Kubernetes 201

Project Case Study

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K8S-201
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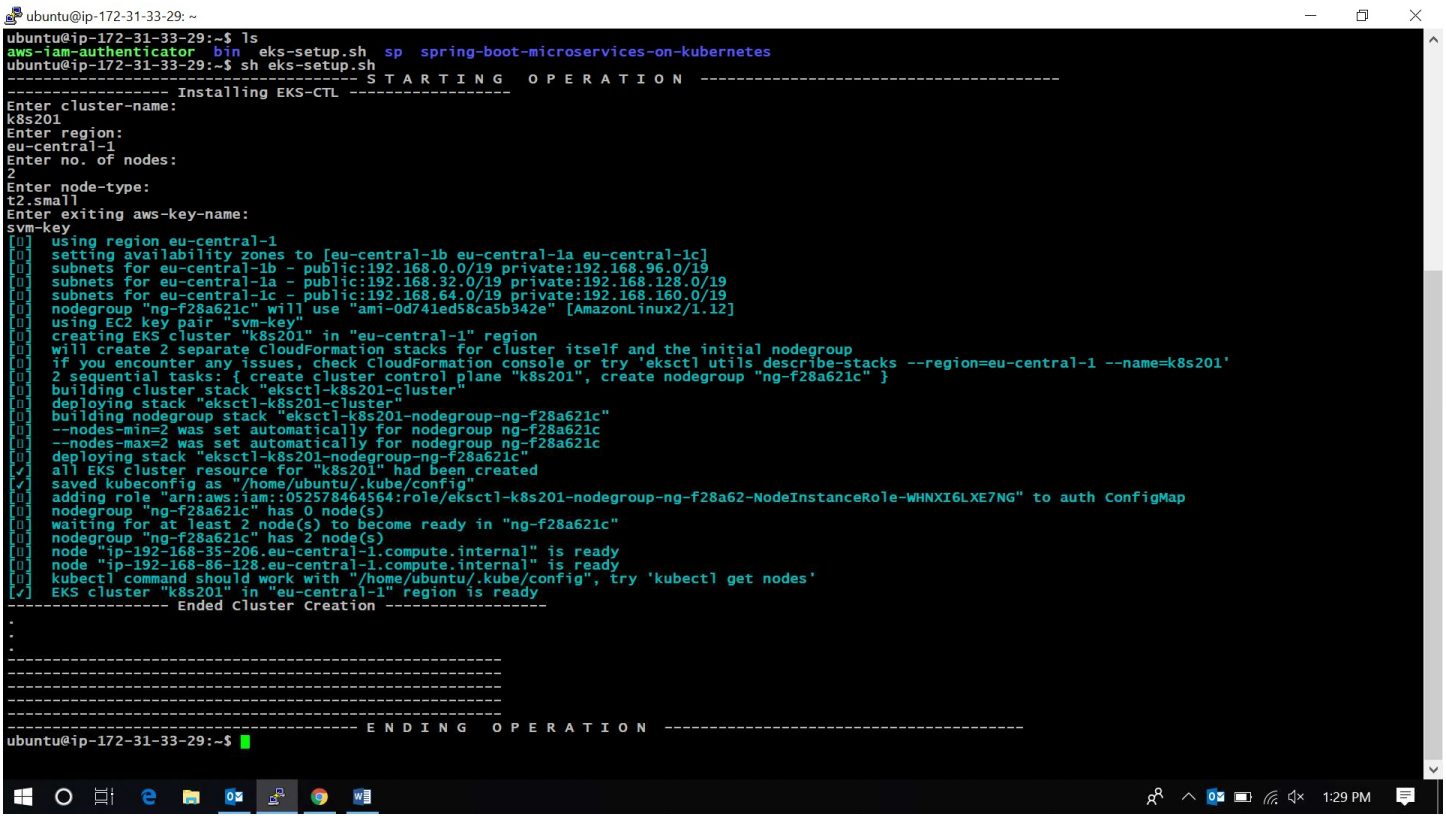
1. Creating a Kubernetes Cluster on AWS

Pre-requisites:

- AWS Account with active subscription
- A Driver VM to run scripts and commands
- eksctl installed in a VM
- awscli installed in the VM

Code:

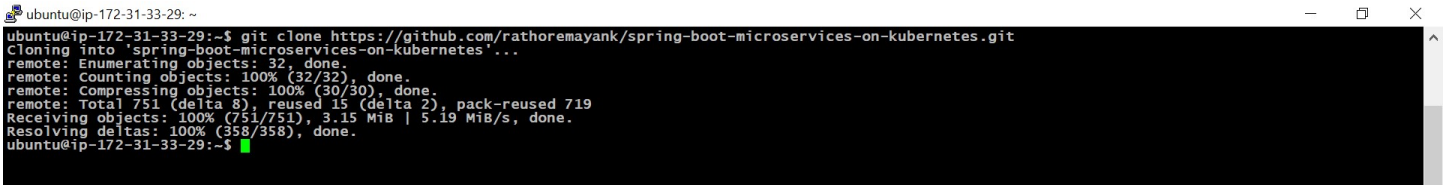
```
$ eksctl create cluster --name $clustername --nodes=$nodes --ssh-access  --ssh-public-key=$key --region=$region --node-type=$nodetype
```



2. Cloning the git-repo

Code:

```
$ git clone https://github.com/rathoremayank/spring-boot-microservices-on-kubernetes.git
```



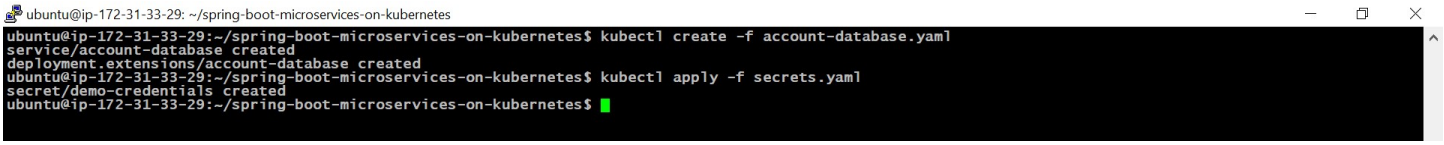
3. Creating Services and Deployments on the Kubernetes Cluster

3.1. Creating the database service

$ kubectl create -f account-database.yaml

3.2. Providing secrets

$ kubectl apply -f secrets.yaml



3.3. Creating Spring Boot Micro-services

3.3.1. Building projects using maven

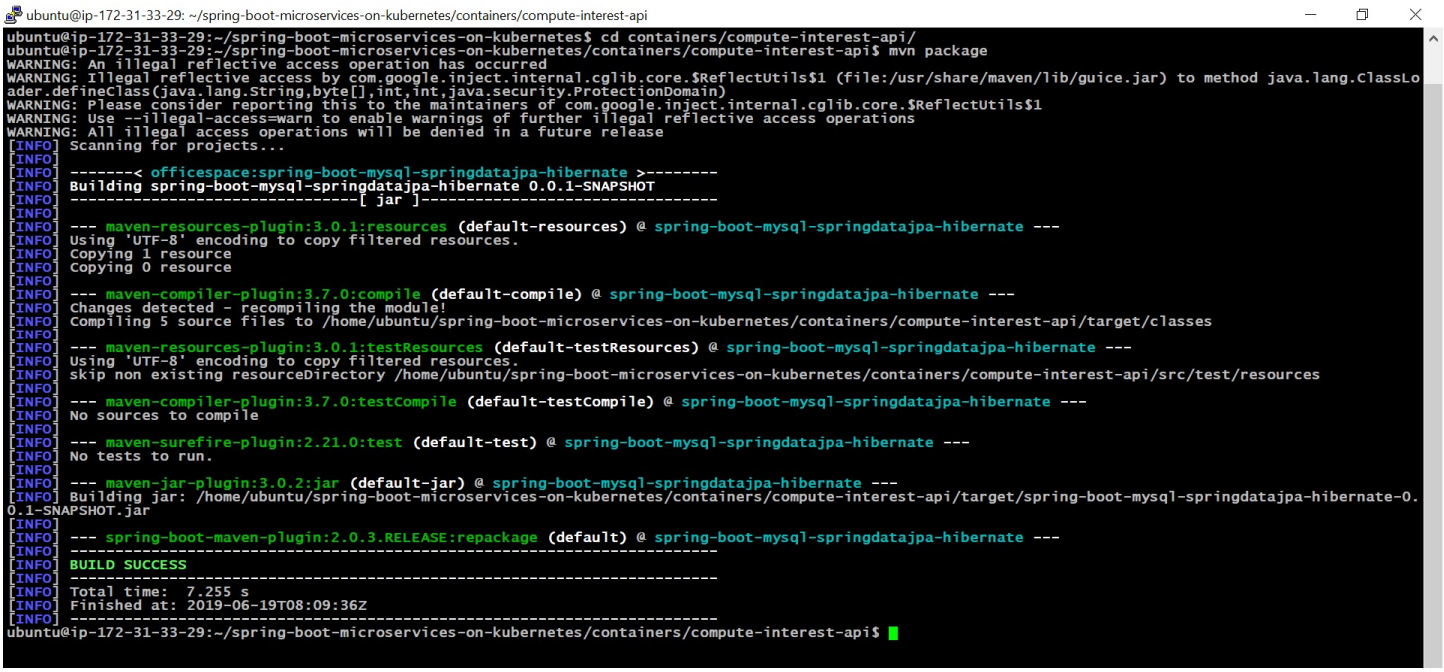
Pre-requisites:

- Apache Maven installed in the VM

Commands:

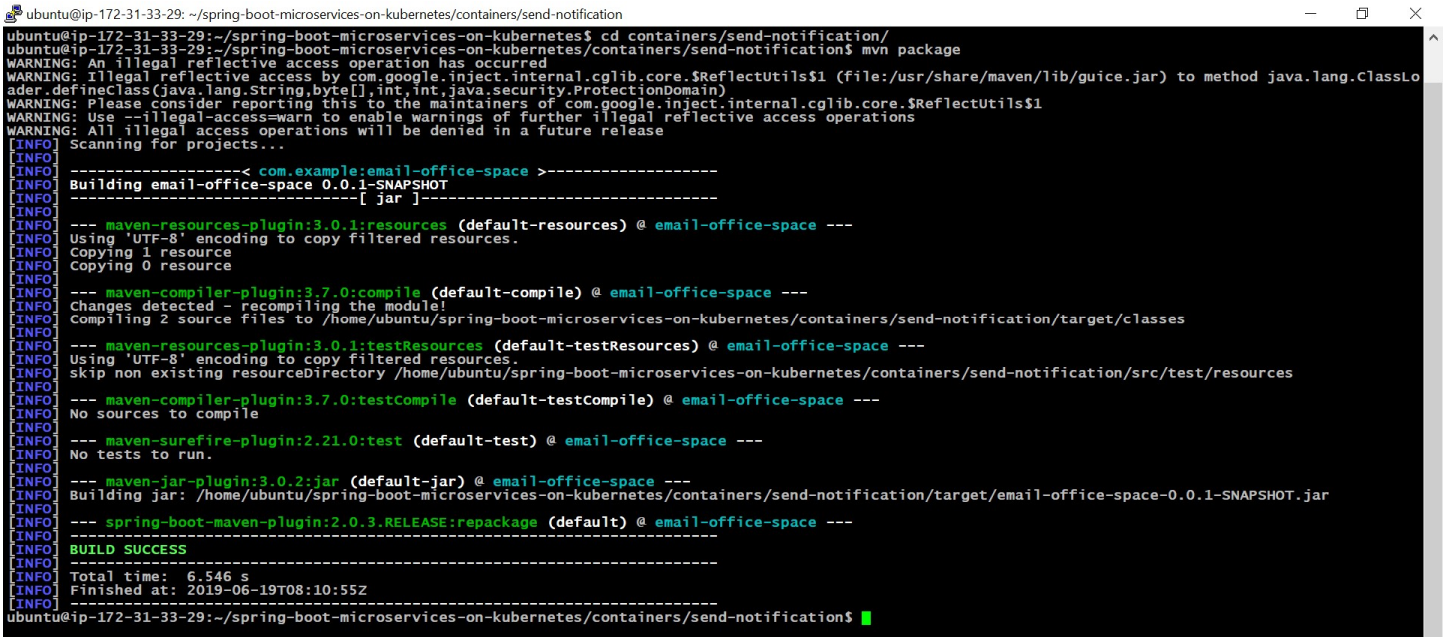
Go to containers/compute-interest-api

$ mvn package



Go to containers/send-notification

$ mvn package



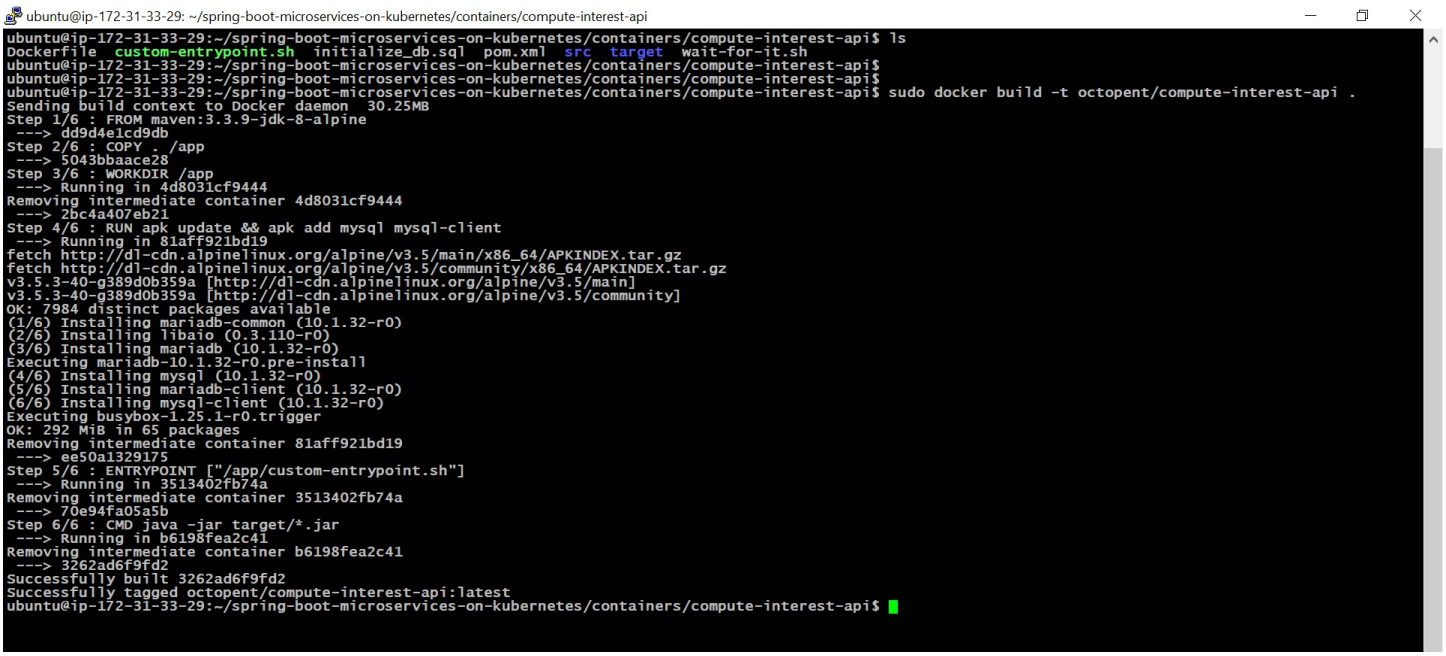
3.3.2. Building docker images for Spring Boot Services

Pre-requisites:

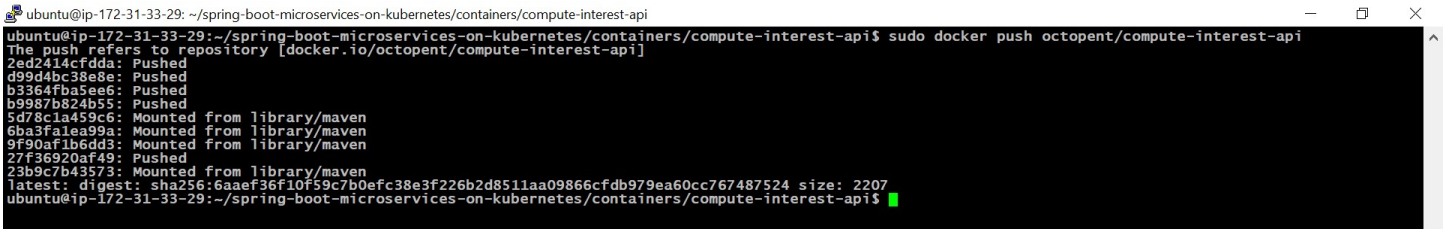
- Docker installation on VM
- Dockerhub account

Commands:

$ docker build -t ***<your-dockerhub-username>***/compute-interest-api .

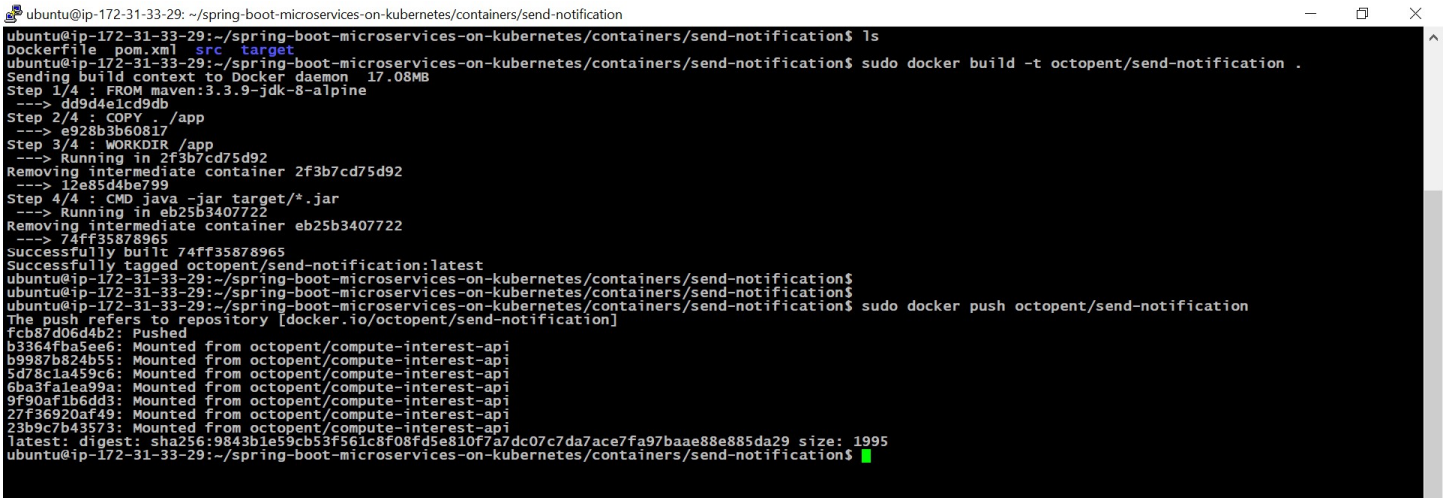


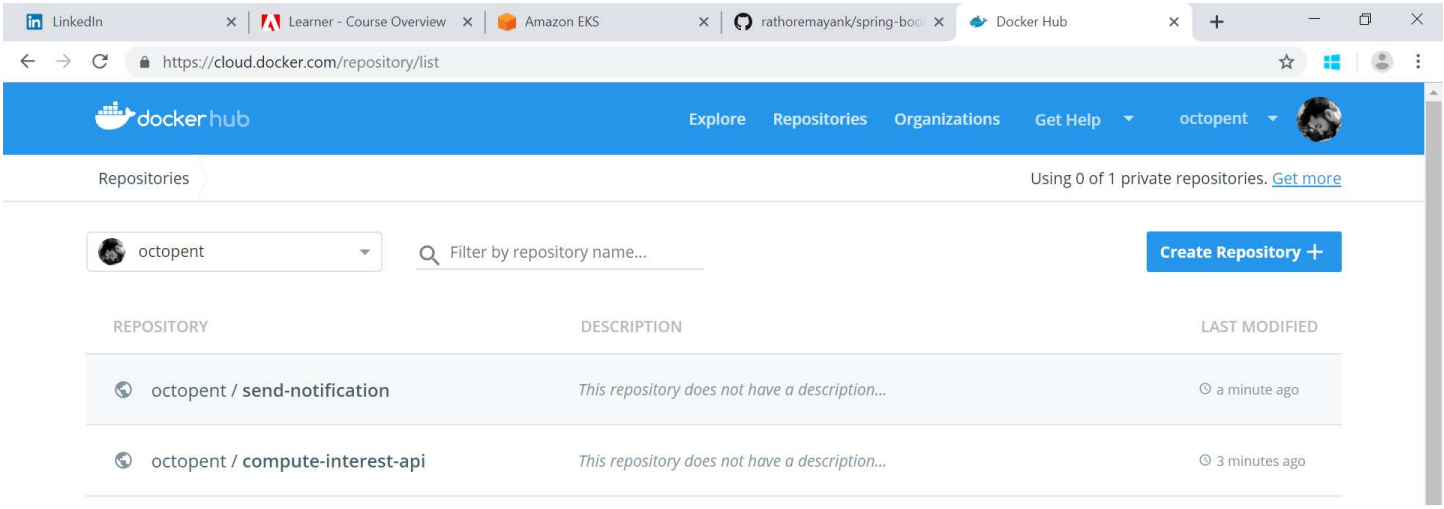
$ docker push ***<your-dockerhub-username>***/compute-interest-api



$ docker build -t <*your-dockerhub-username*>/send-notification .

$ docker push <*your-dockerhub-username*>/send-notification





3.3.3. Deploying the micro-services to the Kubernetes Cluster

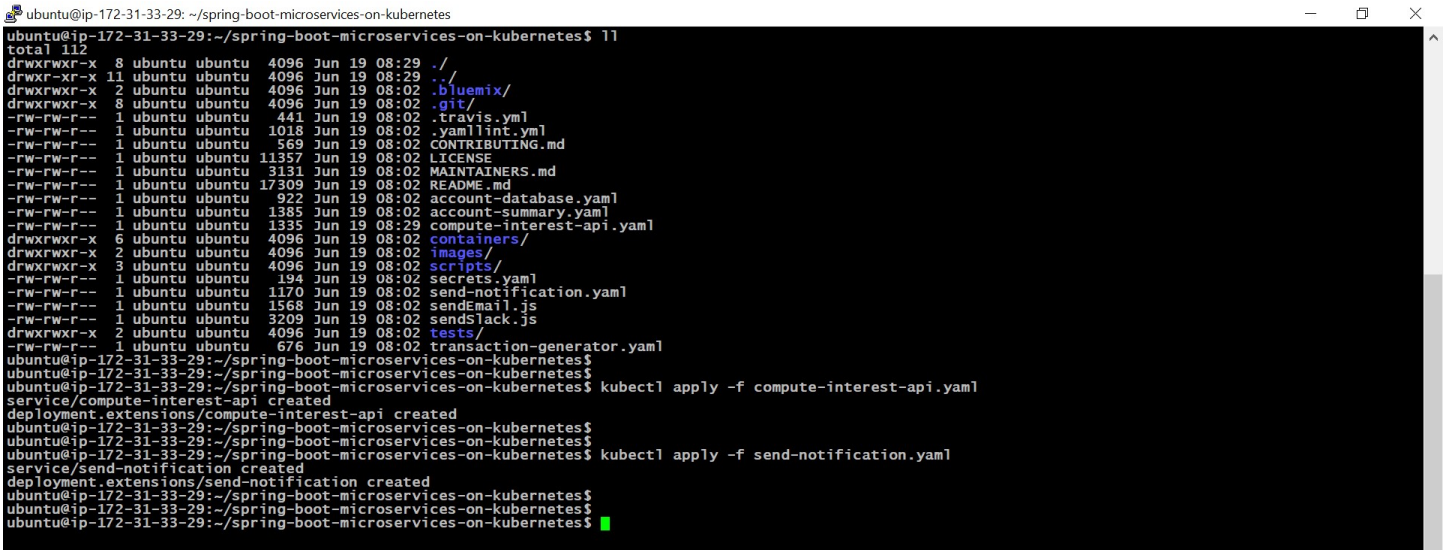
Pre-requisites:

- kubectl installation on the VM
- Healthy running cluster with kubectl configured

Commands:

$ kubectl apply -f compute-interest-api.yaml

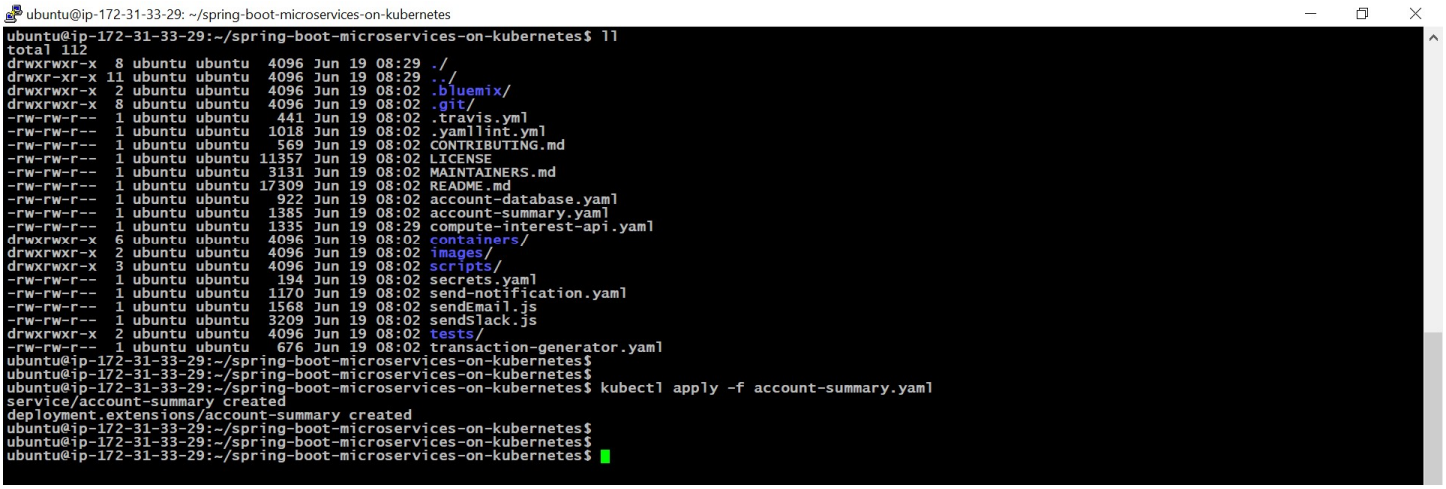
$ kubectl apply -f send-notification.yaml



3.3.4. Deploying the front-end service

Commands:

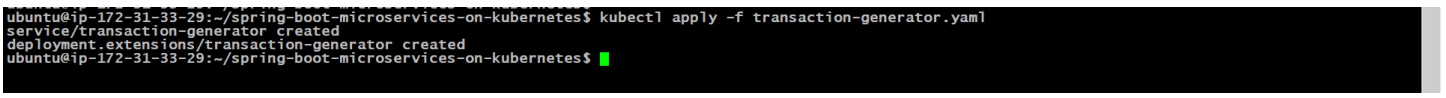
```
$ kubectl apply -f account-summary.yaml
```



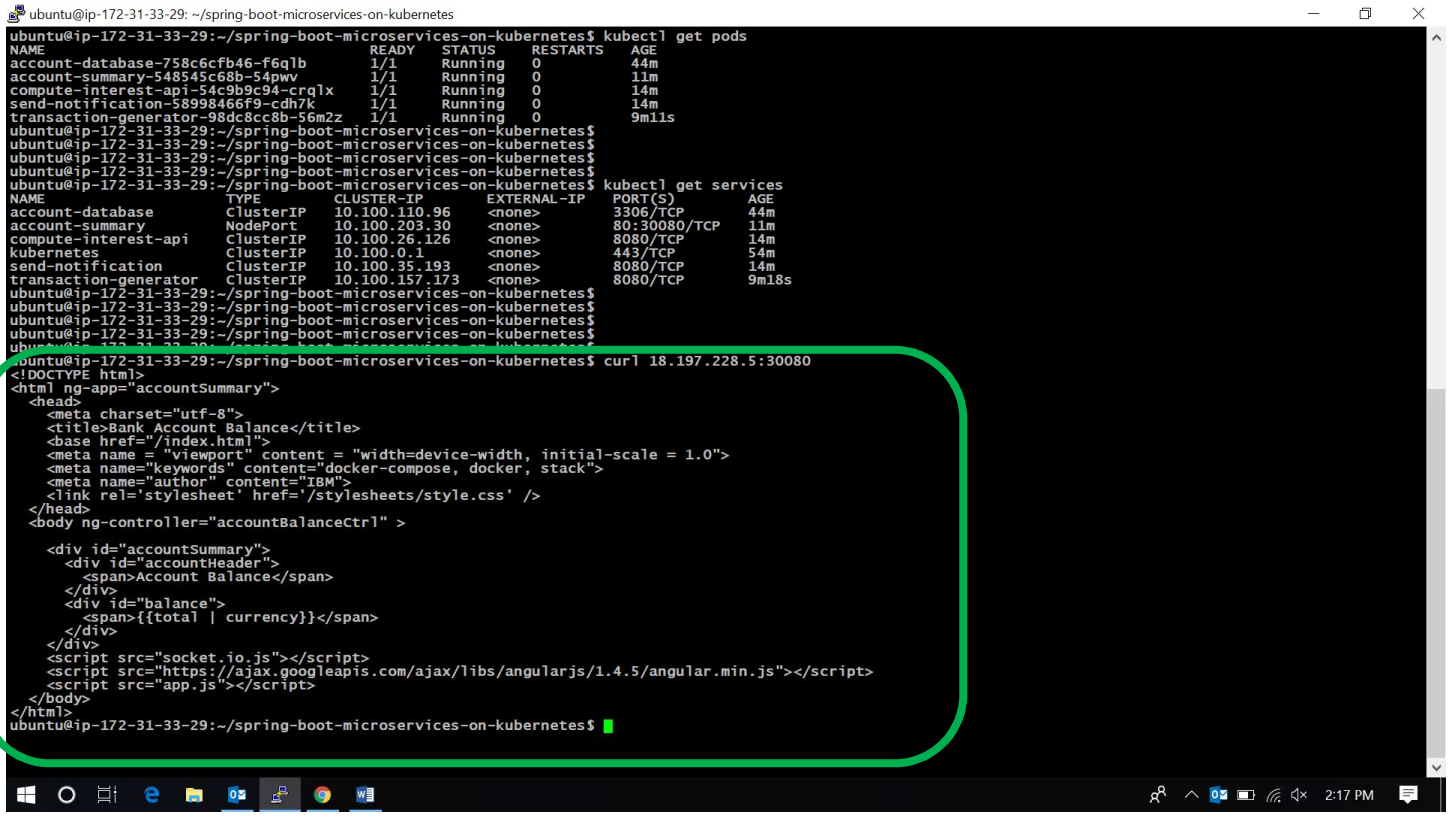
3.3.5. Deploying the Transaction Generator Service

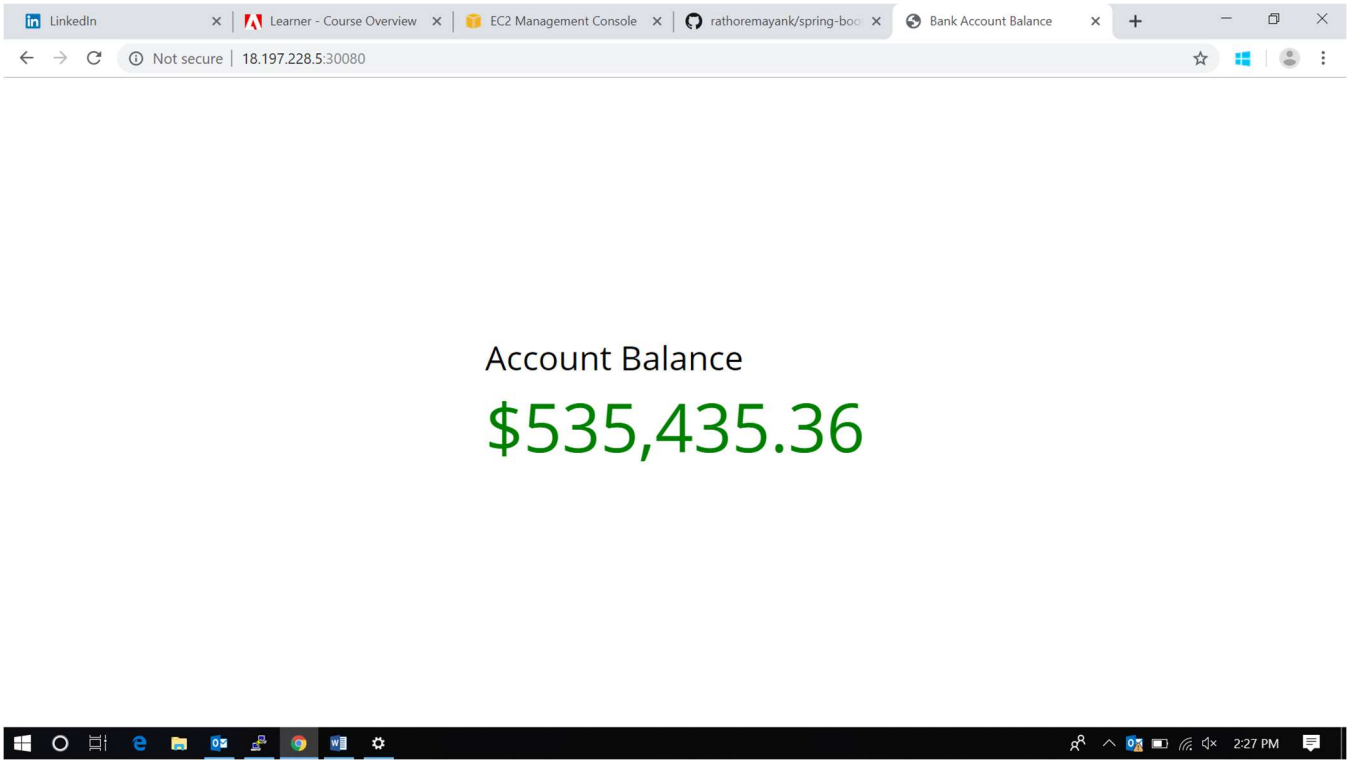
Commands:

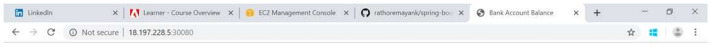
```
$ kubectl apply -f transaction-generator.yaml
```



4. Accessing the Application:

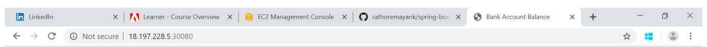






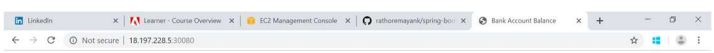
Account Balance

$535,614.08



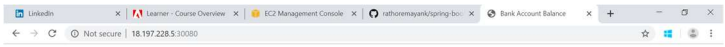
Account Balance

$535,975.92



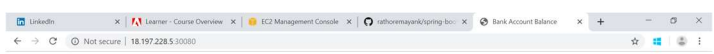
Account Balance

$536,175.36



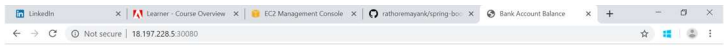
Account Balance

$536,525.12



Account Balance

$536,525.12



Account Balance

$538,187.04

5. Cleanup

Commands:

```
$ eksctl delete cluster --name=<cluster-name> --region=<region>
```