**Elasctic Cloud On Kubernetes (ECK)**

Create a Kubernetes cluster.

Run the below commands to get the Elastic resources and operator with its RBAC rules-

kubectl create -f <https://download.elastic.co/downloads/eck/2.9.0/crds.yaml>

kubectl apply -f <https://download.elastic.co/downloads/eck/2.9.0/operator.yaml>

These commands will make sure that Elastic, Kibana, Logstash are now valid resources in the k8s cluster.

Now we need to create ElasticSearch.

Important point- We don’t have dynamic volume provisioning. Hence we use Persistent Volume. Also ElasticSearch creates a Persistence Volume Claim by default. So need to mention the Persistence Volume when creating the ElasticSearch.  
Also, we need the customized Username and Password. So need to create a secret for the Username and Password and need to mention it in the ElasticSearch yaml file.

Below is the yaml file containing, Persistent Volume, Secret and ElasticSearch yaml file which also contains the reference for the above Persistent Volume and Secret.

Vi elasticsearch.yaml

---

apiVersion: v1

kind: PersistentVolume

metadata:

name: elasticsearch-data # Name of the Persistent Volume

spec:

capacity:

storage: 10Gi # Storage capacity

accessModes:

- ReadWriteOnce # Access mode (can be ReadWriteOnce, ReadOnlyMany, or ReadWriteMany)

storageClassName: local-path # Storage class name (if applicable)

hostPath:

path: /mnt # Path on the host machine

persistentVolumeReclaimPolicy: Retain # Reclaim policy (can be Retain, Recycle, or Delete)

---

apiVersion: v1

kind: Secret

metadata:

name: secret-basic-auth

type: kubernetes.io/basic-auth

stringData:

username: user # required field for kubernetes.io/basic-auth

password: mypassword # required field for kubernetes.io/basic-auth

roles: superuser #This gives all the privileges to this user

---

apiVersion: elasticsearch.k8s.elastic.co/v1

kind: Elasticsearch

metadata:

name: quickstart

spec:

version: 8.10.2

nodeSets:

- name: default

count: 1

config:

node.store.allow\_mmap: false

xpack.security.enabled: true

volumeClaimTemplates: #Volume is mentioned from here

- metadata:

name: elasticsearch-data

spec:

accessModes:

- ReadWriteOnce

storageClassName: local-path # Name of your storage class

resources:

requests:

storage: 2Gi # Size of the PVC (must match the PVC size)

auth: # Secret is mentioned here

fileRealm:

- secretName: secret-basic-auth

Once ElasticSearch is up and running, use the below file to setup Kibana

vi kibana.yaml

apiVersion: kibana.k8s.elastic.co/v1

kind: Kibana

metadata:

name: quickstart

spec:

version: 8.10.2

count: 1

elasticsearchRef:

name: quickstart

---

To access these from the internet, we need to change the service to NodePort or LoadBalancer. Use the below command for this-

Kubectl get svc

Kubectl edit svc/ quickstart-es-http (For ElasticSearch)

Kubectl edit svc/ quickstart-kb-http (For Kibana)

**Reference Link**

<https://www.elastic.co/guide/en/cloud-on-k8s/current/k8s-deploy-eck.html>

<https://www.elastic.co/guide/en/cloud-on-k8s/current/k8s-deploy-elasticsearch.html>

<https://www.elastic.co/guide/en/cloud-on-k8s/current/k8s-deploy-kibana.html>

<https://www.elastic.co/guide/en/cloud-on-k8s/master/k8s-users-and-roles.html>