Kubernetes

notepad emqx-cluster.yaml

cat emqx-cluster.yaml

```
PS C:\Users\Ivan\Desktop\EMQTT> notepad emqx-cluster.yaml
PS C:\Users\Ivan\Desktop\EMQTT> cat .\emqx-cluster.yaml
```

- **Creating a ConfigMap for EMQX Configuration.**

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: emqx-config
  namespace: default
data:
  EMQX_NAME: emqx
  EMQX_CLUSTER__DISCOVERY: dns
  EMQX_CLUSTER__DNS__TYPE: srv
  EMQX_CLUSTER__DNS__NAME: emqx-headless.default.svc.cluster.local
```

- **Creating a Headless Service for Cluster Discovery.**

```
apiVersion: v1
kind: Service
metadata:
  name: emqx-headless
  namespace: default
spec:
  clusterIP: None
  selector:
    app: emqx
  ports:
    - name: mqtt
      port: 1883
      targetPort: 1883
    - name: dashboard
      port: 18083
      targetPort: 18083
    - name: mgmt
      port: 8081
      targetPort: 8081
```

- **Defining a StatefulSet for 3 EMQX Nodes.**

```yaml
apiVersion: apps/v1
kind: StatefulSet
metadata:
  name: emqx
  namespace: default
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
          ports:
            - containerPort: 1883
              name: mqtt
            - containerPort: 18083
              name: dashboard
            - containerPort: 8081
              name: mgmt
          env:
            - name: POD_NAME
              valueFrom:
                fieldRef:
                  fieldPath: metadata.name
            - name: EMQX_NODE__NAME
              value: emqx@$(POD_NAME).emqx-headless.default.svc.cluster.local
          envFrom:
            - configMapRef:
                name: emqx-config
          volumeMounts:
            - name: emqx-data
              mountPath: /opt/emqx/data
  volumeClaimTemplates:
    - metadata:
        name: emqx-data
      spec:
        accessModes: ["ReadWriteOnce"]
        resources:
          requests:
            storage: 1Gi
```

- **Deploying.**

kubectl apply -f emqx -f emqx-cluster.yaml

```
PS C:\Users\Ivan\Desktop\EMQTT> kubectl apply -f emqx-cluster.yaml
configmap/emqx-config created
service/emqx-headless created
statefulset.apps/emqx created
```

kubectl get pods -l app=emqx

```
PS C:\Users\Ivan\Desktop\EMQTT> kubectl get pods -l app=emqx
NAME     READY   STATUS    RESTARTS   AGE
emqx-0   1/1     Running   0          4m55s
emqx-1   1/1     Running   0          110s
emqx-2   1/1     Running   0          104s
```

- **Access and Verify Cluster Status.**

kubectl exec -it emqx-0 -c emqx – emqx_ctl cluster status

```
PS C:\Users\Ivan\Desktop\EMQTT> kubectl exec -it emqx-0 -c emqx -- emqx_ctl cluster status
Cluster status: #{running_nodes =>
                      ['emqx@emqx-0.emqx-headless.default.svc.cluster.local'],
                  stopped_nodes => []}
```