**Task 8: Deploy the containerized application to AKS using a Kubernetes deployment YAML file. Include readiness and liveness probes.**

**Output:** deployment.yaml, deployment logs, screenshots of kubectl get pods and kubectl describe.

**# deployment.yaml**

apiVersion: apps/v1

kind: Deployment

metadata:

name: nginx-deployment

spec:

replicas: 2

selector:

matchLabels:

app: nginx

template:

metadata:

labels:

app: nginx

spec:

containers:

- name: nginx

image: nginx:latest

ports:

- containerPort: 80

livenessProbe:

httpGet:

path: /

port: 80

initialDelaySeconds: 5

periodSeconds: 10

readinessProbe:

httpGet:

path: /

port: 80

initialDelaySeconds: 5

periodSeconds: 10

**# deployment logs**

kubectl logs nginx-deployment-69d8cf9b4b-l5bdt

/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

2025/02/14 06:30:24 [notice] 1#1: using the "epoll" event method

2025/02/14 06:30:24 [notice] 1#1: nginx/1.27.4

2025/02/14 06:30:24 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)

2025/02/14 06:30:24 [notice] 1#1: OS: Linux 5.15.0-1079-azure

2025/02/14 06:30:24 [notice] 1#1: getrlimit(RLIMIT\_NOFILE): 1048576:1048576

2025/02/14 06:30:24 [notice] 1#1: start worker processes

2025/02/14 06:30:24 [notice] 1#1: start worker process 29

2025/02/14 06:30:24 [notice] 1#1: start worker process 30

10.1.1.5 - - [14/Feb/2025:06:30:33 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:30:33 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:30:43 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:30:43 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:30:53 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:30:53 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:31:03 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:31:03 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:31:13 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-probe/1.30" "-"

10.1.1.5 - - [14/Feb/2025:06:31:13 +0000] "GET / HTTP/1.1" 200 615 "-" "kube-prob

**# kubectl get pod**

NAME READY STATUS RESTARTS AGE

nginx-deployment-69d8cf9b4b-6vx6x 1/1 Running 0 12m

nginx-deployment-69d8cf9b4b-l5bdt 1/1 Running 0 11m

**# kubectl describe pod nginx-deployment-69d8cf9b4b-6vx6x**

Name: nginx-deployment-69d8cf9b4b-6vx6x

Namespace: default

Priority: 0

Service Account: default

Node: aks-default-32238500-vmss000001/10.1.1.4

Start Time: Fri, 14 Feb 2025 12:00:12 +0530

Labels: app=nginx

pod-template-hash=69d8cf9b4b

Annotations: <none>

Status: Running

IP: 10.244.0.59

IPs:

IP: 10.244.0.59

Controlled By: ReplicaSet/nginx-deployment-69d8cf9b4b

Containers:

nginx:

Container ID: containerd://c24caafb6b84335a7f9561548fd6f32bbff9045d452aa3e7917df23463e86eff

Image: nginx:latest

Image ID: docker.io/library/nginx@sha256:91734281c0ebfc6f1aea979cffeed5079cfe786228a71cc6f1f46a228cde6e34

Port: 80/TCP

Host Port: 0/TCP

State: Running

Started: Fri, 14 Feb 2025 12:00:14 +0530

Ready: True

Restart Count: 0

Liveness: http-get http://:80/ delay=5s timeout=1s period=10s #success=1 #failure=3

Readiness: http-get http://:80/ delay=5s timeout=1s period=10s #success=1 #failure=3

Environment: <none>

Mounts:

/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-4wkbn (ro)

Conditions:

Type Status

PodReadyToStartContainers True

Initialized True

Ready True

ContainersReady True

PodScheduled True

Volumes:

kube-api-access-4wkbn:

Type: Projected (a volume that contains injected data from multiple sources)

TokenExpirationSeconds: 3607

ConfigMapName: kube-root-ca.crt

ConfigMapOptional: <nil>

DownwardAPI: true

QoS Class: BestEffort

Node-Selectors: <none>

Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s

node.kubernetes.io/unreachable:NoExecute op=Exists for 300s

Events:

Type Reason Age From Message

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Normal Scheduled 12m default-scheduler Successfully assigned default/nginx-deployment-69d8cf9b4b-6vx6x to aks-default-32238500-vmss000001

Normal Pulling 12m kubelet Pulling image "nginx:latest"

Normal Pulled 12m kubelet Successfully pulled image "nginx:latest" in 388ms (388ms including waiting). Image size: 72188133 bytes.

Normal Created 12m kubelet Created container nginx

Normal Started 12m kubelet Started container nginx



