Lab:6 configuring liveness and readiness probes for a pod in a Kubernetes deployment file

Lab Task:

Define a pod with a single container running the nginx image. Also specify a readiness probe that checks the root path of the container's web server every 10 seconds with an initial delay of 5 seconds.

Additionally, define a liveness probe that checks the root path of the container's web server every 20 seconds with an initial delay of 15 seconds.

Step:1 verify if namespace named my-namespace if not Create a namespace.

Kubectl get ns

If you don’t get namespace named my-namespace execute below command to create.

kubectl create namespace my-namespace

Step:2 Define Pod Configuration

Create a file named my-pod.yaml and enter below configuration, that includes liveness and readiness probes.

apiVersion: v1

kind: Pod

metadata:

name: my-pod

spec:

containers:

- name: my-container

image: nginx

readinessProbe:

httpGet:

path: /

port: 80

initialDelaySeconds: 5

periodSeconds: 10

livenessProbe:

httpGet:

path: /

port: 80

initialDelaySeconds: 15

periodSeconds: 20

configuration file defines a pod with a single container running the nginx image. We have also specified a readiness probe that checks the root path of the container's web server every 10 seconds with an initial delay of 5 seconds. Additionally, we have specified a liveness probe that checks the root path of the container's web server every 20 seconds with an initial delay of 15 seconds.

Step:3 Create pod by executing below command

kubectl create -f my-pod.yaml --namespace my-namespace

This will create the pod using the configuration defined in my-pod.yaml in the my-namespace namespace.

Step:4 Verify that the Probes are Working.

To verify that the probes are working, you can run the following command:

kubectl describe pod my-pod --namespace my-namespace

This will output detailed information about the pod, including the status of the liveness and readiness probes. You should see that both probes are succeeding.

Step:5 update the probes to test what happens when they fail. Edit the my-pod.yaml file and change the port number for the liveness probe to an invalid port, like 8080 as specified in below configuration.

apiVersion: v1

kind: Pod

metadata:

name: my-pod

spec:

containers:

- name: my-container

image: nginx

readinessProbe:

httpGet:

path: /

port: 80

initialDelaySeconds: 5

periodSeconds: 10

livenessProbe:

httpGet:

path: /

port: 8080

initialDelaySeconds: 15

periodSeconds: 20

Step:6 Save the changes make to the file and update the pod executing below command:

kubectl apply -f my-pod.yaml --namespace my-namespace

Step 7: Verify that the Probes are Failing by executing below command

kubectl describe pod my-pod --namespace my-namespace

You should see that the liveness probe is failing because it cannot connect to port 8080.

Summary:

In this lab we configured liveness and readiness probes for a pod in Kubernetes, and tested their behavior when they succeed and fail.