Lesson 09 Demo 06

Analyzing Pod Logs

Objective: To analyze the logs of a pod hosting a container within a Kubernetes cluster to view the application or service's output

Tools required: kubeadm, kubectl, kubelet, and containerd

Prerequisites: A Kubernetes cluster should already be set up (refer to the steps provided in Lesson 02, Demo 01 for guidance).

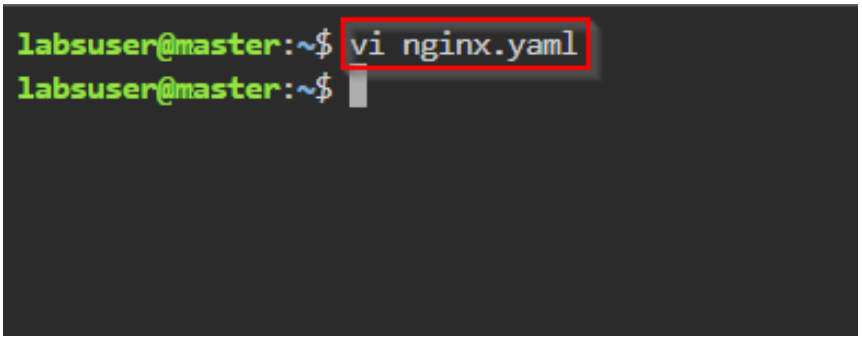
Steps to be followed:

1. Configure and verify Nginx deployment

Step 1: Configure and verify Nginx deployment

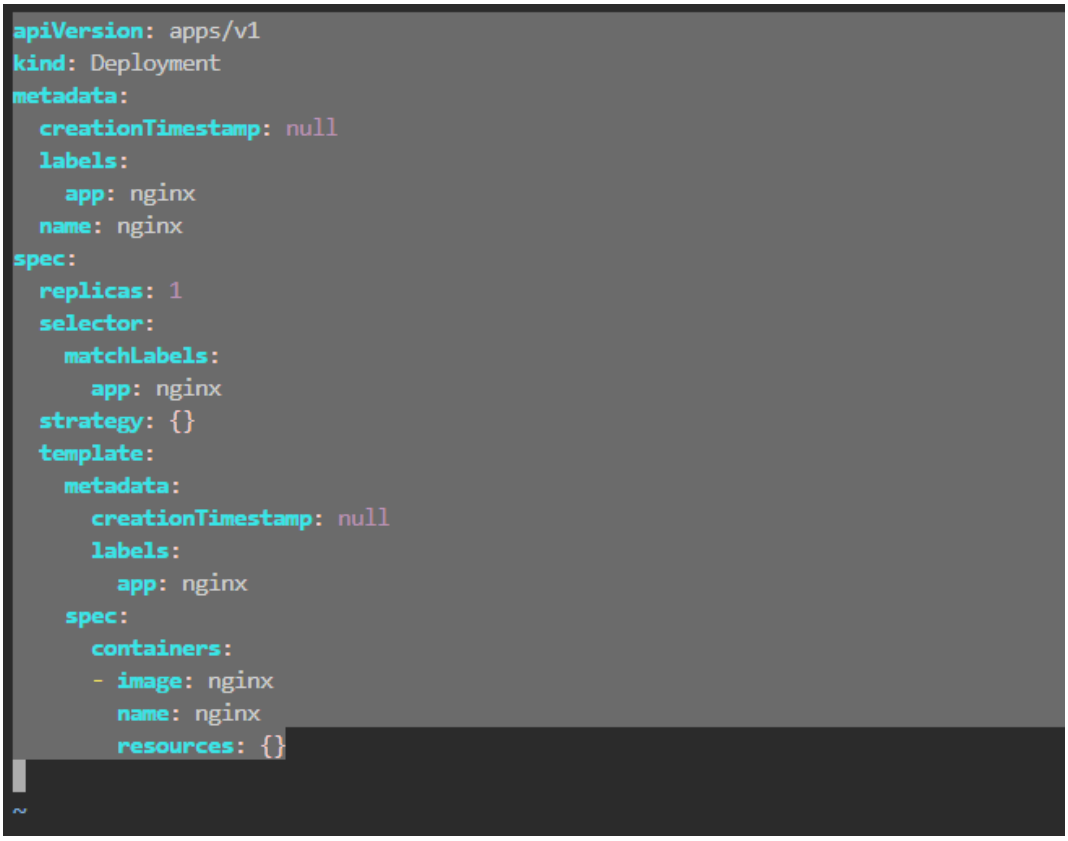
1.1 Initiate the creation of a configuration file for the Nginx deployment:

vi nginx.yaml



1.2 Insert the following code into the **nginx.yaml** file:

```
apiVersion: apps/v1
kind: Deployment
metadata:
 labels:
  app: nginx
 name: nginx
spec:
 replicas: 1
 selector:
  matchLabels:
   app: nginx
 template:
  metadata:
   labels:
    app: nginx
  spec:
   containers:
   - image: nginx
    name: nginx
```



1.3 Create the Nginx deployment using the configuration file:
kubectl create -f nginx.yaml

```
labsuser@master:~$ kubectl create -f nginx.yaml
deployment.apps/nginx created
labsuser@master:~$
```

1.4 Use the following commands to verify deployments and pods:
kubectl get deployments
kubectl get pods

```
labsuser@master:~$ kubectl create -f nginx.yaml
deployment.apps/nginx created
labsuser@master:~$ kubectl get deployments
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
admin   0/1     1            0           41h
nginx   1/1     1            1           90s
labsuser@master:~$ kubectl  get pods
NAME                     READY   STATUS             RESTARTS      AGE
admin-56d684dff9-zjfhc   0/1     ImagePullBackOff   0             41h
counter                  1/1     Running            3 (14m ago)   21h
nginx-7854ff8877-mvrtr   1/1     Running            0             112s
pod-demo                 1/1     Running            7 (14m ago)   5d14h
labsuser@master:~$
```

1.5 Use the following command to view the logs of the Nginx pod:
kubectl logs nginx-7854ff8877-mvrtr

```
labsuser@master:~$ kubectl create -f nginx.yaml
deployment.apps/nginx created
labsuser@master:~$ kubectl get deployments
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
admin   0/1     1            0           41h
nginx   1/1     1            1           90s
labsuser@master:~$ kubectl  get pods
NAME                     READY   STATUS             RESTARTS      AGE
admin-56d684dff9-zjfhc   0/1     ImagePullBackOff   0             41h
counter                  1/1     Running            3 (14m ago)   21h
nginx-7854ff8877-mvrtr   1/1     Running            0             112s
pod-demo                 1/1     Running            7 (14m ago)   5d14h
labsuser@master:~$ kubectl logs nginx-7854ff8877-mvrtr
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2023/10/12 04:56:50 [notice] 1#1: using the "epoll" event method
2023/10/12 04:56:50 [notice] 1#1: nginx/1.25.2
2023/10/12 04:56:50 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2023/10/12 04:56:50 [notice] 1#1: OS: Linux 6.2.0-1013-aws
2023/10/12 04:56:50 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1024:524288
2023/10/12 04:56:50 [notice] 1#1: start worker processes
2023/10/12 04:56:50 [notice] 1#1: start worker process 29
2023/10/12 04:56:50 [notice] 1#1: start worker process 30
labsuser@master:~$
```

Note: Replace **nginx-7854ff8877-mvrtr** with the pod name from Step 1.4

By following these steps, you have successfully monitored the Nginx pod's logs following the creation of its deployment in Kubernetes.