

# Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile

## 1.Create a namespace

```
C:\Windows\System32\cmd.e x + v
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl create namespace emqx
namespace/emqx created

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl get ns
NAME          STATUS    AGE
default       Active    6d4h
emqx          Active    11s
kube-node-lease Active    6d4h
kube-public   Active    6d4h
kube-system   Active    6d4h

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>|
```

## 2.ConfigMap for emqx

```
C:\Windows\System32\cmd.e x + v
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>vim emqx-configmap.yaml
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl apply -f emqx-configmap.yaml
configmap/emqx-config created

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl get configmap -n emqx
NAME          DATA    AGE
emqx-config    3        14s
kube-root-ca.crt 1        14m

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```

## 3.Headless service for emqx

```
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl apply -f emqx-headless-service.yaml
service/emqx-headless created

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl get svc -n emqx
NAME          TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
emqx-headless ClusterIP    None          <none>         1883/TCP,18083/TCP 15s

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```

## 4.emqx statefulset

```
C:\Windows\System32\cmd.e x + v
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>vim emqx-configmap.yaml
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl apply -f emqx-configmap.yaml
configmap/emqx-config configured

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>vim emqx-statefulset.yaml
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl apply -f emqx-statefulset.yaml
statefulset.apps/emqx configured

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>lubectl delete statefulset emqx -n emqx
'lubectl' is not recognized as an internal or external command,
operable program or batch file.

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl delete statefulset emqx -n emqx
statefulset.apps "emqx" deleted

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl apply -f emqx-statefulset.yaml
statefulset.apps/emqx created

F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl get pods -n emqx -w
NAME    READY   STATUS    RESTARTS   AGE
emqx-0  1/1     Running   0           16s
emqx-1  1/1     Running   0           14s
emqx-2  1/1     Running   0           12s
```

## 5. Validate emqx cluster

```
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>kubectl exec -n emqx -it emqx-0 -- emqx ctl cluster status
Cluster status: #running_nodes =>
    'emqx@emqx-0.emqx-headless.emqx.svc.cluster.local',
    'emqx@emqx-1.emqx-headless.emqx.svc.cluster.local',
    'emqx@emqx-2.emqx-headless.emqx.svc.cluster.local'],
stopped_nodes => []
F:\Repo\KIII\Kubernetes - Storage, Config Maps, Secrets, Stateful SetsFile>
```

## 6. Dashboard emqx

[illegible]

Беќир Фазли 191045

7. The code:

**emqx-configmap.yaml**

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: emqx-config
  namespace: emqx
data:
  EMQX_CLUSTER__STATIC__SEEDS: "emqx@emqx-0.emqx-headless.emqx.svc.cluster.local,emqx@emqx-1.emqx-headless.emqx.svc.cluster.local,emqx@emqx-2.emqx-headless.emqx.svc.cluster.local"
```

**emqx-headless-service.yaml**

```
apiVersion: v1
kind: Service
metadata:
  name: emqx-headless
  namespace: emqx
spec:
  clusterIP: None
  selector:
    app: emqx
  ports:
    - name: mqtt
      port: 1883
      targetPort: 1883
    - name: dashboard
      port: 18083
      targetPort: 18083
```

### emqx-statefulset.yaml

```
apiVersion: apps/v1
kind: StatefulSet
metadata:
  name: emqx
  namespace: emqx
spec:
  serviceName: emqx-headless
  replicas: 3
  selector:
    matchLabels:
      app: emqx
  template:
    metadata:
      labels:
        app: emqx
    spec:
      containers:
        - name: emqx
          image: emqx/emqx:5.0.25
          env:
            - name: POD_NAME
              valueFrom:
                fieldRef:
                  fieldPath: metadata.name
            - name: EMQX_NODE__NAME
              value: "emqx@$(POD_NAME).emqx-headless.emqx.svc.cluster.local"
            - name: EMQX_CLUSTER__DISCOVERY_STRATEGY
              value: "static"
            - name: EMQX_CLUSTER__STATIC__SEEDS
              valueFrom:
                configMapKeyRef:
                  name: emqx-config
                  key: EMQX_CLUSTER__STATIC__SEEDS
            - name: EMQX_NODE__COOKIE
              value: "secretcookie"
          ports:
            - containerPort: 1883
            - containerPort: 18083
          volumeMounts:
            - name: emqx-data
              mountPath: /opt/emqx/data
      volumes:
        - name: emqx-data
          persistentVolumeClaim:
            claimName: emqx-pvc
      volumeClaimTemplates:
        - metadata:
            name: emqx-data
          spec:
            accessModes: [ "ReadWriteOnce" ]
            resources:
              requests:
                storage: 1Gi
```