Project-03: blue-green

Create green deployment

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project/starter
root@galal-sre-02:~/nd087-c3-deployment-roulette-project/starter
apiVersion: apps/v1
kind: Deployment
metadata:
  labels:
   app: green
  name: green
  namespace: udacity
spec:
  replicas: 3
  selector:
    matchLabels:
      app: green
  template:
    metadata:
      labels:
        app: green
    spec:
      containers:
        - name: nginx
          image: nginx
          ports:
            - containerPort: 80
          volumeMounts:
            - mountPath: /usr/share/nginx/html
              name: configmap-vol
      nodeSelector:
        kubernetes.io/os: linux
```

```
      volumes:
        - name: configmap-vol
          configMap:
            name: green-config
```

Creating blue-green.sh

```
vim blue-green.sh

#!/bin/bash

GREEN_PATH="starter/apps/blue-green/green.yml"

# Deploying
echo "[*] Deploying Green"
kubectl apply -f ${GREEN_PATH}

ATTEMPTS=0
ROLLOUT_STATUS_CMD="kubectl rollout status deployment/green -n u
until $ROLLOUT_STATUS_CMD || [ $ATTEMPTS -eq 60 ]; do
  $ROLLOUT_STATUS_CMD
  ATTEMPTS=$((attempts + 1))
  sleep 1
done
echo "[+] Green deployment successful!"

echo "[*] Waiting for green service to come up."
SERVICE_URL="curl $(k get svc | grep green-svc | awk '{print $4
ATTEMPTS=0
until $SERVICE_URL 2> /dev/null || [ $ATTEMPTS -eq 300 ]; do
  echo "Service URL not available yet ..."
  sleep 2
done
```

```
if ${SERVICE_URL} 2> /dev/null; then
  echo "[+] URL is up"
else
  echo "[-] URL not initialized"
fi
```

Under terraform `infra/` create new terraform that will create k8s green service and green dns record

```
vim infra/green.tf
resource "kubernetes_service" "green" {
  metadata {
    name      = "green-svc"
    namespace = local.name
    annotations = {
      "service.beta.kubernetes.io/aws-load-balancer-type"
      "service.beta.kubernetes.io/aws-load-balancer-nlb-target-t
    }
  }
  spec {
    selector = {
      app = "green"
    }

    port {
      port        = 80
      target_port = 80
    }

    type = "LoadBalancer"
  }

  depends_on = [
    module.project_eks
  ]
}
```

```
resource "aws_route53_record" "green" {
  zone_id = aws_route53_zone.private_dns.id
  name    = "blue-green"
  type    = "CNAME"
  ttl     = "5"

  weighted_routing_policy {
    weight = 1
  }

  set_identifier = "green"
  records        = [kubernetes_service.green.status.0.load_balan
}
```

Runing script to deploy green and waiting for service URL

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project# ./blue
[*] Deploying Green
deployment.apps/green created
Waiting for deployment "green" rollout to finish: 0 of 3 updated
Waiting for deployment "green" rollout to finish: 1 of 3 updated
Waiting for deployment "green" rollout to finish: 2 of 3 updated
deployment "green" successfully rolled out
[+] Green deployment successful!
[*] Waiting for green service to come up.
./blue-green.sh: line 19: k: command not found
Service URL not available yet ...
Service URL not available yet ...
Service URL not available yet ...
```

Getting running pods

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project# k get
NAME                            READY   STATUS    RESTARTS   AGE
blue-9b56b55cc-55x4c            1/1     Running   0          170m
blue-9b56b55cc-86z8c            1/1     Running   0          170m
blue-9b56b55cc-ttlhv            1/1     Running   0          168m
canary-v2-8dc775cd6-sc46l       1/1     Running   0          77m
canary-v2-8dc775cd6-wfmw7       1/1     Running   0          73m
canary-v2-8dc775cd6-z4rrw       1/1     Running   0          75m
green-568777db7-5npqt           1/1     Running   0          46s
green-568777db7-lcr4l           1/1     Running   0          46s
green-568777db7-rzd2w           1/1     Running   0          46s
hello-world-7b67f6885d-wttg5    1/1     Running   0          168m
```

Terraform create new k8s green-svc and create DNS record

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project/starter
...
Enter a value: yes

kubernetes_service.green: Creating...
kubernetes_service.green: Creation complete after 5s [id=udacity
aws_route53_record.green: Creating...
aws_route53_record.green: Still creating... [10s elapsed]
aws_route53_record.green: Creation complete after 13s [id=Z0764

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.

Outputs:

account_id = "204340383769"
caller_arn = "arn:aws:iam::204340383769:user/admin"
caller_user = "AIDAS7E5C2AMSWFGYAWC2"
```

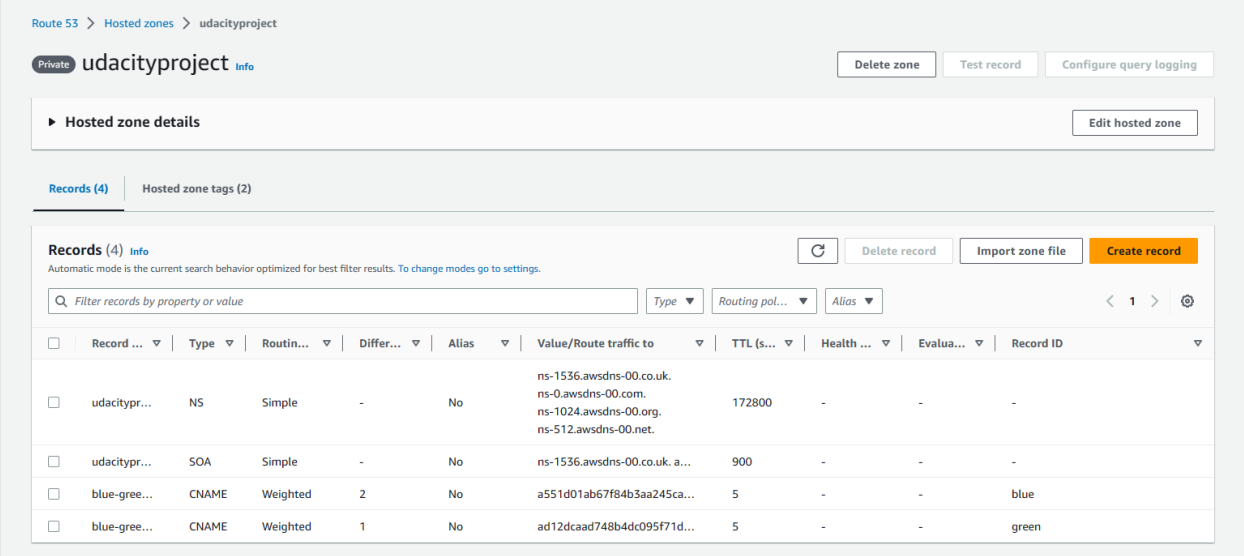
Output of blue-green.sh

```
Service URL not available yet ...
<html>
<h1>This is version GREEN</h1>
</html>
<html>
<h1>This is version GREEN</h1>
</html>
[+] URL is up
```

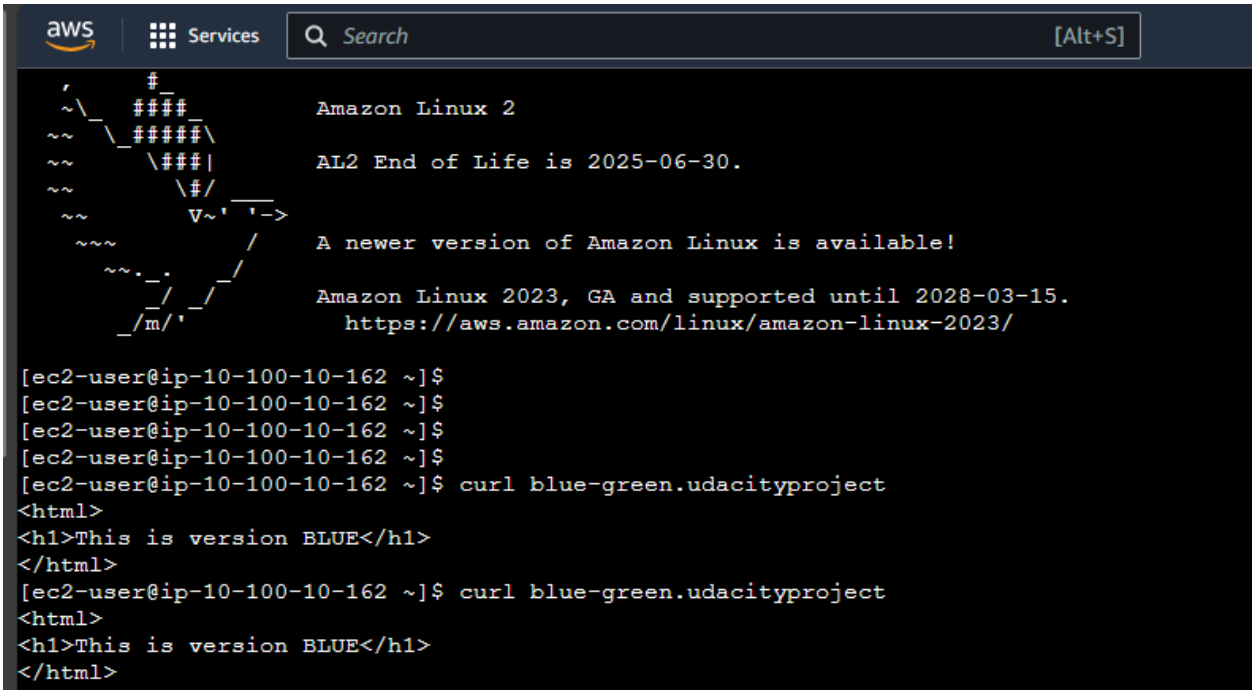
Show service

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project# k get
NAME          TYPE           CLUSTER-IP       EXTERNAL-IP
blue-svc      LoadBalancer   172.20.119.148   a551d01ab67f84b3a
canary-svc    ClusterIP      172.20.88.145    <none>
green-svc     LoadBalancer   172.20.82.216    ad12dcaad748b4dc0
hello-world   LoadBalancer   172.20.84.109    a1d199afdae164333
```

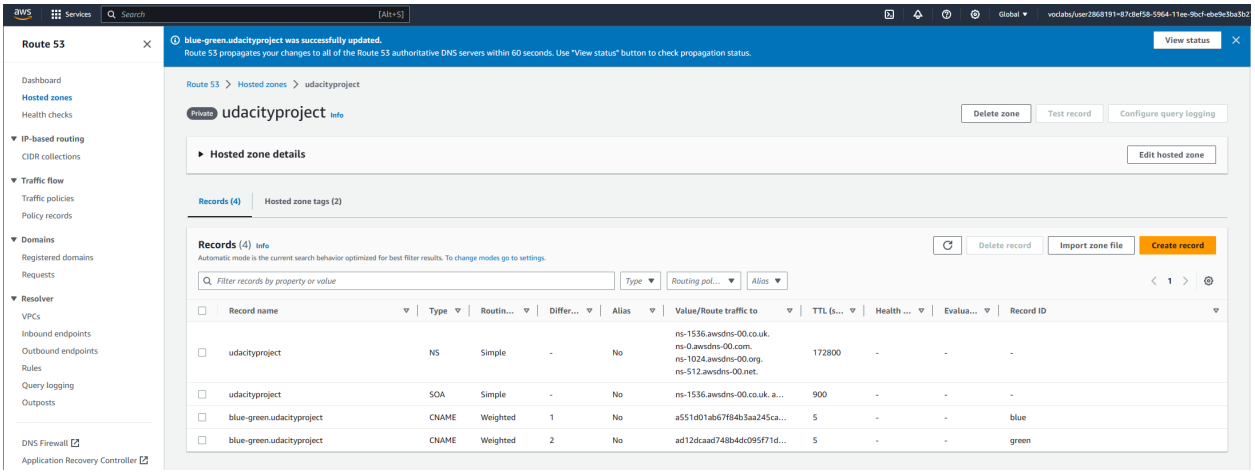
From Route53 blue-green.udacityproject



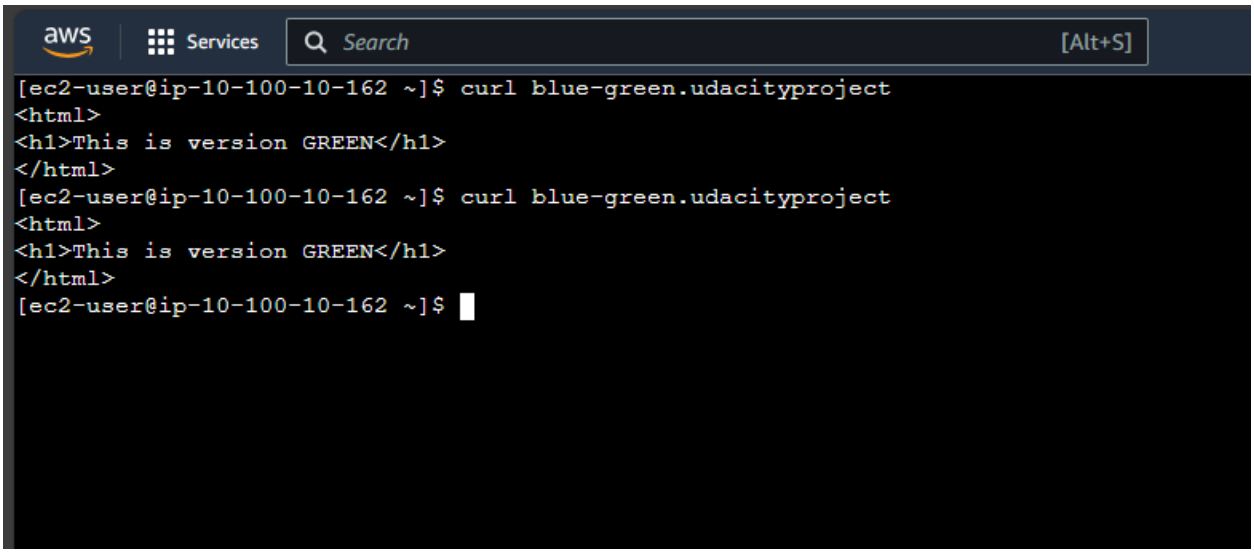
Curl from instance



I changed dns weight for blue ⇒ 1 and green ⇒ 2, so all traffics will go to green



Testing



Now I can destroy blue env

```
root@galal-sre-02:~/nd087-c3-deployment-roulette-project# k dele
deployment.apps "blue" deleted
root@galal-sre-02:~/nd087-c3-deployment-roulette-project# k get
NAME                              READY   STATUS    RESTARTS   AGE
canary-v2-8dc775cd6-sc46l         1/1     Running   0          103m
canary-v2-8dc775cd6-wfmw7         1/1     Running   0          100m
canary-v2-8dc775cd6-z4rrw         1/1     Running   0          102m
green-568777db7-5npqt             1/1     Running   0          27m
green-568777db7-lcr4l             1/1     Running   0          27m
green-568777db7-rzd2w             1/1     Running   0          27m
hello-world-7b67f6885d-wttg5      1/1     Running   0          3h15
```