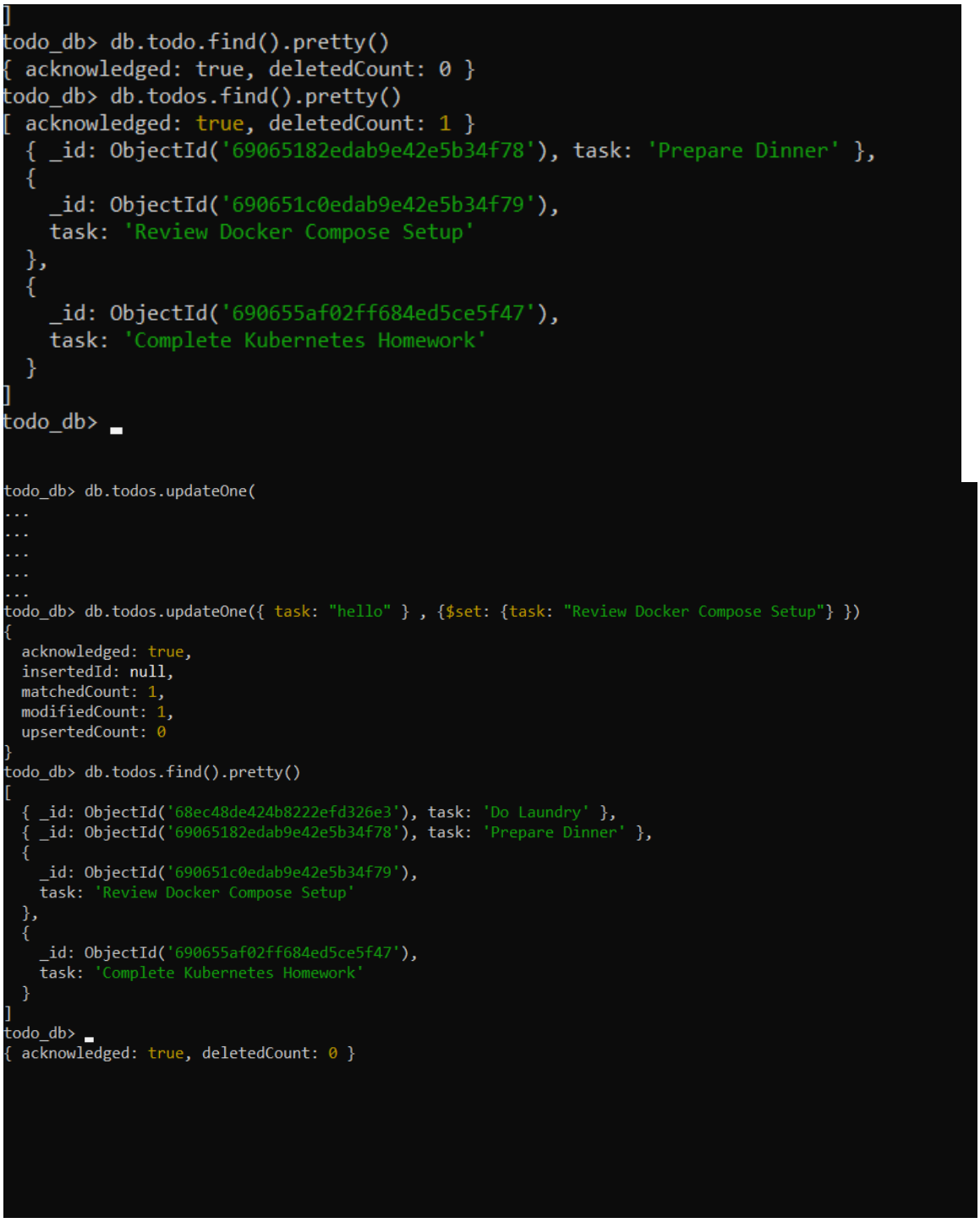
- Do Laundry

Screenshot 2 Running Flask Web App (Browser) Local Host

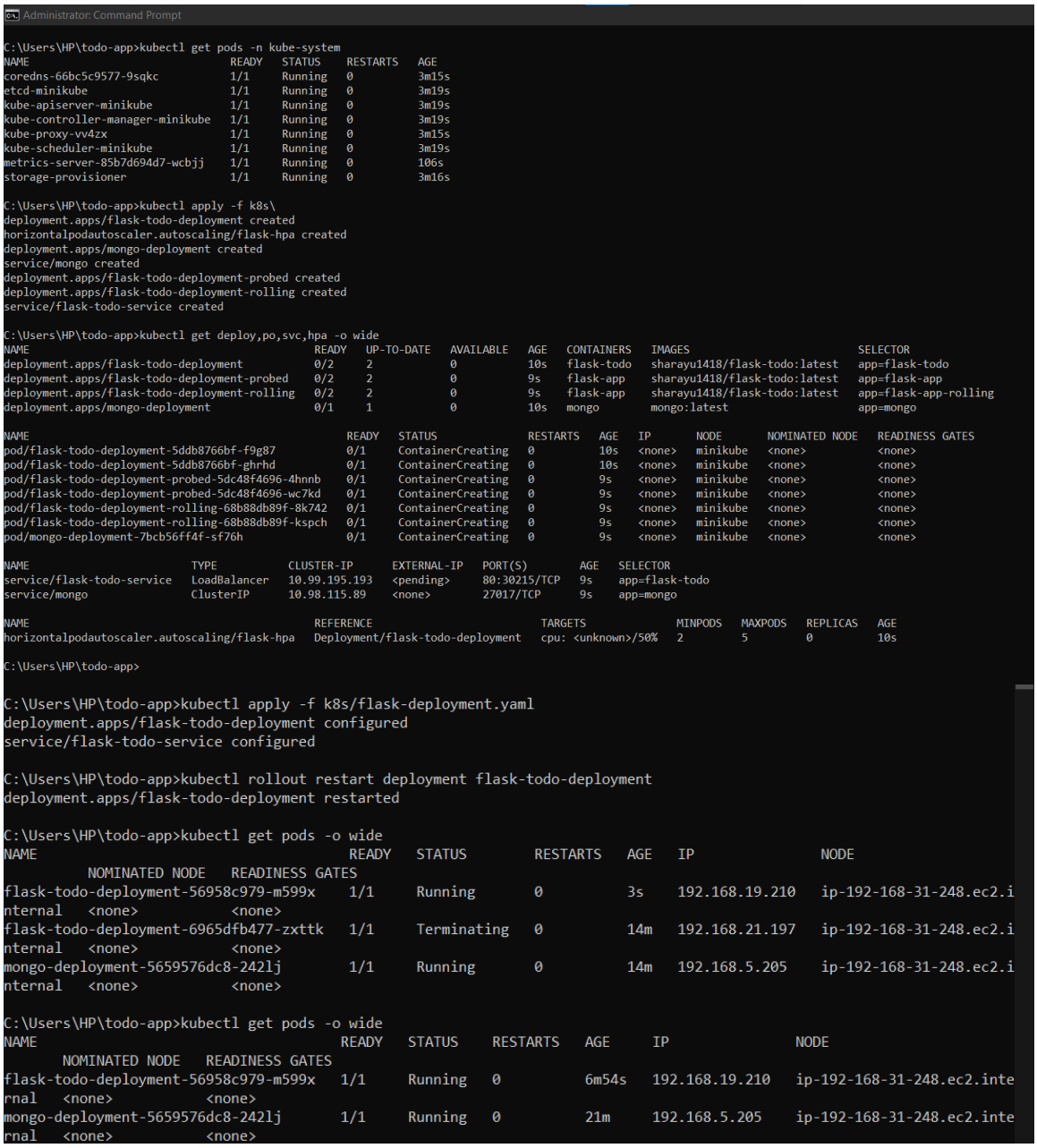


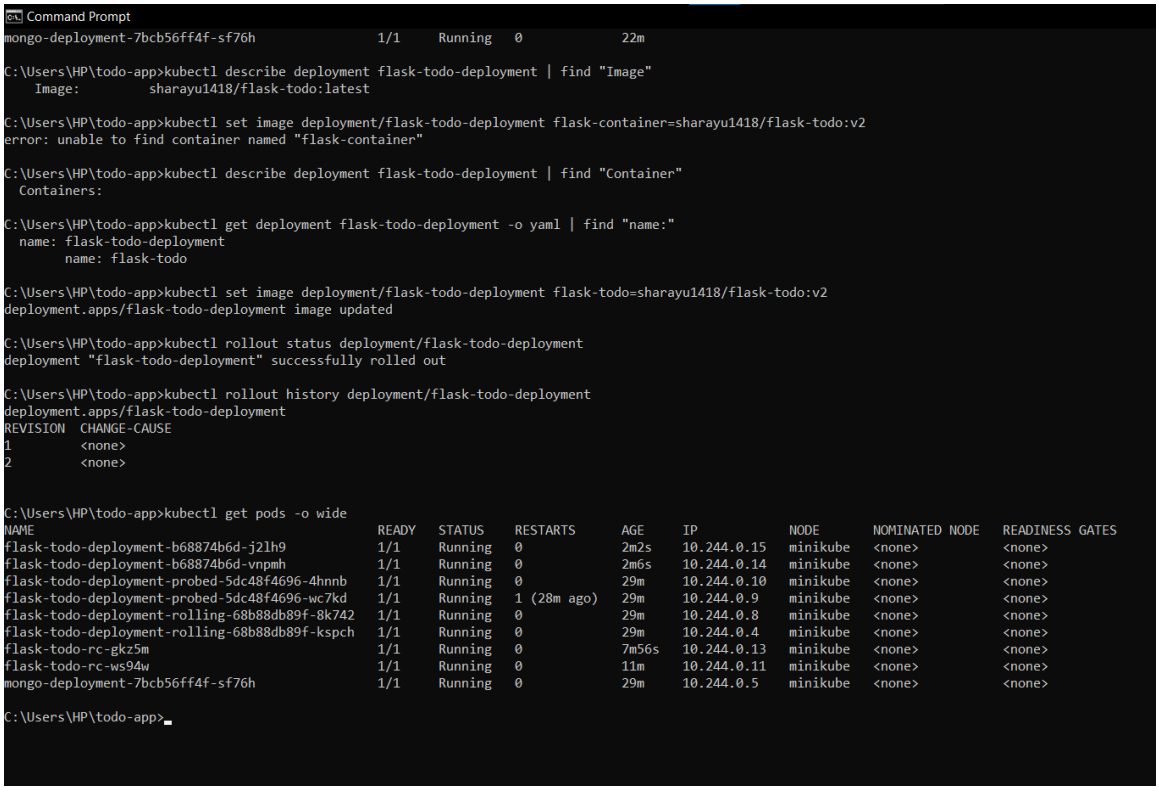
Screenshot 3 Docker Desktop Container View

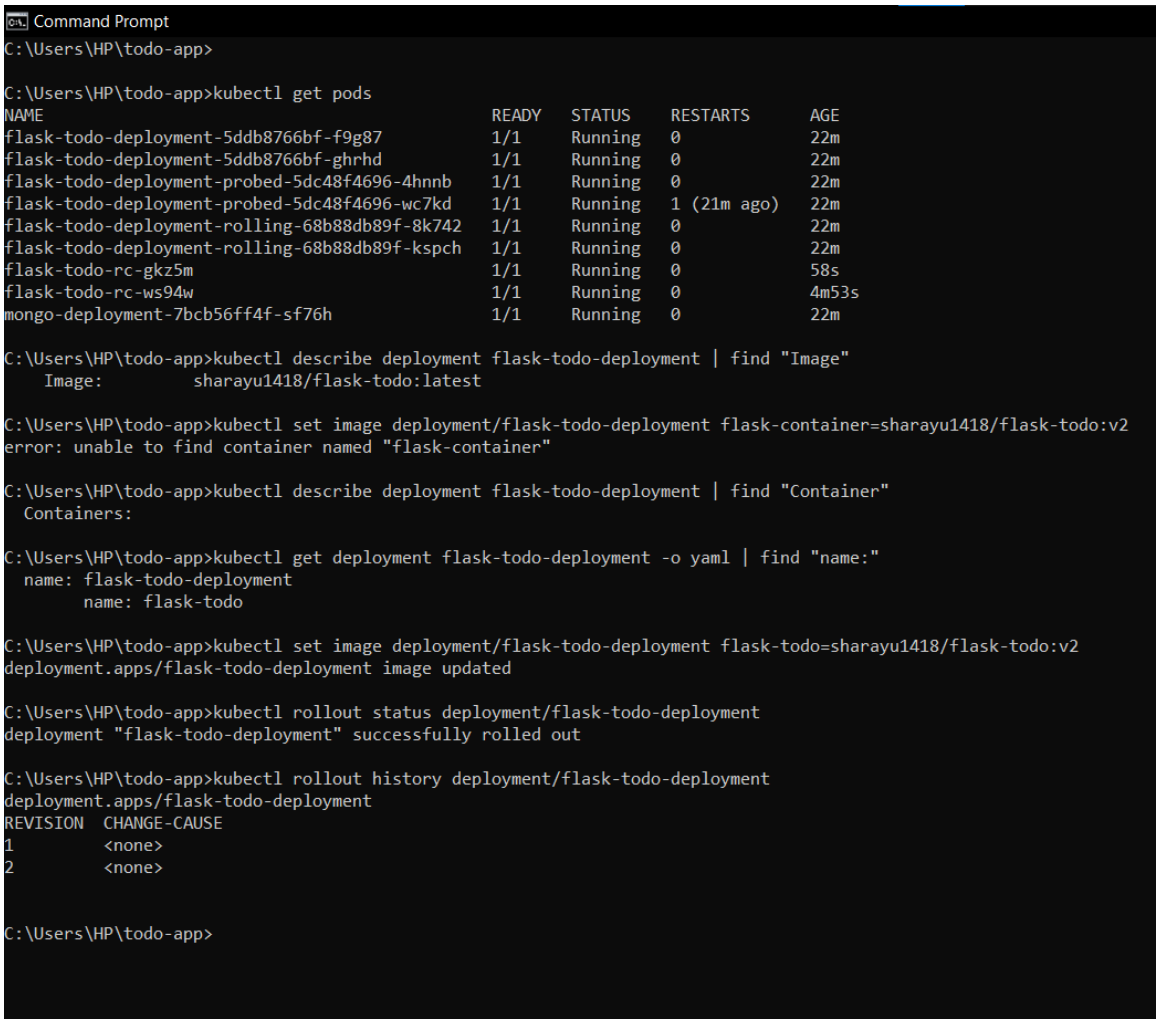
```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000
  { _id: ObjectId('68ec48de424b8222efd326e3'), task: 'Do Laundry' },
  { _id: ObjectId('69065182edab9e42e5b34f78'), task: 'Prepare Dinner' },
  { _id: ObjectId('690651c0edab9e42e5b34f79'), task: 'hello' }
]
todo_db> db.todos.insertOne({ task: "Complete Kubernetes Homework"})
{
  acknowledged: true,
  insertedId: ObjectId('690655af02ff684ed5ce5f47')
}
todo_db> db.todos.find().pretty()
[
  { _id: ObjectId('68ec48de424b8222efd326e3'), task: 'Do Laundry' },
  { _id: ObjectId('69065182edab9e42e5b34f78'), task: 'Prepare Dinner' },
  { _id: ObjectId('690651c0edab9e42e5b34f79'), task: 'hello' },
  {
    _id: ObjectId('690655af02ff684ed5ce5f47'),
    task: 'Complete Kubernetes Homework'
  }
]
todo_db> db.todos.updateOne(
...
...
...
...
...
todo_db> db.todos.updateOne({ task: "hello" } , {$set: {task: "Review Docker Compose Setup"} })
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
todo_db> db.todos.find().pretty()
[
  { _id: ObjectId('68ec48de424b8222efd326e3'), task: 'Do Laundry' },
  { _id: ObjectId('69065182edab9e42e5b34f78'), task: 'Prepare Dinner' },
  {
    _id: ObjectId('690651c0edab9e42e5b34f79'),
    task: 'Review Docker Compose Setup'
  },
  {
    _id: ObjectId('690655af02ff684ed5ce5f47'),
    task: 'Complete Kubernetes Homework'
  }
]
todo_db>
```

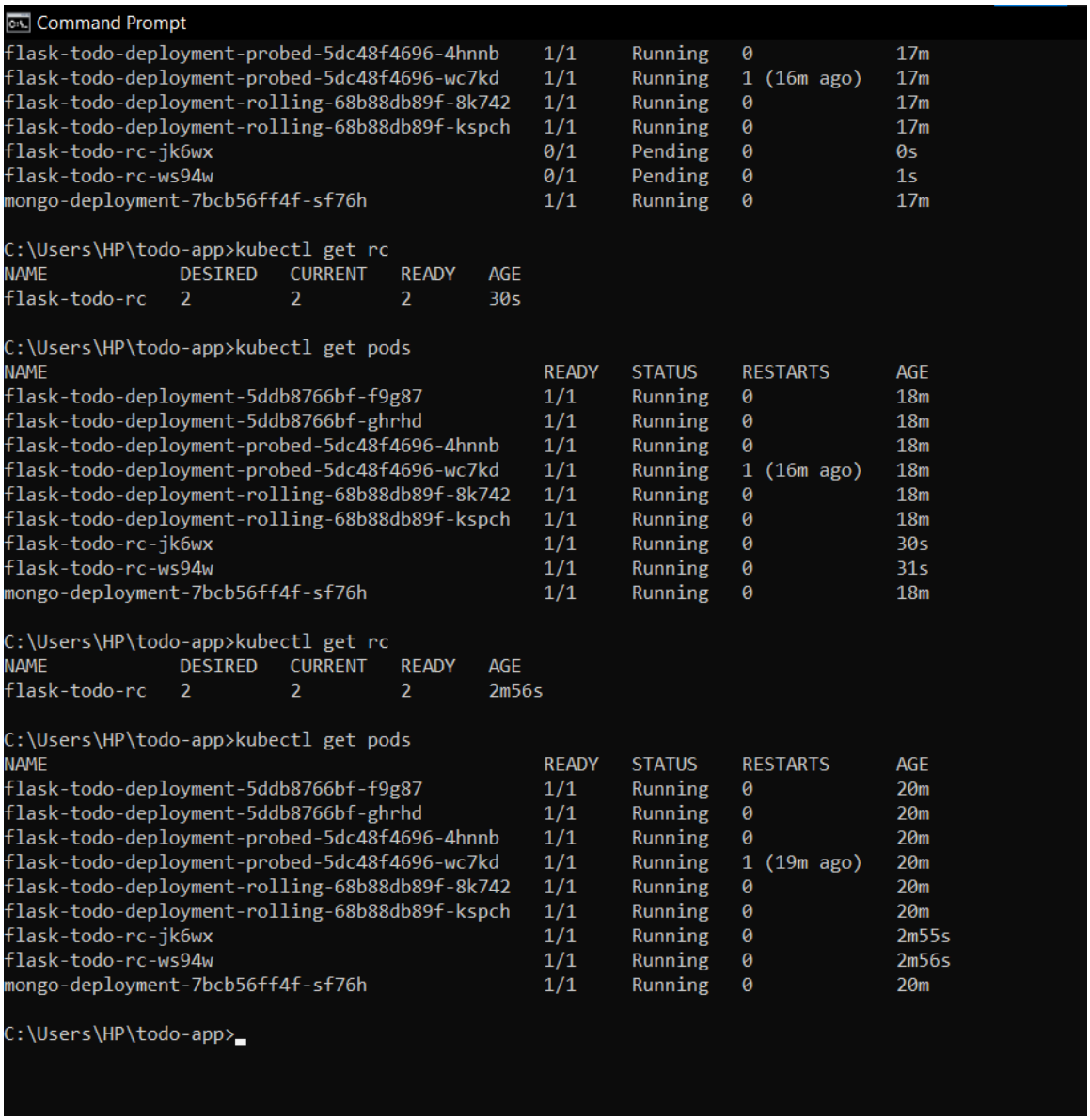


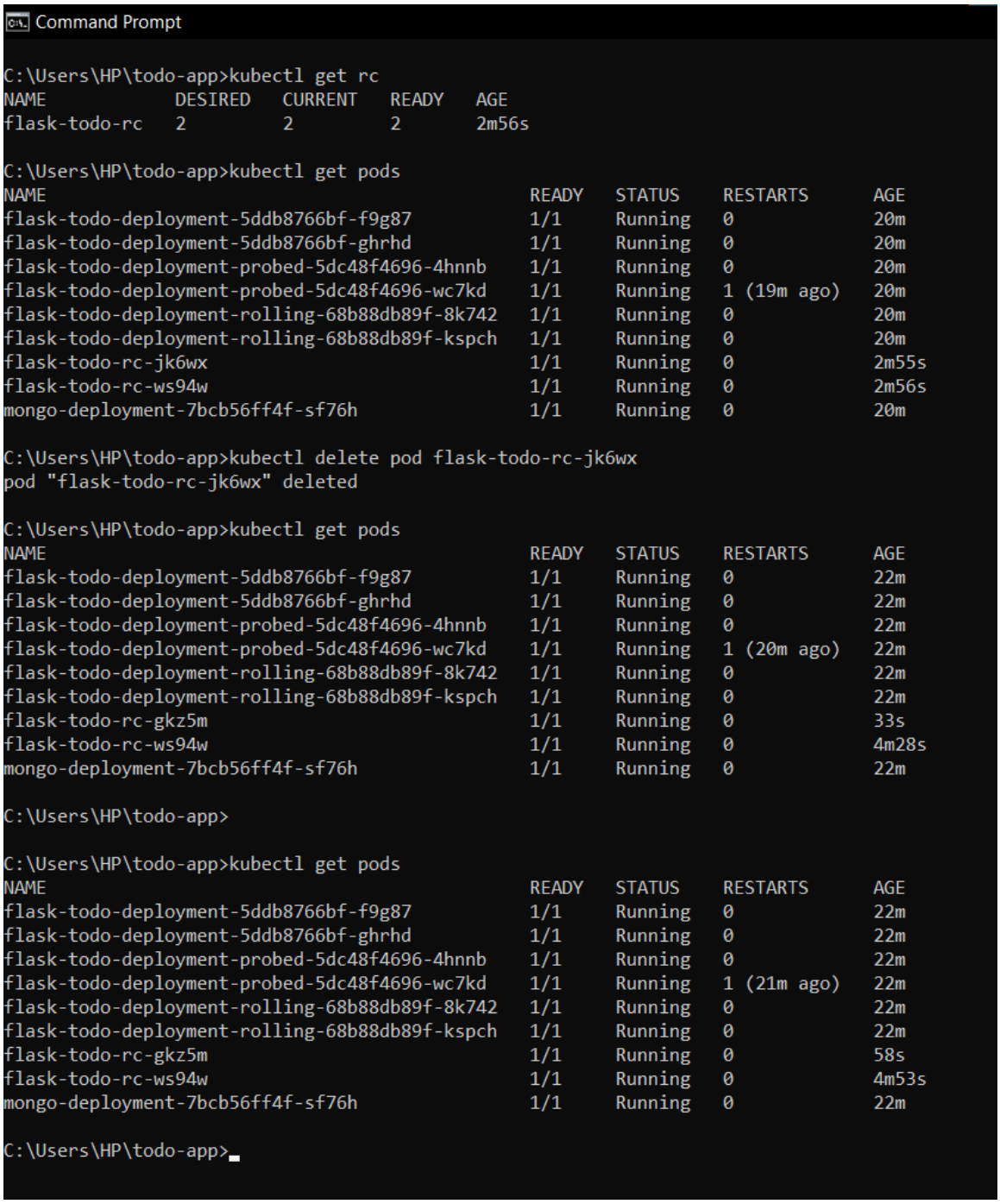
MongoDB CRUD Operations


Administrator: Command Prompt
C:\Users\HP\todo-app>kubectl get pods -n kube-system
NAME READY STATUS RESTARTS AGE
coredns-66bc5c9577-9sqkc 1/1 Running 0 3m15s
etcd-minikube 1/1 Running 0 3m19s
kube-apiserver-minikube 1/1 Running 0 3m19s
kube-controller-manager-minikube 1/1 Running 0 3m19s
kube-proxy-vv4zx 1/1 Running 0 3m15s
kube-scheduler-minikube 1/1 Running 0 3m19s
metrics-server-85b7d694d7-wcbjj 1/1 Running 0 106s
storage-provisioner 1/1 Running 0 3m16s
C:\Users\HP\todo-app>kubectl apply -f k8s\
deployment.apps/flask-todo-deployment created
horizontalpodautoscaler.autoscaling/flask-hpa created
deployment.apps/mongo-deployment created
service/mongo created
deployment.apps/flask-todo-deployment-probed created
deployment.apps/flask-todo-deployment-rolling created
service/flask-todo-service created
C:\Users\HP\todo-app>kubectl get deploy,po,svc,hpa -o wide
NAME READY UP-TO-DATE AVAILABLE AGE CONTAINERS IMAGES SELECTOR
deployment.apps/flask-todo-deployment 0/2 2 0 10s flask-todo sharayu1418/flask-todo:latest app=flask-todo
deployment.apps/flask-todo-deployment-probed 0/2 2 0 9s flask-app sharayu1418/flask-todo:latest app=flask-app
deployment.apps/flask-todo-deployment-rolling 0/2 2 0 9s flask-app sharayu1418/flask-todo:latest app=flask-app-rolling
deployment.apps/mongo-deployment 0/1 1 0 10s mongo mongo:latest app=mongo
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
pod/flask-todo-deployment-5ddb8766bf-f9g87 0/1 ContainerCreating 0 10s <none> minikube <none> <none>
pod/flask-todo-deployment-5ddb8766bf-ghrhd 0/1 ContainerCreating 0 10s <none> minikube <none> <none>
pod/flask-todo-deployment-probed-5dc48f4696-4hnnb 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-probed-5dc48f4696-wc7kd 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-rolling-68b88db89f-8k742 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-rolling-68b88db89f-kspch 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/mongo-deployment-7bcb56ff4f-sf76h 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE SELECTOR
service/flask-todo-service LoadBalancer 10.99.195.193 <pending> 80:30215/TCP 9s app=flask-todo
service/mongo ClusterIP 10.98.115.89 <none> 27017/TCP 9s app=mongo
NAME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
horizontalpodautoscaler.autoscaling/flask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 0 10s
C:\Users\HP\todo-app>
C:\Users\HP\todo-app>kubectl apply -f k8s/flask-deployment.yaml
deployment.apps/flask-todo-deployment configured
service/flask-todo-service configured
C:\Users\HP\todo-app>kubectl rollout restart deployment flask-todo-deployment
deployment.apps/flask-todo-deployment restarted
C:\Users\HP\todo-app>kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE
NOMINATED NODE READINESS GATES
flask-todo-deployment-56958c979-m599x 1/1 Running 0 3s 192.168.19.210 ip-192-168-31-248.ec2.i
nternal <none> <none>
flask-todo-deployment-6965dfb477-zxttk 1/1 Terminating 0 14m 192.168.21.197 ip-192-168-31-248.ec2.i
nternal <none> <none>
mongo-deployment-5659576dc8-242lj 1/1 Running 0 14m 192.168.5.205 ip-192-168-31-248.ec2.i
nternal <none> <none>
C:\Users\HP\todo-app>kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE
NOMINATED NODE READINESS GATES
flask-todo-deployment-56958c979-m599x 1/1 Running 0 6m54s 192.168.19.210 ip-192-168-31-248.ec2.inte
rnal <none> <none>
mongo-deployment-5659576dc8-242lj 1/1 Running 0 21m 192.168.5.205 ip-192-168-31-248.ec2.inte
rnal <none> <none>

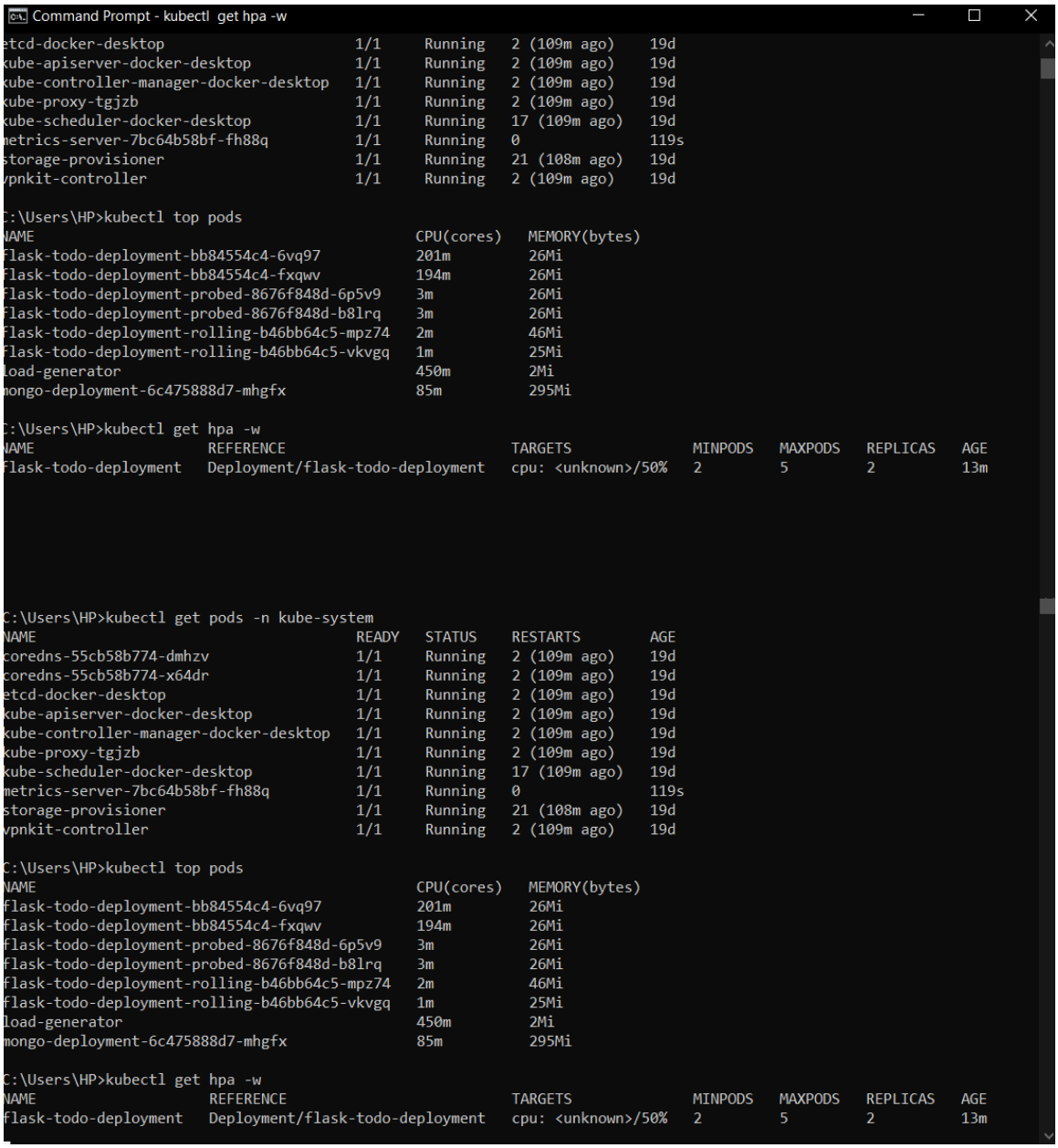

Command Prompt
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 22m
C:\Users\HP\todo-app>kubectl describe deployment flask-todo-deployment | find "Image"
Image: sharayu1418/flask-todo:latest
C:\Users\HP\todo-app>kubectl set image deployment/flask-todo-deployment flask-container=sharayu1418/flask-todo:v2
error: unable to find container named "flask-container"
C:\Users\HP\todo-app>kubectl describe deployment flask-todo-deployment | find "Container"
Containers:
C:\Users\HP\todo-app>kubectl get deployment flask-todo-deployment -o yaml | find "name:"
name: flask-todo-deployment
name: flask-todo
C:\Users\HP\todo-app>kubectl set image deployment/flask-todo-deployment flask-todo=sharayu1418/flask-todo:v2
deployment.apps/flask-todo-deployment image updated
C:\Users\HP\todo-app>kubectl rollout status deployment/flask-todo-deployment
deployment "flask-todo-deployment" successfully rolled out
C:\Users\HP\todo-app>kubectl rollout history deployment/flask-todo-deployment
deployment.apps/flask-todo-deployment
REVISION CHANGE-CAUSE
1 <none>
2 <none>
C:\Users\HP\todo-app>kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
flask-todo-deployment-b68874b6d-j2lh9 1/1 Running 0 2m2s 10.244.0.15 minikube <none> <none>
flask-todo-deployment-b68874b6d-vnpmh 1/1 Running 0 2m6s 10.244.0.14 minikube <none> <none>
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 29m 10.244.0.10 minikube <none> <none>
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (28m ago) 29m 10.244.0.9 minikube <none> <none>
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 29m 10.244.0.8 minikube <none> <none>
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 29m 10.244.0.4 minikube <none> <none>
flask-todo-rc-gkz5m 1/1 Running 0 7m56s 10.244.0.13 minikube <none> <none>
flask-todo-rc-ws94w 1/1 Running 0 11m 10.244.0.11 minikube <none> <none>
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 29m 10.244.0.5 minikube <none> <none>
C:\Users\HP\todo-app>

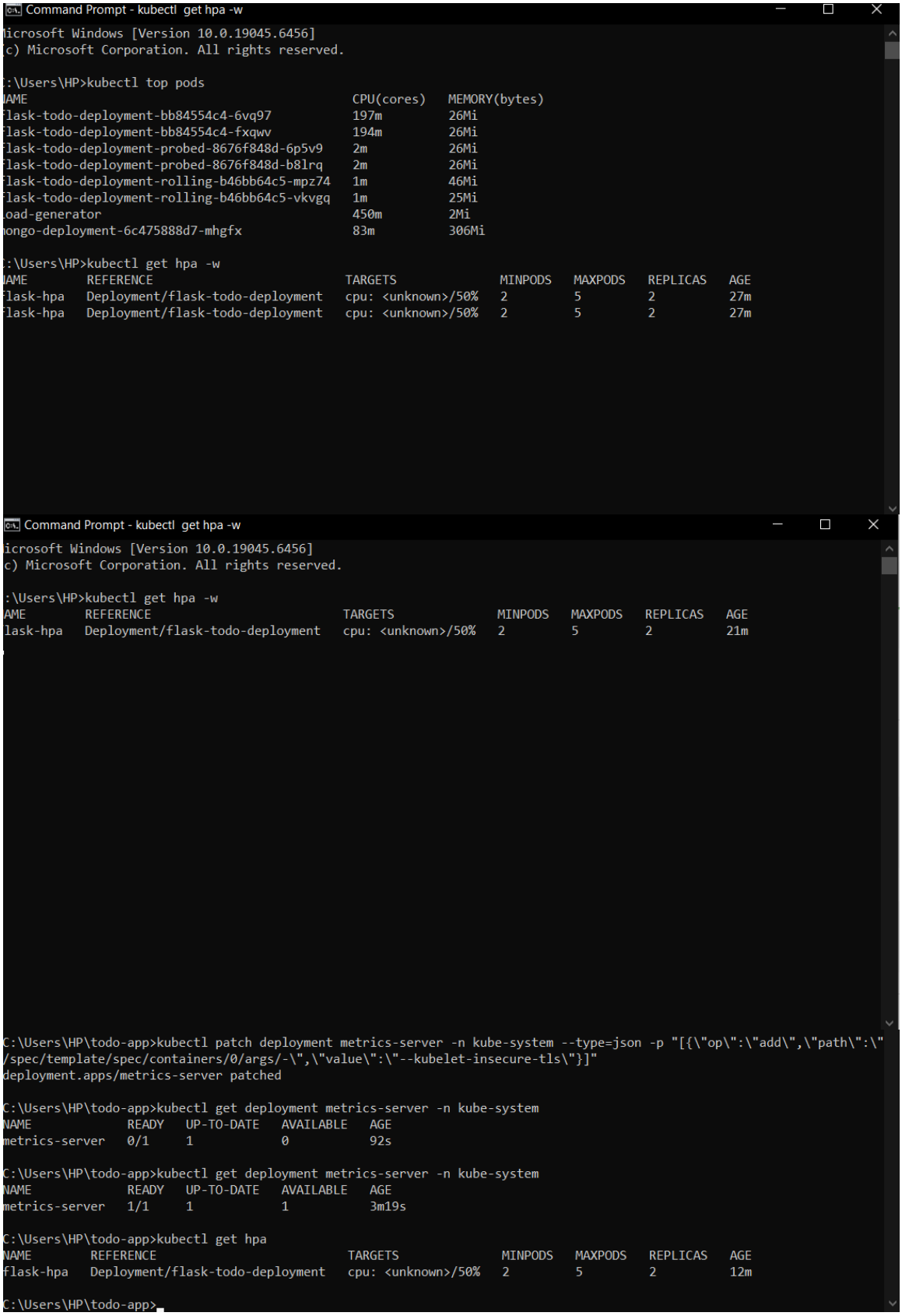

Command Prompt
C:\Users\HP\todo-app>
C:\Users\HP\todo-app>kubectl get pods
NAME READY STATUS RESTARTS AGE
flask-todo-deployment-5ddb8766bf-f9g87 1/1 Running 0 22m
flask-todo-deployment-5ddb8766bf-ghrhd 1/1 Running 0 22m
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 22m
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (21m ago) 22m
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 22m
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 22m
flask-todo-rc-gkz5m 1/1 Running 0 58s
flask-todo-rc-ws94w 1/1 Running 0 4m53s
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 22m
C:\Users\HP\todo-app>kubectl describe deployment flask-todo-deployment | find "Image"
Image: sharayu1418/flask-todo:latest
C:\Users\HP\todo-app>kubectl set image deployment/flask-todo-deployment flask-container=sharayu1418/flask-todo:v2
error: unable to find container named "flask-container"
C:\Users\HP\todo-app>kubectl describe deployment flask-todo-deployment | find "Container"
Containers:
C:\Users\HP\todo-app>kubectl get deployment flask-todo-deployment -o yaml | find "name:"
name: flask-todo-deployment
name: flask-todo
C:\Users\HP\todo-app>kubectl set image deployment/flask-todo-deployment flask-todo=sharayu1418/flask-todo:v2
deployment.apps/flask-todo-deployment image updated
C:\Users\HP\todo-app>kubectl rollout status deployment/flask-todo-deployment
deployment "flask-todo-deployment" successfully rolled out
C:\Users\HP\todo-app>kubectl rollout history deployment/flask-todo-deployment
deployment.apps/flask-todo-deployment
REVISION CHANGE-CAUSE
1 <none>
2 <none>
C:\Users\HP\todo-app>

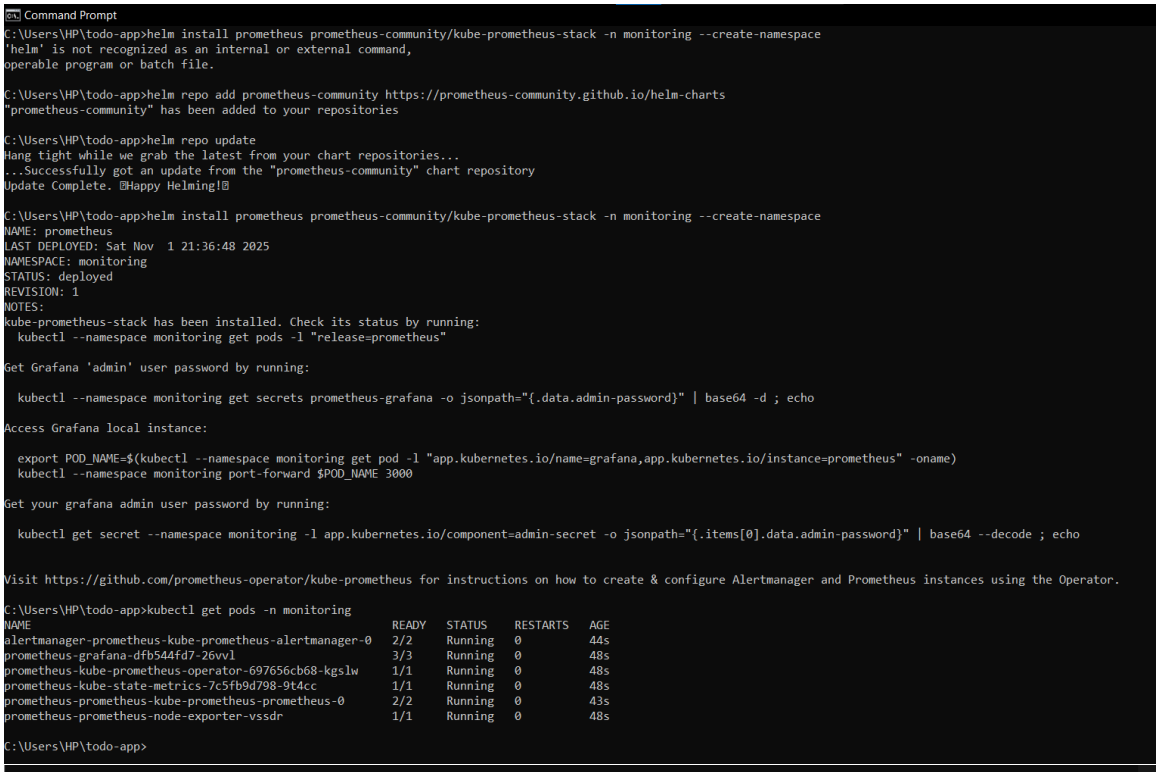

Command Prompt
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 17m
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (16m ago) 17m
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 17m
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 17m
flask-todo-rc-jk6wx 0/1 Pending 0 0s
flask-todo-rc-ws94w 0/1 Pending 0 1s
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 17m
C:\Users\HP\todo-app>kubectl get rc
NAME DESIRED CURRENT READY AGE
flask-todo-rc 2 2 2 30s
C:\Users\HP\todo-app>kubectl get pods
NAME READY STATUS RESTARTS AGE
flask-todo-deployment-5ddb8766bf-f9g87 1/1 Running 0 18m
flask-todo-deployment-5ddb8766bf-ghrhd 1/1 Running 0 18m
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 18m
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (16m ago) 18m
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 18m
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 18m
flask-todo-rc-jk6wx 1/1 Running 0 30s
flask-todo-rc-ws94w 1/1 Running 0 31s
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 18m
C:\Users\HP\todo-app>kubectl get rc
NAME DESIRED CURRENT READY AGE
flask-todo-rc 2 2 2 2m56s
C:\Users\HP\todo-app>kubectl get pods
NAME READY STATUS RESTARTS AGE
flask-todo-deployment-5ddb8766bf-f9g87 1/1 Running 0 20m
flask-todo-deployment-5ddb8766bf-ghrhd 1/1 Running 0 20m
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 20m
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (19m ago) 20m
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 20m
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 20m
flask-todo-rc-jk6wx 1/1 Running 0 2m55s
flask-todo-rc-ws94w 1/1 Running 0 2m56s
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 20m
C:\Users\HP\todo-app>



Kubernetes Deployment

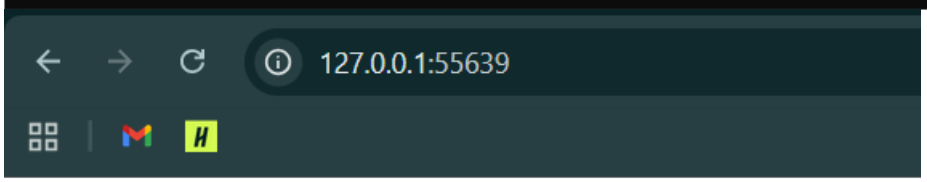

Command Prompt - kubectl get hpa -w
etcd-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-apiserver-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-controller-manager-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-proxy-tgjzb 1/1 Running 2 (109m ago) 19d
kube-scheduler-docker-desktop 1/1 Running 17 (109m ago) 19d
metrics-server-7bc64b58bf-fh88q 1/1 Running 0 119s
storage-provisioner 1/1 Running 21 (108m ago) 19d
vpnkit-controller 1/1 Running 2 (109m ago) 19d
C:\Users\HP>kubectl top pods
NAME CPU(cores) MEMORY(bytes)
flask-todo-deployment-bb84554c4-6vq97 201m 26Mi
flask-todo-deployment-bb84554c4-fxqwv 194m 26Mi
flask-todo-deployment-probed-8676f848d-6p5v9 3m 26Mi
flask-todo-deployment-probed-8676f848d-b8lrq 3m 26Mi
flask-todo-deployment-rolling-b46bb64c5-mpz74 2m 46Mi
flask-todo-deployment-rolling-b46bb64c5-vkvgq 1m 25Mi
load-generator 450m 2Mi
mongo-deployment-6c475888d7-mhgfx 85m 295Mi
C:\Users\HP>kubectl get hpa -w
NAME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
flask-todo-deployment Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 13m
C:\Users\HP>kubectl get pods -n kube-system
NAME READY STATUS RESTARTS AGE
coredns-55cb58b774-dmhzv 1/1 Running 2 (109m ago) 19d
coredns-55cb58b774-x64dr 1/1 Running 2 (109m ago) 19d
etcd-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-apiserver-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-controller-manager-docker-desktop 1/1 Running 2 (109m ago) 19d
kube-proxy-tgjzb 1/1 Running 2 (109m ago) 19d
kube-scheduler-docker-desktop 1/1 Running 17 (109m ago) 19d
metrics-server-7bc64b58bf-fh88q 1/1 Running 0 119s
storage-provisioner 1/1 Running 21 (108m ago) 19d
vpnkit-controller 1/1 Running 2 (109m ago) 19d
C:\Users\HP>kubectl top pods
NAME CPU(cores) MEMORY(bytes)
flask-todo-deployment-bb84554c4-6vq97 201m 26Mi
flask-todo-deployment-bb84554c4-fxqwv 194m 26Mi
flask-todo-deployment-probed-8676f848d-6p5v9 3m 26Mi
flask-todo-deployment-probed-8676f848d-b8lrq 3m 26Mi
flask-todo-deployment-rolling-b46bb64c5-mpz74 2m 46Mi
flask-todo-deployment-rolling-b46bb64c5-vkvgq 1m 25Mi
load-generator 450m 2Mi
mongo-deployment-6c475888d7-mhgfx 85m 295Mi
C:\Users\HP>kubectl get hpa -w
NAME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
flask-todo-deployment Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 13m


Command Prompt - kubectl get hpa -w
icrosoft Windows [Version 10.0.19045.6456]
c) Microsoft Corporation. All rights reserved.
:\Users\HP>kubectl top pods
AME CPU(cores) MEMORY(bytes)
lask-todo-deployment-bb84554c4-6vq97 197m 26Mi
lask-todo-deployment-bb84554c4-fxqwv 194m 26Mi
lask-todo-deployment-probed-8676f848d-6p5v9 2m 26Mi
lask-todo-deployment-probed-8676f848d-b8lrq 2m 26Mi
lask-todo-deployment-rolling-b46bb64c5-mpz74 1m 46Mi
lask-todo-deployment-rolling-b46bb64c5-vkvgq 1m 25Mi
oad-generator 450m 2Mi
ongo-deployment-6c475888d7-mhgfx 83m 306Mi
:\Users\HP>kubectl get hpa -w
AME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
lask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 27m
lask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 27m
Command Prompt - kubectl get hpa -w
icrosoft Windows [Version 10.0.19045.6456]
c) Microsoft Corporation. All rights reserved.
:\Users\HP>kubectl get hpa -w
AME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
lask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 21m
C:\Users\HP\todo-app>kubectl patch deployment metrics-server -n kube-system --type=json -p "[{\"op\":\"add\",\"path\":\"
/spec/template/spec/containers/0/args/-\",\"value\":\"--kubelet-insecure-tls\"}]"
deployment.apps/metrics-server patched
C:\Users\HP\todo-app>kubectl get deployment metrics-server -n kube-system
NAME READY UP-TO-DATE AVAILABLE AGE
metrics-server 0/1 1 0 92s
C:\Users\HP\todo-app>kubectl get deployment metrics-server -n kube-system
NAME READY UP-TO-DATE AVAILABLE AGE
metrics-server 1/1 1 1 3m19s
C:\Users\HP\todo-app>kubectl get hpa
NAME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
flask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 2 12m
C:\Users\HP\todo-app>



Metrics Server & Autoscaling (HPA)

```
C:\Users\HP\todo-app>kubectl get svc
NAME                TYPE           CLUSTER-IP      EXTERNAL-IP
      PORT(S)        AGE
flask-todo-service   LoadBalancer   10.100.36.182   acbcfedde25a84543a87a778a0c4ba96-1133005992.us-east-1.elb.amazonaws.
com   80:30604/TCP   23m
kubernetes           ClusterIP      10.100.0.1      <none>
      443/TCP        36m
mongo                ClusterIP      10.100.222.37   <none>
      27017/TCP      16m

C:\Users\HP\todo-app>
```



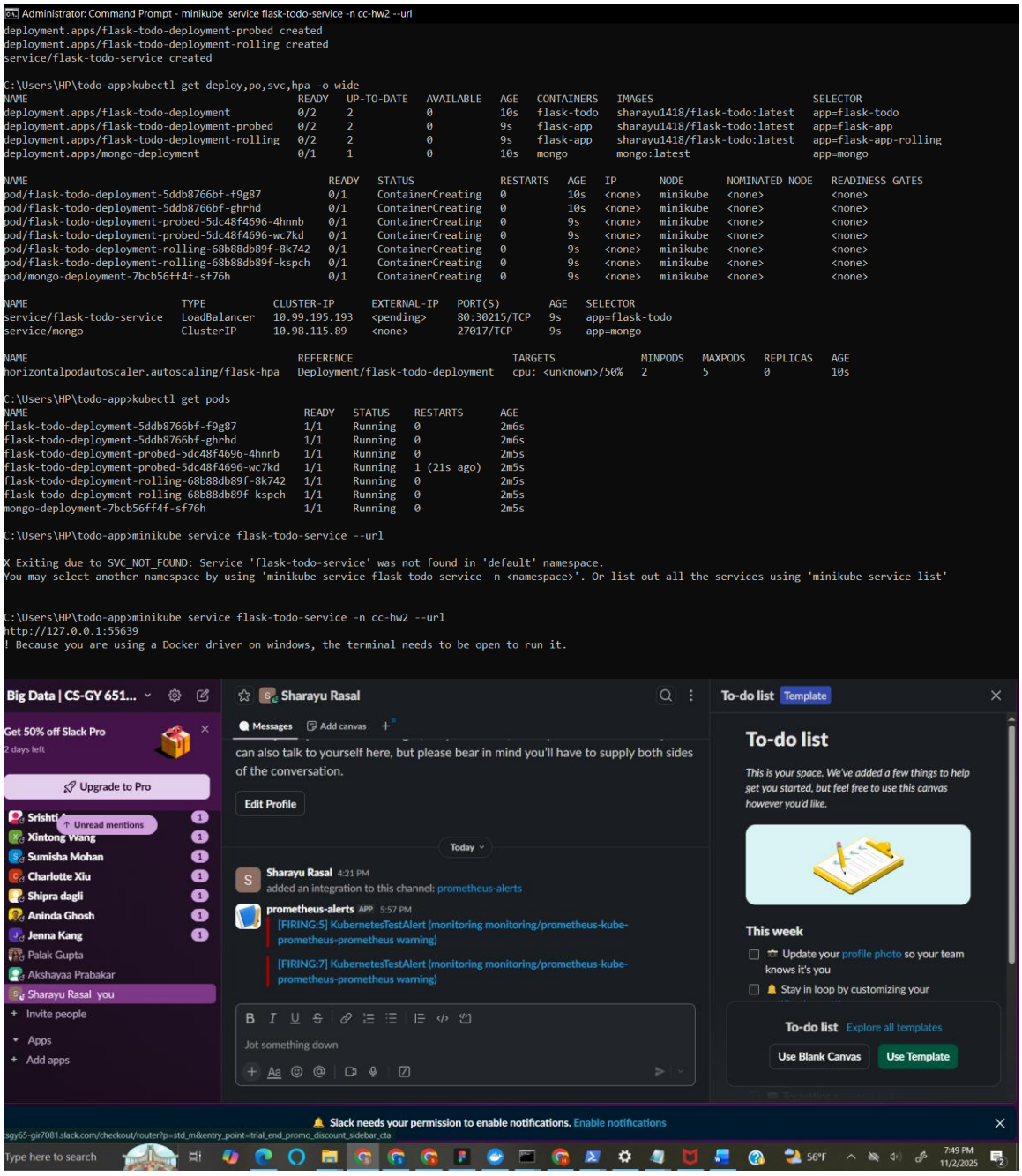
My To-Do List

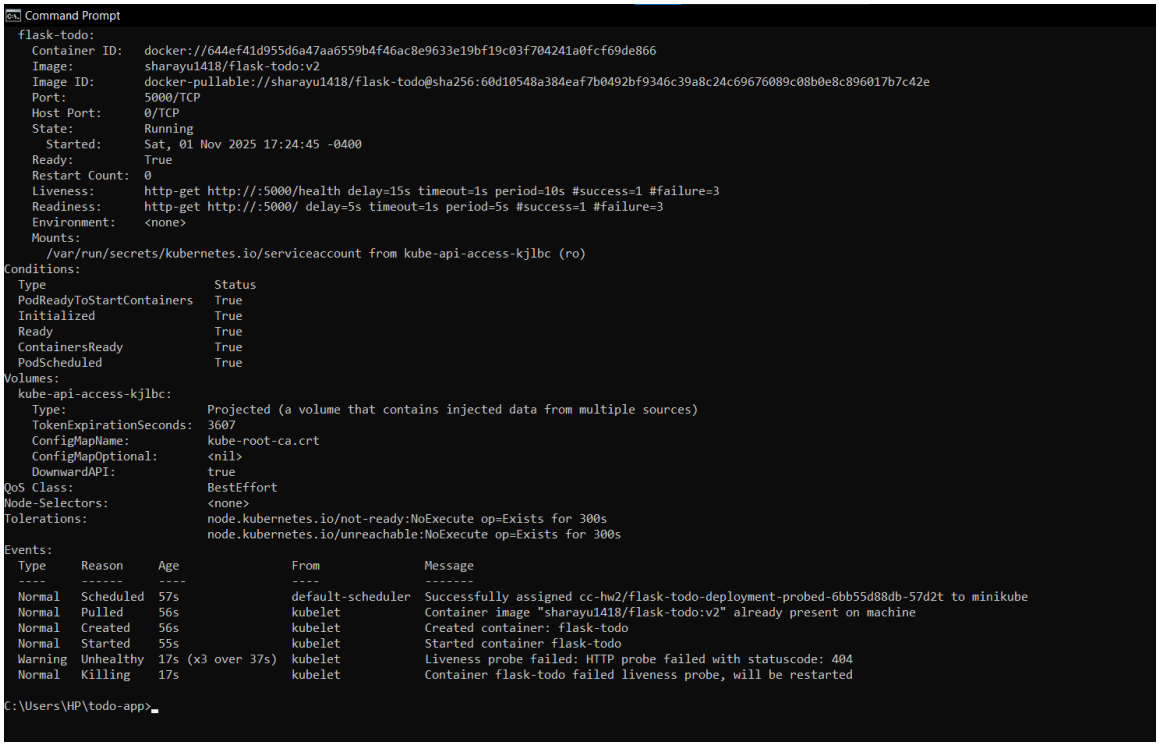
New task Add

- Do Laundry
- Prepare Dinner

```
Administrator: Command Prompt - minikube  service flask-todo-service -n cc-hw2 --url
C:\Windows\system32>move .\minikube-windows-amd64.exe C:\Windows\System32\minikube.exe
The system cannot find the file specified.

C:\Windows\system32>cd C:\Users\HP\todo-app

C:\Users\HP\todo-app>move .\minikube-windows-amd64.exe C:\Windows\System32\minikube.exe
       1 file(s) moved.

C:\Users\HP\todo-app>minikube status
* Profile "minikube" not found. Run "minikube profile list" to view all profiles.
  To start a cluster, run: "minikube start"

C:\Users\HP\todo-app>minikube start --driver=docker --cpus=4 --memory=4096
* minikube v1.37.0 on Microsoft Windows 10 Home 10.0.19045.6456 Build 19045.6456
* Using the docker driver based on user configuration

X Exiting due to MK_USAGE: Docker Desktop has only 3796MB memory but you specified 4096MB


C:\Users\HP\todo-app>minikube start --driver=docker --cpus=4 --memory=3000
* minikube v1.37.0 on Microsoft Windows 10 Home 10.0.19045.6456 Build 19045.6456
* Using the docker driver based on user configuration
* Using Docker Desktop driver with root privileges
* Starting "minikube" primary control-plane node in "minikube" cluster
* Pulling base image v0.0.48 ...
* Downloading Kubernetes v1.34.0 preload ...
    > gcr.io/k8s-minikube/kicbase...:  488.52 MiB / 488.52 MiB  100.00% 13.65 M
    > preloaded-images-k8s-v18-v1...:  337.07 MiB / 337.07 MiB  100.00% 6.86 Mi
* Creating docker container (CPUs=4, Memory=3000MB) ...
! Failing to connect to https://registry.k8s.io/ from inside the minikube container
* To pull new external images, you may need to configure a proxy: https://minikube.sigs.k8s.io/docs/reference/networking/proxy/
* Preparing Kubernetes v1.34.0 on Docker 28.4.0 ...
* Configuring bridge CNI (Container Networking Interface) ...
* Verifying Kubernetes components...
  - Using image gcr.io/k8s-minikube/storage-provisioner:v5
* Enabled addons: storage-provisioner, default-storageclass

! C:\Program Files\Docker\Docker\resources\bin\kubectl.exe is version 1.30.5, which may have incompatibilities with Kubernetes 1.34.0.
  - Want kubectl v1.34.0? Try 'minikube kubectl -- get pods -A'
* Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default

C:\Users\HP\todo-app>minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
```

Minikube Deployment


Administrator: Command Prompt - minikube service flask-todo-service -n cc-hw2 --url
deployment.apps/flask-todo-deployment-probed created
deployment.apps/flask-todo-deployment-rolling created
service/flask-todo-service created
C:\Users\HP\todo-app>kubectl get deploy,po,svc,hpa -o wide
NAME READY UP-TO-DATE AVAILABLE AGE CONTAINERS IMAGES SELECTOR
deployment.apps/flask-todo-deployment 0/2 2 0 10s flask-todo sharayu1418/flask-todo:latest app=flask-todo
deployment.apps/flask-todo-deployment-probed 0/2 2 0 9s flask-app sharayu1418/flask-todo:latest app=flask-app
deployment.apps/flask-todo-deployment-rolling 0/2 2 0 9s flask-app sharayu1418/flask-todo:latest app=flask-app-rolling
deployment.apps/mongo-deployment 0/1 1 0 10s mongo mongo:latest app=mongo
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
pod/flask-todo-deployment-5ddb8766bf-f9g87 0/1 ContainerCreating 0 10s <none> minikube <none> <none>
pod/flask-todo-deployment-5ddb8766bf-ghrhd 0/1 ContainerCreating 0 10s <none> minikube <none> <none>
pod/flask-todo-deployment-probed-5dc48f4696-4hnnb 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-probed-5dc48f4696-wc7kd 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-rolling-68b88db89f-8k742 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/flask-todo-deployment-rolling-68b88db89f-kspch 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
pod/mongo-deployment-7bcb56ff4f-sf76h 0/1 ContainerCreating 0 9s <none> minikube <none> <none>
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE SELECTOR
service/flask-todo-service LoadBalancer 10.99.195.193 <pending> 80:30215/TCP 9s app=flask-todo
service/mongo ClusterIP 10.98.115.89 <none> 27017/TCP 9s app=mongo
NAME REFERENCE TARGETS MINPODS MAXPODS REPLICAS AGE
horizontalpodautoscaler.autoscaling/flask-hpa Deployment/flask-todo-deployment cpu: <unknown>/50% 2 5 0 10s
C:\Users\HP\todo-app>kubectl get pods
NAME READY STATUS RESTARTS AGE
flask-todo-deployment-5ddb8766bf-f9g87 1/1 Running 0 2m6s
flask-todo-deployment-5ddb8766bf-ghrhd 1/1 Running 0 2m6s
flask-todo-deployment-probed-5dc48f4696-4hnnb 1/1 Running 0 2m5s
flask-todo-deployment-probed-5dc48f4696-wc7kd 1/1 Running 1 (21s ago) 2m5s
flask-todo-deployment-rolling-68b88db89f-8k742 1/1 Running 0 2m5s
flask-todo-deployment-rolling-68b88db89f-kspch 1/1 Running 0 2m5s
mongo-deployment-7bcb56ff4f-sf76h 1/1 Running 0 2m5s
C:\Users\HP\todo-app>minikube service flask-todo-service --url
X Exiting due to SVC_NOT_FOUND: Service 'flask-todo-service' was not found in 'default' namespace.
You may select another namespace by using 'minikube service flask-todo-service -n <namespace>'. Or list out all the services using 'minikube service list'
C:\Users\HP\todo-app>minikube service flask-todo-service -n cc-hw2 --url
http://127.0.0.1:55639
! Because you are using a Docker driver on windows, the terminal needs to be open to run it.
Big Data | CS-GY 651...
Get 50% off Slack Pro
2 days left
Upgrade to Pro
Unread mentions
Xintong Wang
Sumisha Mohan
Charlotte Xiu
Shipra dagli
Aninda Ghosh
Jenna Kang
Palak Gupta
Akshayaa Prabakar
Sharayu Rasal you
Invite people
Apps
Add apps
Sharayu Rasal
Messages
Add canvas
can also talk to yourself here, but please bear in mind you'll have to supply both sides of the conversation.
Edit Profile
Today
Sharayu Rasal 4:21 PM
added an integration to this channel: prometheus-alerts
prometheus-alerts APP 5:57 PM
[FIRING:5] KubernetesTestAlert (monitoring monitoring/prometheus-kube-prometheus-prometheus warning)
[FIRING:7] KubernetesTestAlert (monitoring monitoring/prometheus-kube-prometheus-prometheus warning)
Jot something down
To-do list Template
To-do list
This is your space. We've added a few things to help get you started, but feel free to use this canvas however you'd like.
This week
Update your profile photo so your team knows it's you
Stay in loop by customizing your
To-do list Explore all templates
Use Blank Canvas
Use Template
Slack needs your permission to enable notifications. Enable notifications
Type here to search
56°F
7:49 PM
11/2/2025



Monitoring and Alerts