Set up cloud infrastructure – Components

- ✓ Config server
- ✓ Auth Server
- ✓ Api Gateway
- ✓ Discovery Service
- ✓ Cloud Monitoring- Spring Boot Admin
- ✓ Hystrix Dashboard

Services to implement

- ✓ Account Service
- ✓ Bank Information Service

API endpoints

- ✓ **/accounts/** Get list of all accounts **GET** /accounts/
- ✓ **/account/{id}** Create an account with specified ID **POST** /account/1
- ✓ **/account/{id}** Get specific account information **GET** /account/1
- ✓ **/bank/{id}** Get bank information for specified account id GET /bank/1

Tasks

- ✓ Implement service to manage accounts
- ✓ Implement service to get bank data of account
- ✓ for requested account id fetch account information from account service
- ✓ make sure that authentication checked automatically – Implementation in progress
- ✓ make sure that endpoint is resolved dynamically
- ✓ return account id as last digits of IBAN – Need more clarification
- ✓ take "DE89370400440532013087" as a base value
- ✓ replace last N digits of IBAN wit account id – Need more clarification
- ✓ Make sure that both services are properly registered in discovery and monitoring services

Order to Start Spring Boot Applications

1. Eureka Server -**za.co.discovery.EurekaServerRestApplication**
2. Spring cloud config server -**za.co.config.ConfigServerRestApplication**
3. Zuul Proxy -**za.co.zuul.ZuulProxyRestApplication**
4. Account Service- **za.co.account.AccountRestApplication**
5. Bank Service- **za.co.bank.BanktRestApplication**
6. Spring boot admin Server - **za.co.admin.SpringBootAdminApplication**
7. Authorization Server - **za.co.auth.AuthServerRestApplication**

Observations

Eureka Dashboard (http://localhost:8020/)

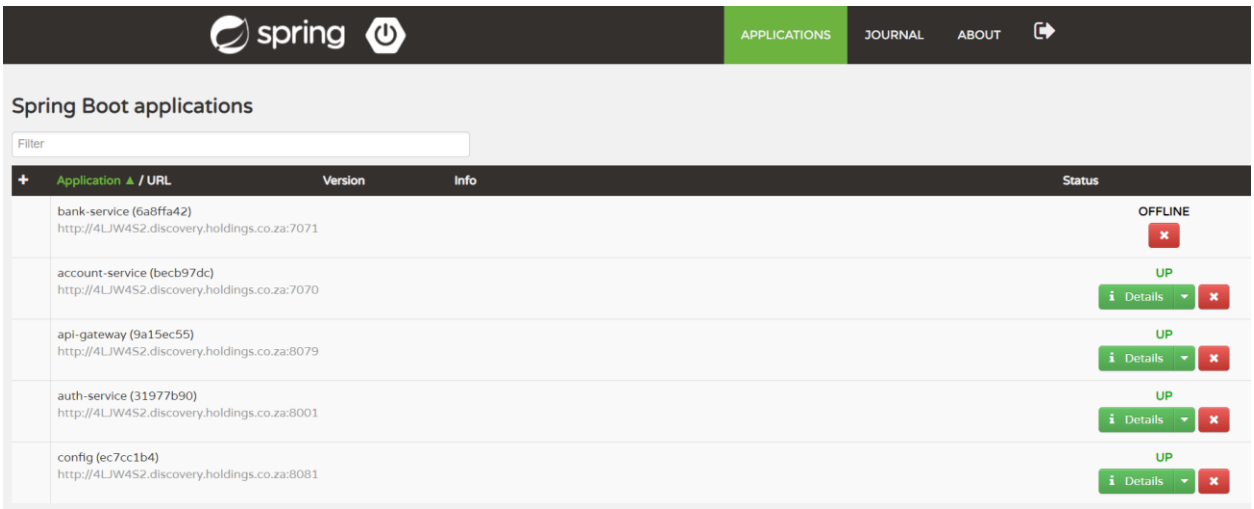
Instances currently registered with Eureka

Application	AMIs	Availability Zones	Status
ACCOUNT-SERVICE	n/a (1)	(1)	UP (1) - localhost:account-service:7070
API-GATEWAY	n/a (1)	(1)	UP (1) - localhost:api-gateway:8079
BANK-SERVICE	n/a (1)	(1)	UP (1) - localhost:bank-service:7071
CONFIG	n/a (1)	(1)	UP (1) - localhost:config:8081

Zuul Routes (http://localhost:8079/routes)


```
{
    "/config/**": "config",
    "/account-service/**": "account-service",
    "/bank-service/**": "bank-service"
}
```


Spring boot admin – Monitoring (http://localhost:8093/) username – admin password – password



Hystrix Dashboard – Account Service (http://localhost:7070/hystrix/)

Hystrix Dashboard

http://localhost:7070/hystrix.stream

Cluster via Turbine (default cluster): http://turbine-hostname:port/turbine.stream
Cluster via Turbine (custom cluster): http://turbine-hostname:port/turbine.stream?cluster=[clusterName]
Single Hystrix App: http://hystrix-app:port/hystrix.stream

Delay: 2000 ms Title: Example Hystrix App

Monitor Stream

Hystrix Stream: http://localhost:7070/hystrix.stream

Circuit Sort: Error then Volume | Alphabetical | Volume | Error | Mean | Median | 90 | 99 | 99.5

Bank...ilsByAccountId(Long)

0 2 100.0 %
41 0
0

Host: 0.2/s
Cluster: 0.2/s
Circuit Open

Hosts	1	90th	1001ms
Median	1001ms	99th	1001ms
Mean	1001ms	99.5th	1001ms

Thread Pools Sort: Alphabetical | Volume |

bank-service

Host: 0.2/s
Cluster: 0.2/s

Active	0	Max Active	1
Queued	0	Executions	2
Pool Size	10	Queue Size	5

Eureka Instance
http://localhost:8020/

Zuul Proxy
http://localhost:8079/routes

Account Service via Zuul
http://localhost:8079/account-service/swagger-ui.html

Bank Service via Zuul
http://localhost:8079/bank-service/swagger-ui.html

Account Service Direct Link
http://localhost:7070/swagger-ui.html

Bank Service Direct Link
http://localhost:7071/swagger-ui.html

Auth Server to generate token
curl -i -X POST -H 'Accept: application/json' -H 'Content-Type: application/json' --data '{"username":"admin","password":"password"}' http://localhost:8001/generate-token

X-Content-Type-Options: nosniff
X-XSS-Protection: 1; mode=block
Cache-Control: no-cache, no-store, max-age=0, must-revalidate
Pragma: no-cache
Expires: 0
X-Frame-Options: DENY
Authorization: Bearer
eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiJhZG1pbiIsImV4cCI6MTU1ODYxMDUyM30.cBwSgI-wpivn0i0L4gHj6FOUsE68w-QUoWmto2J8hPYlHXT_F0Kv2m6CxWGqxqaWoPT1uRS9akbPVDQYDQ705g
Content-Length: 0
Date: Mon, 13 May 2019 11:22:03 GMT

Client Accessing End Points with Authorization Header After getting a Valid Token (To be integrated)
curl -H 'Accept: application/json' -H "Authorization:**eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiJhZG1pbiIsImV4cCI6MTU1ODYxMDUyM30.cBwSgI-wpivn0i0L4gHj6FOUsE68w-QUoWmto2J8hPYlHXT_F0Kv2m6CxWGqxqaWoPT1uRS9akbPVDQYDQ705g**" http://localhost:8001/users

Steps to check authentication automatically –

1. Service will first generate token using Auth Server – **generate-token**
2. End points will be invoked with **Authorization header** to get response.