Aaditya Rajput
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Lab 2: Deploying a request splitting ambassador and a load balancer with Kubernetes

Objective:
1. Learn how to configure and run a request splitter using Nginx.
2. Be familiar with the ConfigMap tool in Kubernetes.
3. Learn how to use the curl command for requesting an HTTP method.
4. Learn how to configure load balancer services
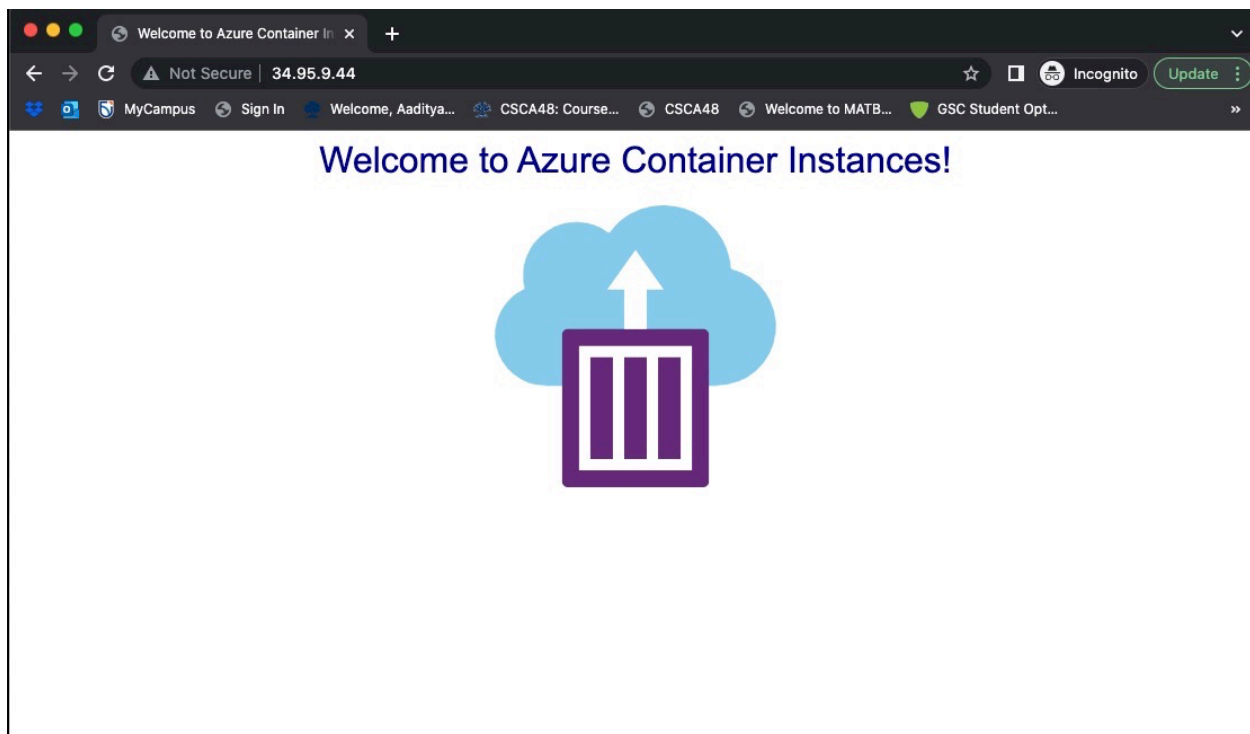5. Get Familiar with load balancing pattern

Part 2: https://youtu.be/raCLKmiVyGE

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aadiraj09@cloudshell:~ (psyched-coast-362905)$
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment web-deployment --port=80 --type=ClusterIP --name webdeployment
Error from server (AlreadyExists): services "webdeployment" already exists
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get service
NAME              TYPE        CLUSTER-IP     EXTERNAL-IP    PORT(S)     AGE
kubernetes        ClusterIP   10.80.0.1      <none>         443/TCP     81m
webdeployment     ClusterIP   10.80.10.118   <none>         80/TCP      9m9s
webdeploymentzzz  ClusterIP   10.80.3.103    <none>         80/TCP      8m21s
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment web-deployment --port=80 --type=ClusterIP --name webdeploymentccc^C
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment web-deployment --port=80 --type=ClusterIP --name webdeployment
Error from server (AlreadyExists): services "webdeployment" already exists
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get service
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get deployement
error: the server doesn't have a resource type "deployement"
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get deployment
NAME            READY   UP-TO-DATE   AVAILABLE   AGE
web-deployment  2/2     2            2           15m
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl create -f experiment-deployment.yaml
deployment.apps/experiment-deployment created
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get deployment
NAME                   READY   UP-TO-DATE   AVAILABLE   AGE
experiment-deployment  2/2     2            2           8s
web-deployment         2/2     2            2           40m
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment experiment-deployment --port=80 --type=ClusterIP --name
experiment-deployment
error: flag needs an argument: --name
See 'kubectl expose --help' for usage.
-bash: experiment-deployment: command not found
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment experiment-deployment --port=80 --type=ClusterIP --name experiment-deployment
service/experiment-deployment exposed
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl create configmap ambassador-config --from-file=conf.d
configmap/ambassador-config created
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl create -f ambassador-deployment.yaml
deployment.apps/ambassador-deployment created
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl expose deployment ambassador-deployment --port=80 --type=LoadBalancer

service/ambassador-deployment exposed
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get pod
NAME                                      READY   STATUS    RESTARTS   AGE
ambassador-deployment-78bdc6b89-bz6h7     1/1     Running   0          2m35s
ambassador-deployment-78bdc6b89-c6mjb     1/1     Running   0          2m35s
experiment-deployment-7b47cbd668-4wz8j    1/1     Running   0          20m
experiment-deployment-7b47cbd668-vgq8j    1/1     Running   0          20m
web-deployment-6fdbb5c6bb-5kpm6           1/1     Running   0          60m
web-deployment-6fdbb5c6bb-8ztkv           1/1     Running   0          60m
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get service
NAME                   TYPE          CLUSTER-IP     EXTERNAL-IP   PORT(S)        AGE
ambassador-deployment  LoadBalancer  10.80.7.242    34.95.9.44    80:31994/TCP   3m8s
experiment-deployment  ClusterIP     10.80.9.39     <none>        80/TCP         18m
kubernetes             ClusterIP     10.80.0.1      <none>        443/TCP        132m
webdeployment          ClusterIP     10.80.10.118   <none>        80/TCP         60m
webdeploymentzzz       ClusterIP     10.80.3.103    <none>        80/TCP         59m
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get deployement
error: the server doesn't have a resource type "deployement"
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get deployment
NAME                   READY   UP-TO-DATE   AVAILABLE   AGE
ambassador-deployment  2/2     2            2           5m16s
experiment-deployment  2/2     2            2           22m
web-deployment         2/2     2            2           63m
aadiraj09@cloudshell:~ (psyched-coast-362905)$ for _ in {1..20}; do curl http://34.95.9.44 -s > output.txt; done
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl logs -l run=web-deployment
listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl logs -l run=experiment-deployment
listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$ curl http://34.95.9.44
<!DOCTYPE html>
```

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service/ambassador-deployment exposed
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl get pod
NAME                                      READY   STATUS    RESTARTS   AGE
ambassador-deployment-78bdc6b89-bz6h7     1/1     Running   0          2m35s
ambassador-deployment-78bdc6b89-c6mjb     1/1     Running   0          2m35s
experiment-deployment-7b47cbd668-4wz8j    1/1     Running   0          20m
experiment-deployment-7b47cbd668-vgq8j    1/1     Running   0          20m
web-deployment-6fdbb5c6bb-5kpm6           1/1     Running   0          60m
web-deployment-6fdbb5c6bb-8ztkv           1/1     Running   0          60m
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listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl logs -l run=experiment-deployment
listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$ curl http://34.95.9.44
<!DOCTYPE html>

</html>
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl logs -l run=web-deployment
listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$ kubectl logs -l run=experiment-deployment
listening on port 80
listening on port 80
aadiraj09@cloudshell:~ (psyched-coast-362905)$
```


Part 3: https://youtu.be/zici6EpZjzU

Auto Scaler: https://youtu.be/07fB5c8rhd4

Separate terminal while infinity loop is happening in the first terminal: