

Microservices & Kubernetes

Initially, we had a monolithic application for Contact Management System deployed using Docker. However, we broke it down into two microservices, frontend-service and backend-service. The frontend-service manages the routing of the application, whereas the backend-service manages the contacts. The architectural diagram for the application, before and after this process was as follows:



Previously, a monolithic application deployed on Docker, has now become two microservices running on Kubernetes pods inside a Kind cluster.

The code and the Kubernetes configuration files (deployment.yaml and service.yaml for both services) for the application can be found on [Github](#).

As shown in the image below, we can see the two microservices deployed and running in a pod and exposed with a service.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment> kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
backend-deployment-96f5b68ff-ng6x8  1/1     Running   0           31m
frontend-deployment-55c4f7b78b-72n9h  1/1     Running   0           31m
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment> kubectl get svc
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP  PORT(S)          AGE
frontend-service    NodePort    10.96.211.188 <none>        5000:31427/TCP   32m
kubernetes           ClusterIP   10.96.0.1     <none>        443/TCP          34m
PS C:\SJSU\Fall 2024 Coursework\CMPE 272 Ent Software Platforms\Assignments\assignment> |
```

Here is another image of the live application.

