

CS3219 OTOT Task A2 Submission

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Links

GitHub link: <https://github.com/schoolex/cs3219-otot-A/tree/main/OTOT-A2-A3>

Task A2.1

To create the cluster

```
kind create cluster --name kind-1 --config k8s/kind/cluster-config.yaml
```

Verify that the cluster is running in docker

```
docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
6caf77bf98cb	kindest/node:v1.25.2	"/usr/local/bin/entr..."	3 minutes ago	Up 2 minutes	127.0.0.1:61481->6443/tcp	kind-1-worker3
29f760f96809	kindest/node:v1.25.2	"/usr/local/bin/entr..."	3 minutes ago	Up 2 minutes	127.0.0.1:61481->6443/tcp	kind-1-control-plane
5c81c782d857	kindest/node:v1.25.2	"/usr/local/bin/entr..."	3 minutes ago	Up 2 minutes	0.0.0.0:80->80/tcp	kind-1-worker
385e9e5718ae	kindest/node:v1.25.2	"/usr/local/bin/entr..."	3 minutes ago	Up 2 minutes		kind-1-worker2

Verify that the cluster is running via kubectl

```
kubectl get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
kind-1-control-plane	Ready	control-plane	4m29s	v1.25.2
kind-1-worker	Ready	<none>	4m6s	v1.25.2
kind-1-worker2	Ready	<none>	4m4s	v1.25.2
kind-1-worker3	Ready	<none>	3m51s	v1.25.2

To get more info about the kube cluster

```
kubectl cluster-info
```

```
~/De/N/Sem 4/CS3219/otot-A/OTOT-A2-A3 | main !2 ?2 kubectl cluster-info
Kubernetes control plane is running at https://127.0.0.1:61481
CoreDNS is running at https://127.0.0.1:61481/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy
```

Task A2.2

First, load the docker image from task a1

```
kind load docker-image a1/app --name=kind-1
```

```
~/De/N/Sem 4-1/CS3219/otot-A/OTOT-A2-3/demo/a2 | main !2 ?2 kind load docker-image a1/app --name=kind-1
Image: "a1/app" with ID "sha256:fb995d9e84a40f350e87a67c012d4405629ad4ca9a19b8ee7ffd15ca0240e640" not yet present on node "kind-1-worker3", loading...
Image: "a1/app" with ID "sha256:fb995d9e84a40f350e87a67c012d4405629ad4ca9a19b8ee7ffd15ca0240e640" not yet present on node "kind-1-control-plane", loading...
Image: "a1/app" with ID "sha256:fb995d9e84a40f350e87a67c012d4405629ad4ca9a19b8ee7ffd15ca0240e640" not yet present on node "kind-1-worker", loading...
Image: "a1/app" with ID "sha256:fb995d9e84a40f350e87a67c012d4405629ad4ca9a19b8ee7ffd15ca0240e640" not yet present on node "kind-1-worker2", loading...
```

Cd into demo/a2

Create the deployment

```
kubectl apply -f deployment.yml
```

Verify that the pods are running

```
kubectl get pods
```

```
~/De/N/Sem 4/CS3/otot-A/OTOT-A2/d/a2 | main !2 ?2 kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
a2-79dff7695-djq55	1/1	Running	0	3m1s
a2-79dff7695-q982c	1/1	Running	0	3m1s
a2-79dff7695-x9w9c	1/1	Running	0	3m1s

Create ingress-nginx controller

```
kubectl apply -f
https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yml
```

Verify that ingress-nginx controller is created successfully

```
kubectl -n ingress-nginx get deploy
```

```
~/De/N/Sem 4/CS3/otot-A/OTOT-A2/demo/a2 | main !2 ?3 kubectl -n ingress-nginx get deploy
```

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
ingress-nginx-controller	1/1	1	1	156m

Create the service

```
kubectl apply -f service.yml
```

Verify that the service works

```
kubectl get svc
```

```
~/De/N/Sem 4/CS3/otot-A/OTOT-A2-A3/demo/a2 | main !2 ?2 kubectl get svc
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
a2	ClusterIP	10.96.44.46	<none>	3000/TCP	10s
kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	16m

Create the ingress object

```
kubectl apply -f ingress.yml
```

Verify that the ingress works

```
kubectl get ingress
```

```
~/De/N/Sem 4/CS3/otot-A/OTOT-A2-A3/demo/a2 | main !2 ?2 kubectl get ingress
```

NAME	CLASS	HOSTS	ADDRESS	PORTS	AGE
a2	<none>	*		80	19s

Access the A1 app at <http://localhost/app/>

