

Lab 02 RSMortgage Service Discovery Service → REST Microservice

RSMortgage Spring Cloud Service Discovery

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Table of Content

1.0 - Introduction	3
1.1 – Update the hosts file in windows to look like this	4
1.2 – Update the /etc/hosts file MacOS	5
1.3 – Update the /etc/hosts file Linux	5
1.4 – Create a new Spring Starter Project	5
1.5 – Fill initial values	
1.6 – Choose Eureka and Web as starter projects	7
1.7 – Click Finish Now	
1.8 – Let Spring Tool Suite Prepare the Project	9
1.9 – Verify the project identification in the pom.xml	10
1.10 – Add Parent project	
1.11 – Add Properties	
1.12 – Add Dependencies	
1.13 – Add DependencyManagement	11
1.14 – Add Build Section	12
1.15 - Create application.yml under resource directory	13
1.16 -Add annotation to the Main Class	14
1.17 -Add bootstrap.yml under resources folder	15
1.18 -Open Git Bash in project folder	
1.19 –Run the first instance	16
1.20 –Run the second instance	17
1.21 - Navigate to http://localhost:8761	18
1.22 – Navigate to http://localhost:8762	19
1.23 – Navigate to http://eureka-host1:8761/	20
1.24 – Navigate to http://eureka-host2:8762/	21
1.24 - Navigate to http://eureka-host1:8762/health	22
1.25 - Navigate to http://eureka-host1:8762/beans	23
1.26 - Navigate to http://eureka-host1:8762/metrics	
1.27 – Navigate to http://eureka-host1:8762/env	25
1.18 – Conclusion	26

Chapter 1 Spring Cloud Eureka Service Discovery Project Creation

1.0 - Introduction

The purpose of this guide is to help walk through the process of creating a Spring Boot / Cloud based Service Discovery application.

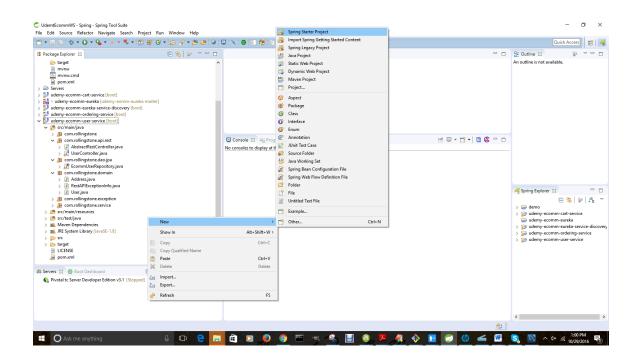
1.1 – Update the hosts file in windows to look like this

```
:\Windows\System32\drivers\etc>type hosts
 Copyright (c) 1993-2009 Microsoft Corp.
 This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
 This file contains the mappings of IP addresses to host names. Each entry should be kept on an individual line. The IP address should be placed in the first column followed by the corresponding host name. The IP address and the host name should be separated by at least one
 space.
 Additionally, comments (such as these) may be inserted on individual
 lines or following the machine name denoted by a '#' symbol.
 For example:
        102.54.94.97
                             rhino.acme.com
                                                             # source server
         38.25.63.10
                             x.acme.com
                                                              # x client host
 localhost name resolution is handled within DNS itself.
        127.0.0.1
                              localhost
                              localhost
127.0.0.1
                   eureka-host1
127.0.0.1
                   eureka-host2
:\Windows\System32\drivers\etc>
```

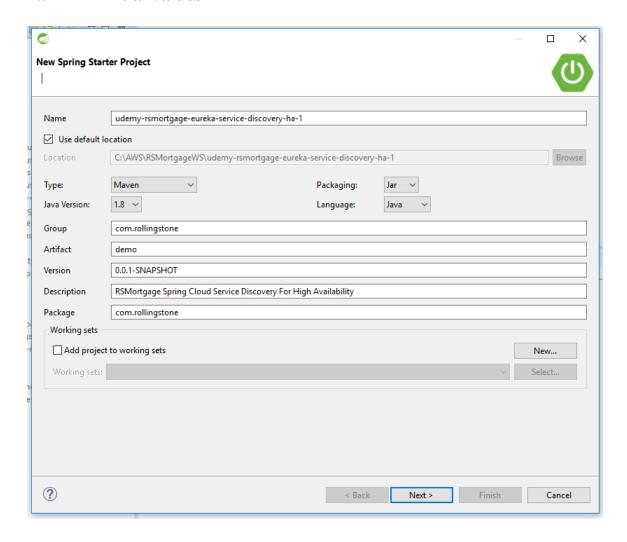
1.2 – Update the /etc/hosts file MacOS

1.3 – Update the /etc/hosts file Linux

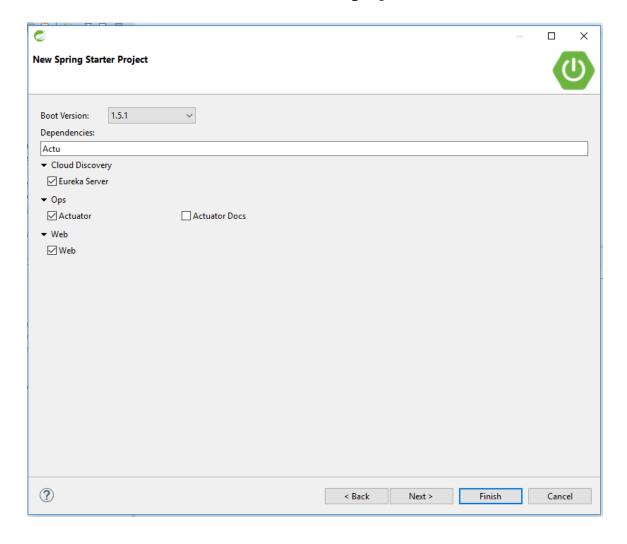
1.4 – Create a new Spring Starter Project



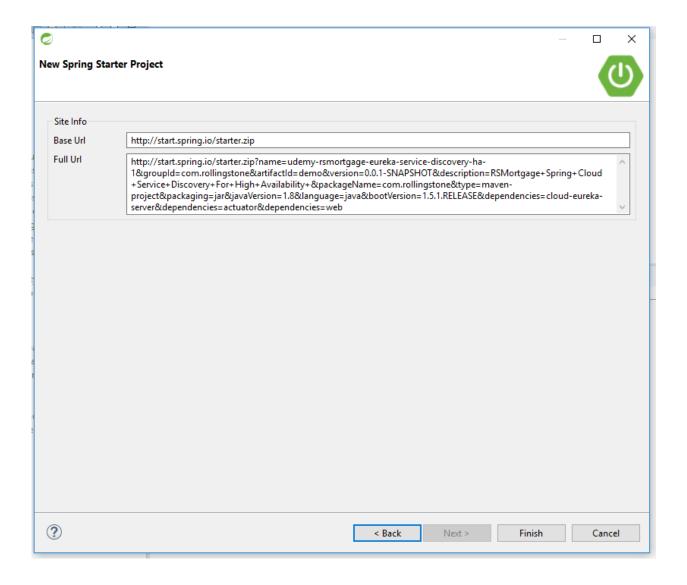
1.5 – Fill initial values



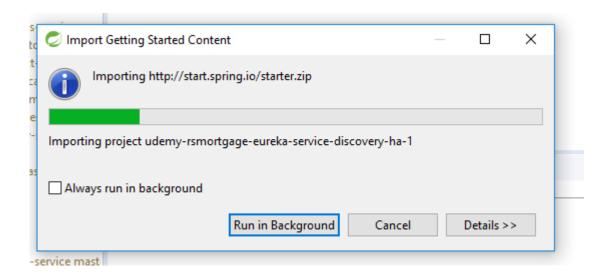
1.6 – Choose Eureka and Web as starter projects



1.7 – Click Finish Now



1.8 – Let Spring Tool Suite Prepare the Project



1.9 - Verify the project identification in the pom.xml

```
<groupId>com.rollingstone</groupId>
<artifactId>udemy-rsmortgage-eureka-service-discovery-ha</artifactId>
<version>0.0.1-SNAPSHOT</version>
<packaging>jar</packaging>
<name>udemy-rsmortgage-eureka-service-discovery-ha</name>
<description>Spring Starter Project for Service Discovery</description>
```

1.10 – Add Parent project

```
<parent>
    <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>1.4.1.RELEASE</version>
        <relativePath/> <!-- lookup parent from repository -->
</parent>
```

1.11 – Add Properties

1.12 – Add Dependencies

1.13 - Add Dependency Management

1.14 - Add Build Section

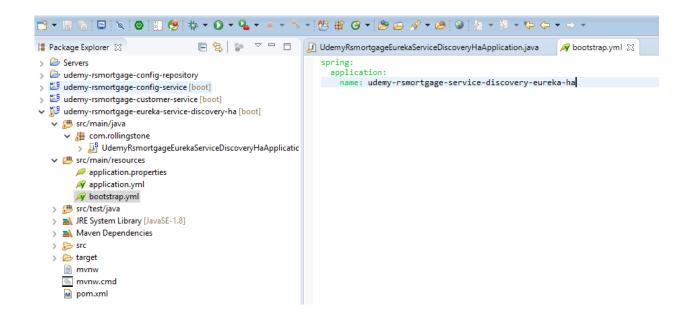
1.15 - Create application.yml under resource directory

```
eureka:
 instance:
  hostname: localhost
 client:
  registerWithEureka: true
  fetchRegistry: true
  serviceUrl:
   defaultZone: http://${eureka.instance.hostname};${server.port}/eureka/
spring:
 profiles: eureka-host1
server:
 port: 8761
eureka:
 instance:
  hostname: eureka-host1
 client:
  serviceUrl:
   defaultZone: http://eureka-host2:8762/eureka/
spring:
 profiles: eureka-host2
server:
 port: 8762
eureka:
 instance:
  hostname: eureka-host2
 client:
  serviceUrl:
   defaultZone: http://eureka-host1:8761/eureka/
```

1.16 -Add annotation to the Main Class

```
package com.rollingstone;
 ⊕ import org.springframework.boot.SpringApplication;
  @SpringBootApplication
  @EnableEurekaServer
  public class UdemyRsmortgageEurekaServiceDiscoveryHa1Application {
      public static void main(String[] args) {
         SpringApplication.run(UdemyRsmortgageEurekaServiceDiscoveryHa1Application.class, args);
  }
package com.rollingstone;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.cloud.netflix.eureka.server.EnableEurekaServer;
@SpringBootApplication
@Enable<u>EurekaServer</u>
public class UdemyRsmortgageEurekaServiceDiscoveryHaApplication {
    public static void main(String[] args) {
    SpringApplication.run(UdemyRsmortgageEurekaServiceDiscoveryHaApplication.
class, args);
}
```

1.17 -Add bootstrap.yml under resources folder



spring:

application:

name: udemy-rsmortgage-service-discovery-eureka-ha

1.18 - Open Git Bash in project folder

```
Caree2@Caree2-PC MINGW64 /c/AWS/RSMortgageWS/udemy-rsmortgage-eureka-service-discovery-ha (master)
$ mvn package
```

1.19 -Run the first instance

java -jar -Dspring.profiles.active=eureka-host1 target/udemy-rsmortgage-eureka-service-discovery-ha-0.0.1-SNAPSHOT.jar

```
Caree2@Caree2-PC MINGW64 /c/AWS/RSMortgageWS/udemy-rsmortgage-eureka-service-discovery-ha (master)
3 java -jar -Dspring.profiles.active=eureka-host1 target/udemy-rsmortgage-eureka-service-discovery-ha-0.0.1-SNAPSHOT.jar
```

```
2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Disable delta property : false 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Single vip registry refresh property : null 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Porce full registry fetch : false 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Application is null : false 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Registered Applications size is zero : true 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Application version is -1: true 2017-02-25 08:46:51.605 NNO 6316 --- [freshExecutor-0] com.netflix.discovery.DiscoveryClient : Getting all instance registry info from the eureka server 2017-02-25 08:46:51.605 NNO 6316 --- [theatExecutor-0] com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 - Re-registering application version is -1: true com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 - Re-registering application version is -1: true com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 - Re-registering application-true) com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 registering service (replication-true) com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 with status UP (replication-true) com.netflix.discovery.DiscoveryClient : DiscoveryClient UNKNOWN/localhost:8761 with status UP (replication-true) com.netflix.discovery.DiscoveryClient : DiscoveryClient : DiscoveryClie
```

1.20 -Run the second instance

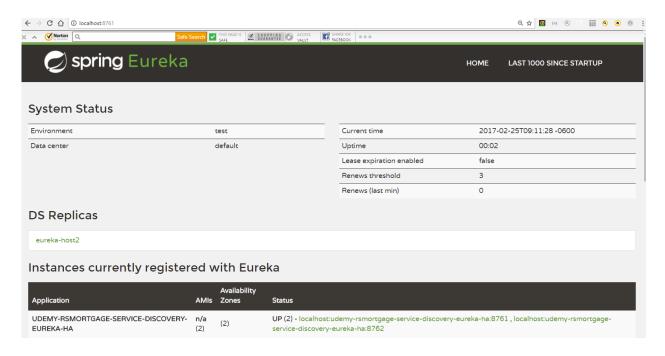
java -jar -Dspring.profiles.active=eureka-host2 target/udemy-rsmortgage-eureka-service-discovery-ha-0.0.1-SNAPSHOT.jar

```
Caree2@Caree2=PC MINGW64 /c/AWS/RSMortgageWS/udemy-rsmortgage-eureka-service-discovery-ha (master)

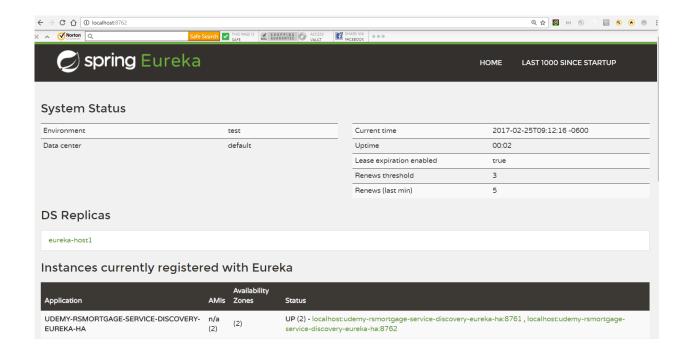
S java -jar -Dspring.profiles.active=eureka-host2 target/udemy-rsmortgage-eureka-service-discovery-ha-0.0.1-SNAPSHOT.jar

(replication=true)
2017-02-25 08:46:43.374
(replication=true)
2017-02-25 08:46:51.640
UNNNOWN - localhost:8762
UNNNOWN - localhost:8761
UNNNOWN - localhost:8761
UNNNOWN - localhost:8761
UNNOWN - localhost:8762
UNNOWN
```

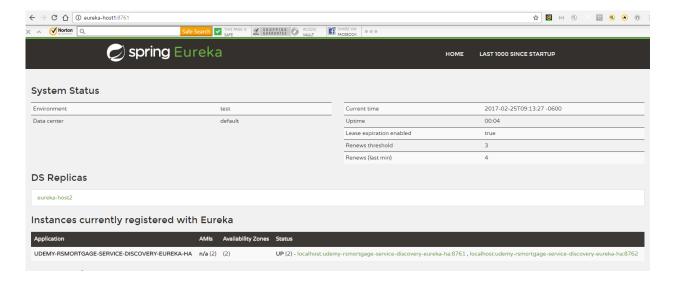
1.21 - Navigate to http://localhost:8761



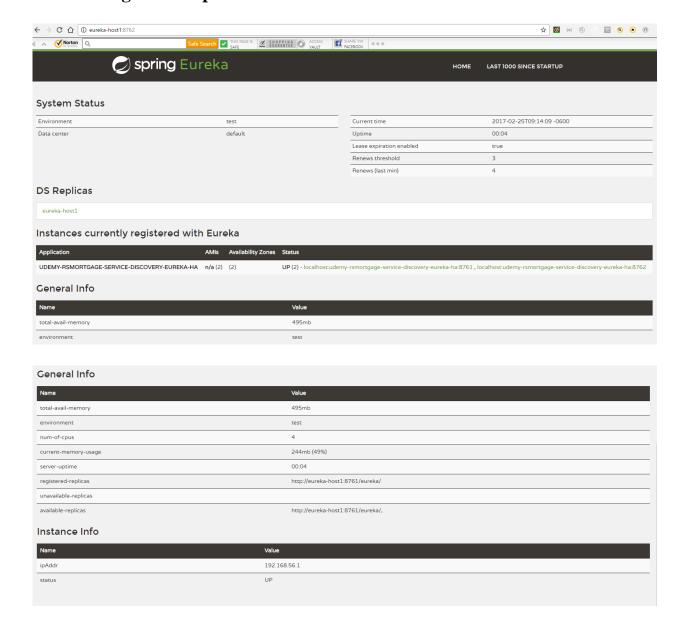
1.22 - Navigate to http://localhost:8762



1.23 - Navigate to http://eureka-host1:8761/



1.24 - Navigate to http://eureka-host2:8762/



${\bf 1.24-Navigate\ to\ http://eureka-host1:8762/health}$

```
← → C 🏠 🛈 eureka-host1:8762/health
                                                                SHOPPING ACCESS
VAULT
× ^ Morton Q
     // 20170225091505
     // http://eureka-host1:8762/health
4 *
       "description": "Spring Cloud Eureka Discovery Client",
5
        "status": "UP",
        "discoveryComposite": {
          "description": "Spring Cloud Eureka Discovery Client",
8
          "status": "UP",
9
10 🔻
           "description": "Spring Cloud Eureka Discovery Client",
           "status": "UP",
12
           "services": [
13 🔻
             "udemy-rsmortgage-service-discovery-eureka-ha"
14
15
16
17 🔻
          "eureka": {
            "description": "Remote status from Eureka server",
18
           "status": "UP",
19
20 🔻
21
              "UDEMY-RSMORTGAGE-SERVICE-DISCOVERY-EUREKA-HA": 2
22
23
24
25 🔻
        "diskSpace": {
26
          "status": "UP",
27
          "total": 718165323776,
          "free": 377887756288,
28
         "threshold": 10485760
29
       "refreshScope": {
31 🔻
```

1.25 - Navigate to http://eureka-host1:8762/beans

```
\leftarrow \rightarrow \mathbf{C} \boldsymbol{\Omega} \boldsymbol{\Omega} eureka-host1:8762/beans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ☆ Ø ⇔ ® ⊝ m ® • • • •
  Norton Q
                                                                                                                                                                                Safe Search THIS PAGE IS SHOPPING ACCESS VAULT SARE VIA FACEBOOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BHW
                            // http://eureka-host1:8762/beans
                                            "context": "udemy-rsmortgage-service-discovery-eureka-ha:eureka-host2:8762",
                                             "parent": "udemy-rsmortgage-service-discovery-eureka-ha:eureka-host2",
8 v
9 v
10 v
11 v
12 13 14 15 16 17 v
18 19 20 21 v
                                                    \{ \\ \begin{tabular}{ll} 
                                                          ],
"scope": "singleton",
"type": "com.rollingstone.UdemyRsmortgageEurekaServiceDiscoveryHaApplication$$EnhancerBySpringCGLIB$$beddf9f6",
"resource": "null",
                                                            "dependencies": [
22
23
24
25
26
27
                                                             \textbf{"bean": "org.springframework.boot.autoconfigure.internal Caching Metadata Reader Factory", \\
                                                            "aliases": [
                                                           ],
"scope": "singleton",
                                                           "type": "org.springframework.core.type.classreading.CachingMetadataReaderFactory",
"resource": "mull",
"dependencies": [
```

1.26 - Navigate to http://eureka-host1:8762/metrics

```
← → C 🏠 🛈 eureka-host1:8762/metrics
Norton Q
                                                    THIS PAGE IS SHOPPING ACCESS
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      // 20170225091756
      // http://eureka-host1:8762/metrics
        "mem": 586071,
        "mem.free": 227143,
        "processors": 4,
        "instance.uptime": 454577,
        "uptime": 510959,
        "systemload.average": -1.0,
10
        "heap.committed": 507392,
11
        "heap.init": 129024,
        "heap.used": 280248,
13
        "heap": 1831424,
14
15
        "nonheap.committed": 80576,
16
        "nonheap.init": 2496,
        "nonheap.used": 78681,
17
        "nonheap": 0,
18
19
        "threads.peak": 65,
        "threads.daemon": 63,
        "threads.totalStarted": 73,
21
        "threads": 65,
22
        "classes": 10375,
23
24
        "classes.loaded": 10375,
        "classes.unloaded": 0,
25
        "gc.ps_scavenge.count": 27,
26
27
        "gc.ps_scavenge.time": 777,
        "gc.ps_marksweep.count": 2,
28
29
        "gc.ps_marksweep.time": 252,
30
        "counter.servo.eurekaclient.transport.request": 0,
        "normalized.servo.eurekaclient.transport.latency.totaltime": 0.0,
```

1.27 - Navigate to http://eureka-host1:8762/env

```
← → C 🏠 🛈 eureka-host1:8762/env
                                                                                                                                                  ☆
× ^ Vorton Q
                                              afe Search THIS PAGE IS SHOPPING ACCESS
                                                                                      SHARE VIA FACEBOOK
      // 20170225091907
      // http://eureka-host1:8762/env
5 🔻
         "profiles": [
           "eureka-host2"
6
        "server.ports": {
9
          "local.server.port": 8762
10
        "servletContextInitParams": {
11 *
12
13
         "systemProperties": {
14 🔻
          "java.runtime.name": "Java(TM) SE Runtime Environment",
15
16
          "java.protocol.handler.pkgs": "org.springframework.boot.loader",
17
          "sun.boot.library.path": "C:\\Java\\bin",
          "java.vm.version": "25.65-b01",
18
           "java.vm.vendor": "Oracle Corporation",
19
           "java.vendor.url": "http://java.oracle.com/",
20
          "path.separator": ";",
21
22
           "java.vm.name": "Java HotSpot(TM) 64-Bit Server VM",
          "file.encoding.pkg": "sun.io",
23
24
          "user.country": "US",
"user.script": "",
25
26
          "sun.java.launcher": "SUN_STANDARD",
           "sun.os.patch.level": "",
27
          "PID": "3136",
28
29
          "java.vm.specification.name": "Java Virtual Machine Specification",
30
           "user.dir": "C:\\AWS\\RSMortgagePracticeWS\\udemy-rsmortgage-eureka-service-discovery-ha",
31
           "java.runtime.version": "1.8.0_65-b17",
```

1.18 – Conclusion

This document listed the steps as well as provided the explanation of creating a Spring Boot application based on Spring Cloud Service Discovery.