

# КИИИ Лаб 10

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## Class Assignment / Homework

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- Storage:
  - Deploy EMQTT cluster of
    - three nodes
  - Have the configuration in a ConfigMap
  - Have the /opt/emqx/data folder persisted
  - Example:
    - <https://www.emqx.io/docs/en/v5.0/deploy/install-docker.html#use-docker-compose-to-build-an-emqx-cluster>
  - Verify the running nodes with “emqx\_ctl cluster status” on the nodes

## Manifest.yaml

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: emqx-config
data:
  emqx.conf: |
    # EMQX Configuration
    node.name = emqx@${POD_IP}
    node.cookie = emqxsecretcookie
    cluster.discovery_strategy = dns
    cluster.dns.name = emqx-headless.default.svc.cluster.local
    cluster.dns.type = srv
    cluster.dns.app = emqx
    cluster.dns.srv.auto_join = true
```

## Statefulset.yaml

```
1 / statefulset.yaml X
2 C:\Users\bera> OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> / statefulset.yaml
3 1 apiVersion: apps/v1
4 2 kind: StatefulSet
5 3 metadata:
6 4   name: emqx
7 5 spec:
8 6   serviceName: emqx-headless
9 7   replicas: 3
10 8   selector:
11 9     matchLabels:
12 10       app: emqx
13 11   template:
14 12     metadata:
15 13       labels:
16 14         app: emqx
17 15     spec:
18 16       containers:
19 17         - name: emqx
20 18           image: emqx/emqx:latest
21 19           env:
22 20             - name: POD_IP
23 21               valueFrom:
24 22                 fieldRef:
25 23                   fieldPath: status.podIP
26 24           volumeMounts:
27 25             - name: emqx-config
28 26               mountPath: /opt/emqx/etc/emqx.conf
29 27               subPath: emqx.conf
30 28             - name: emqx-data
31 29               mountPath: /opt/emqx/data
32 30       volumes:
33 31         - name: emqx-config
34 32           configMap:
35 33             name: emqx-config
36 34       volumeClaimTemplates:
37 35         - metadata:
38 36             name: emqx-data
39 37           spec:
40 38             accessModes: ["ReadWriteOnce"]
41 39             resources:
42 40               requests:
43 41                 storage: 1Gi
```

```
apiVersion: apps/v1
kind: StatefulSet
metadata:
  name: emqx
spec:
  serviceName: emqx-headless
  replicas: 3
  selector:
    matchLabels:
      app: emqx
  template:
    metadata:
      labels:
        app: emqx
    spec:
      containers:
        - name: emqx
          image: emqx/emqx:latest
          env:
            - name: POD_IP
              valueFrom:
                fieldRef:
                  fieldPath: status.podIP
          volumeMounts:
            - name: emqx-config
              mountPath: /opt/emqx/etc/emqx.conf
              subPath: emqx.conf
            - name: emqx-data
              mountPath: /opt/emqx/data
      volumes:
        - name: emqx-config
          configMap:
            name: emqx-config
      volumeClaimTemplates:
        - metadata:
            name: emqx-data
```

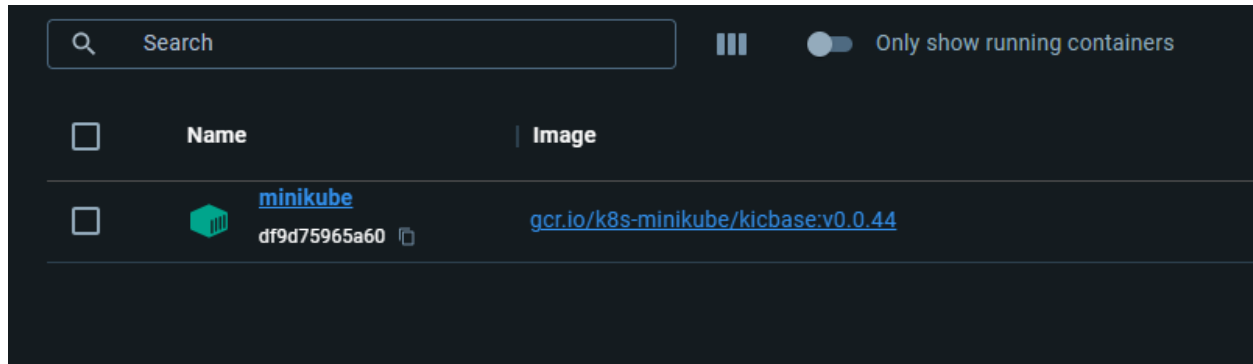
```
spec:
  accessModes: ["ReadWriteOnce"]
resources:
  requests:
    storage: 1Gi
```

## Service.yaml



```
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: emqx-headless
5  spec:
6    clusterIP: None
7    selector:
8      app: emqx
9    ports:
10     - port: 1883
11       name: mqtt
12     - port: 8081
13       name: http
14
```

## Start minikube



## Powershell terminal

```
kubectl apply -f configmap.yaml
kubectl apply -f service.yaml
kubectl apply -f statefulset.yaml
```

```
PS C:\Users\berat\OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> kubectl apply -f c
onfigmap.yaml
configmap/emqx-config created
PS C:\Users\berat\OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> kubectl apply -f s
ervice.yaml
service/emqx-headless created
PS C:\Users\berat\OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> kubectl apply -f s
tatefulset.yaml
statefulset.apps/emqx created
PS C:\Users\berat\OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> |
```

## EMQ running pods

```
Error from server (BadRequest): pod emqx-0 does not have a host assigned
PS C:\Users\berat\OneDrive\Documents\Github\FINKI\CICD - Continuous Integration & Delivery\Playground> kubectl get
NAME                                READY   STATUS              RESTARTS   AGE
emqx-0                              1/1     Running             0           79s
emqx-1                              0/1     ContainerCreating   0           2s
my-static-site-deployment-865679c85c-2v9jq  1/1     Running             1 (8d ago)  8d
my-static-site-deployment-865679c85c-cqdfq  1/1     Running             1 (8d ago)  8d
my-static-site-deployment-865679c85c-g9zjz  1/1     Running             1 (8d ago)  8d
my-static-site-deployment-865679c85c-l5mjp  1/1     Running             1 (8d ago)  8d
my-static-site-deployment-865679c85c-w7wgn  1/1     Running             1 (8d ago)  8d
```

**kubectl exec -it emqx-0 -- emqx\_ctl cluster status**