What is Microservices?

It is a kind of architectural style which structures an application as a collection of Services

Advantage-

They are loosely coupled.

Independently deployable.

What is the difference between Monolithic application & microservices application?

In Case of Monolithic we consider whole project as a single code-base & hence we deploy the whole app as a single war file.

But when it comes to Microservices application, each of the service is considered as a separate code-base & hence we deploy a separate war file for each code-base (service).

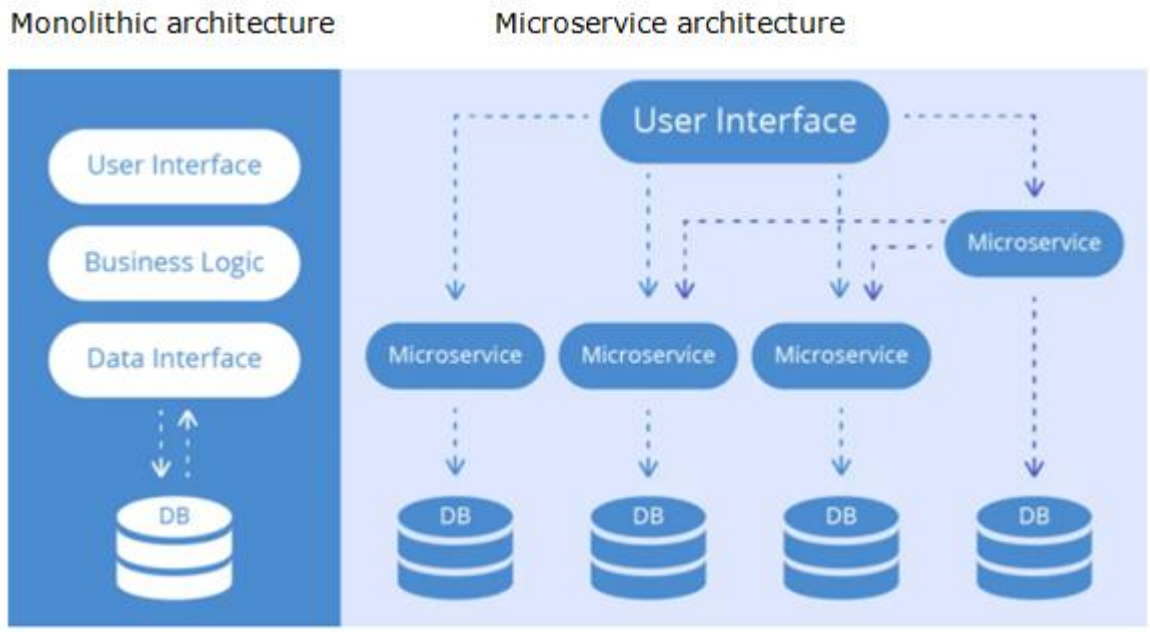


Fig- Microservice architecture

Note

1. We need to create a separate spring boot project for every microservice in the project
2. We need the separate tomcat instances for running each of the application independently.
3. For microservices to communicate with each other , we will use Spring-cloud [EurekaServer].
4. EurekaServer can be considered as a Discovery server.

5. For Microservices to communicate with each other, we have to register them on this EurekaServer.
6. Here each Microservice will be the Client for the EurekaServer.

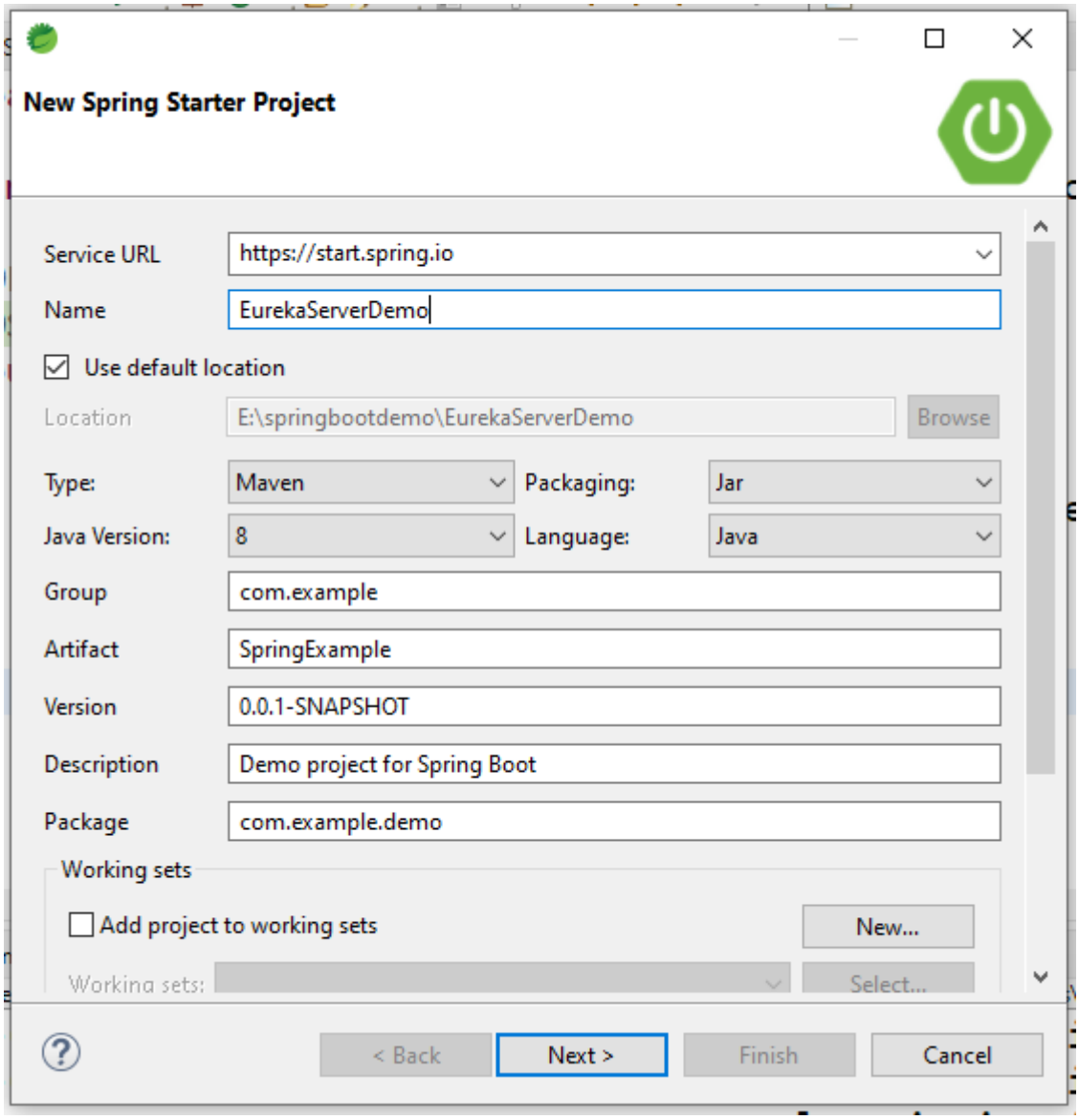
Example-

It is Kind of site which will display the entire Product that End-User has watched.

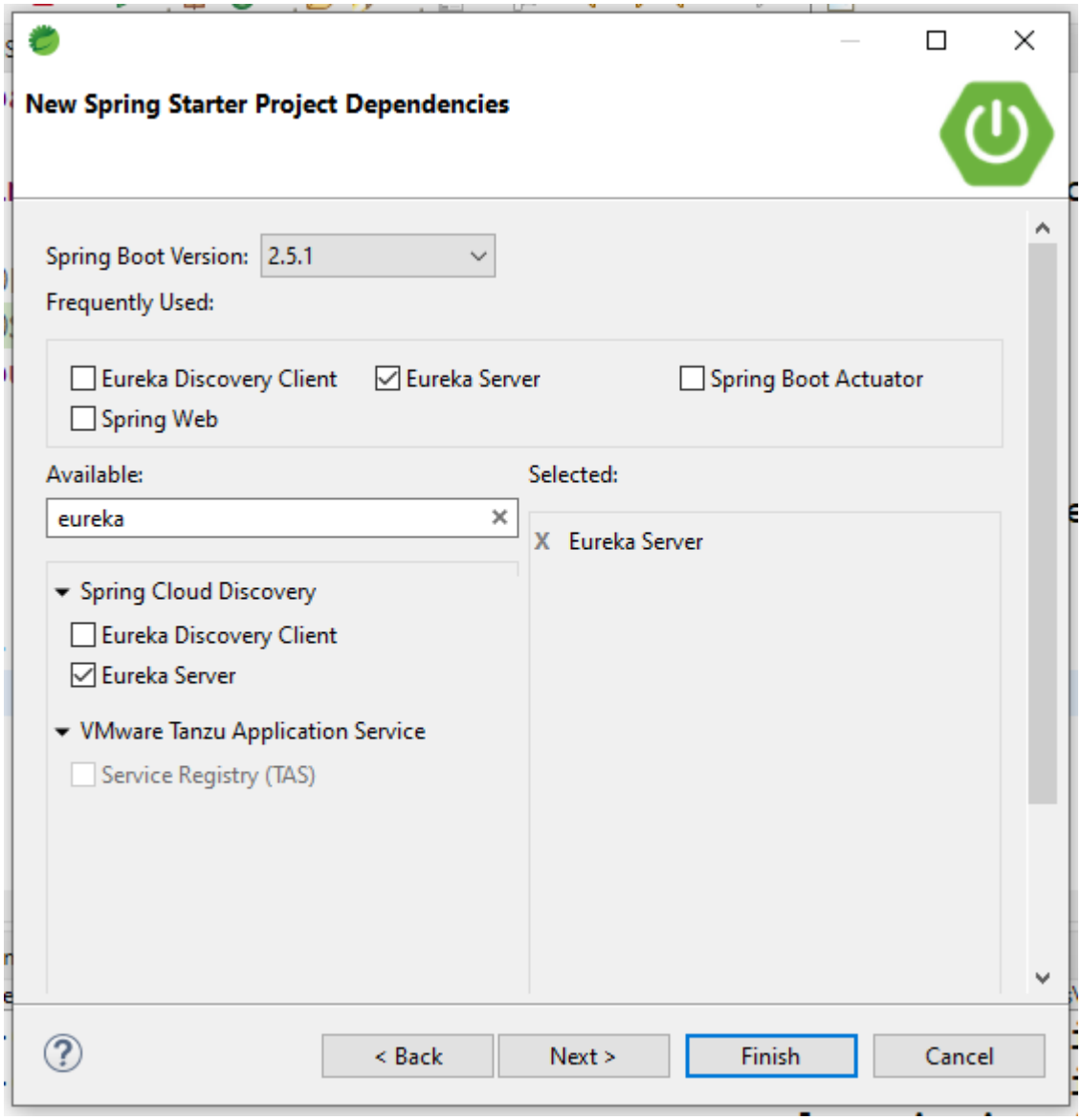
Microservice example-

Eureka Server

File->New->Spring Starter Project



Click on Next button



Click on Next button then click on finish button.

Step-1

Go to main method and put `@EnableEurekaServer`

`On above @SpringBootApplication`

`EurekaServerDemoApplication.Java`

```
package com.example.demo;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
```

```
import org.springframework.cloud.netflix.eureka.server.EnableEurekaServer;

@EnableEurekaServer
@SpringBootApplication
public class EurekaServerDemoApplication {

	public static void main(String[] args) {
		SpringApplication.run(EurekaServerDemoApplication.class, args);
	}

}
```

Step-2

application.properties

```
server.port=8761
eureka.client.register-with-eureka=false
```

Step-3

Run as Spring Boot Application then display below message on screen

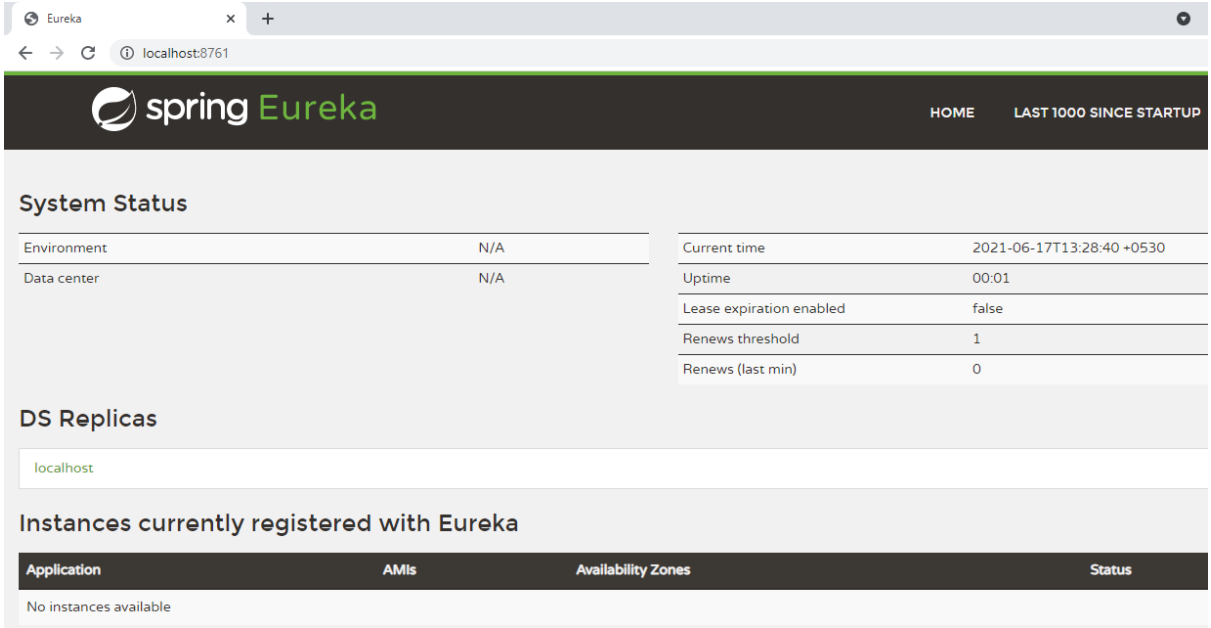
2021-06-17 13:27:48.697 INFO 3336 --- [main] .s.c.n.e.s.EurekaAutoServiceRegistration : Updating port to 8761

2021-06-17 13:27:49.432 INFO 3336 --- [Thread-9] e.s.EurekaServerInitializerConfiguration : Started Eureka Server

2021-06-17 13:27:50.585 INFO 3336 --- [main] c.e.demo.EurekaServerDemoApplication : Started EurekaServerDemoApplication in 37.8 seconds (JVM running for 42.349)

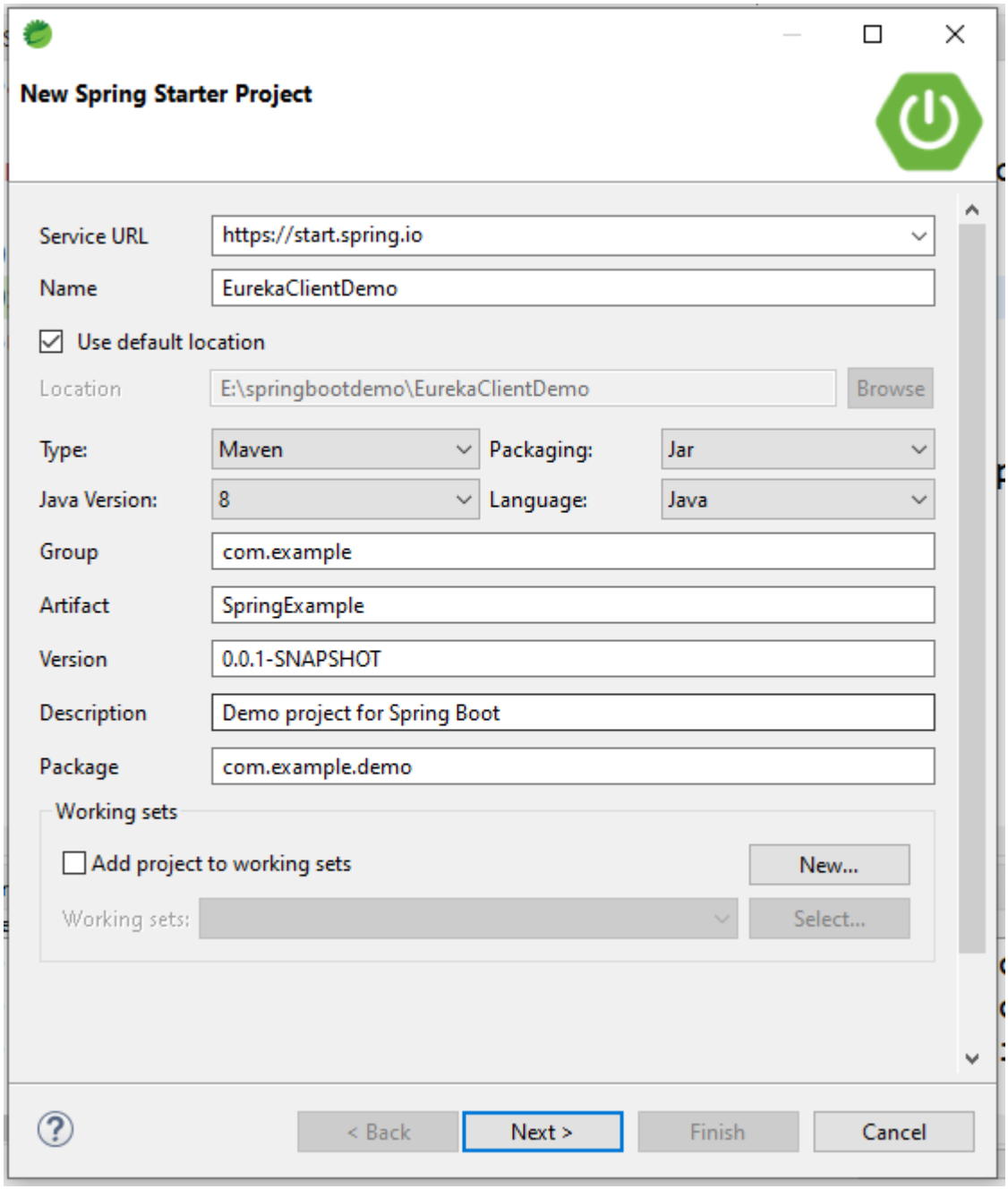
Step-4

Go to browser http://localhost:8761/ and press enter

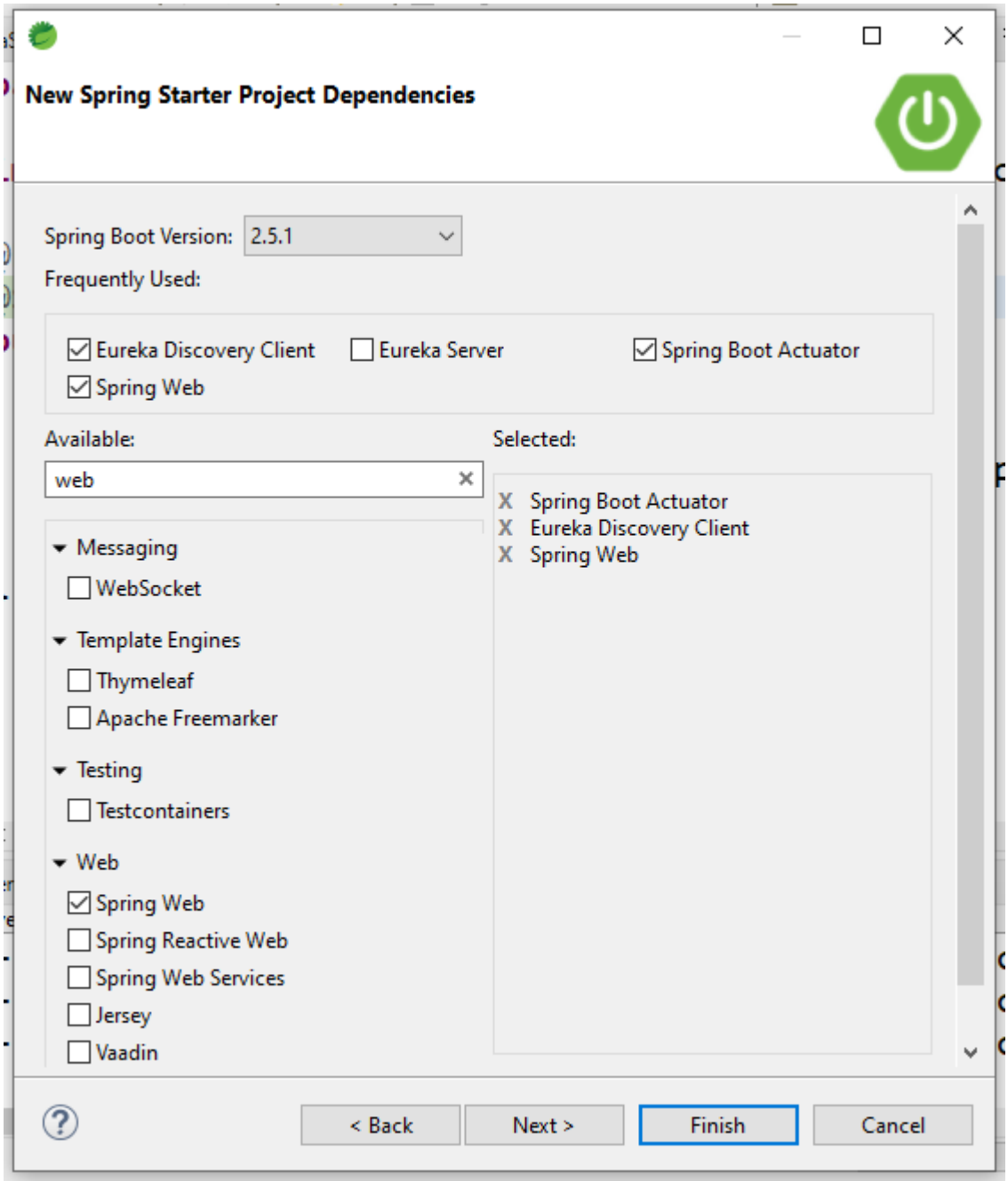


Eureka Client

File->New->Spring Starter Project



Click on Next button and add below three dependencies into it.



Click on Next and finish button

Step-1

Go to main method and put `@EnableEurekaClient`

`On above @SpringBootApplication`

package com.example.demo;

import org.springframework.boot.SpringApplication;

```
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.cloud.netflix.eureka.EnableEurekaClient;

@EnableEurekaClient
@SpringBootApplication
public class ProductTestServiceApplication {

	public static void main(String[] args) {
		SpringApplication.run(ProductTestServiceApplication.class, args);
	}

}
```

Step-2 application.properties

```
spring.application.name=producttestservice
server.port=8083
```

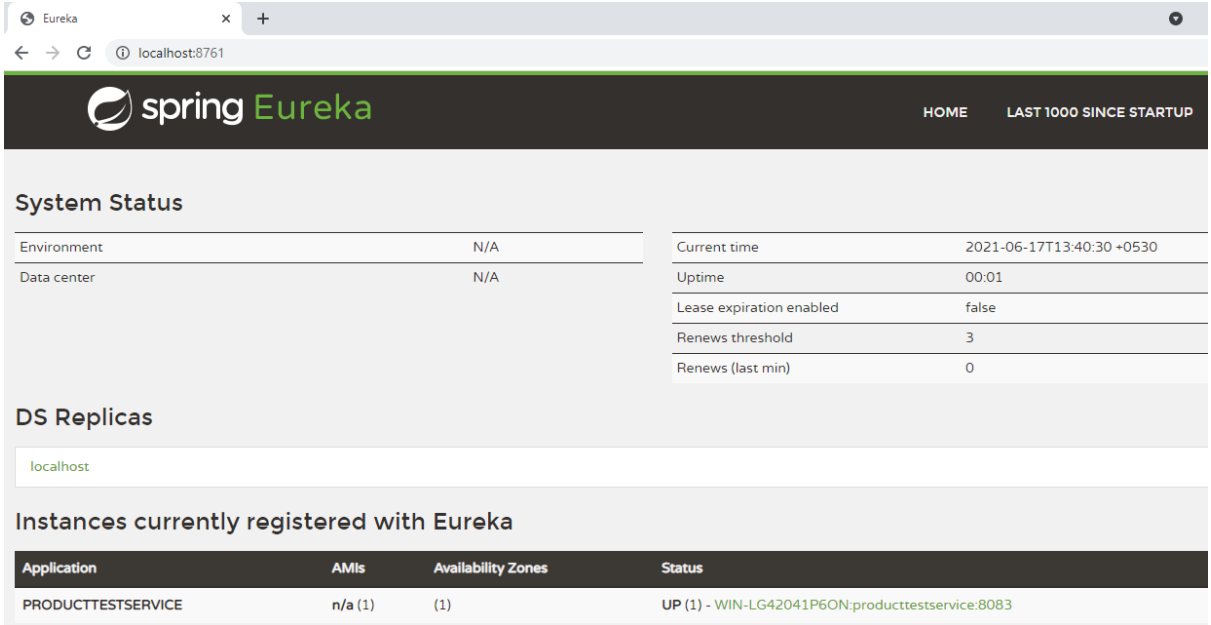
Step-3

Create the Rest controller as per below

```
package com.example.demo;

import java.util.ArrayList;
import java.util.List;

import
org.springframework.web.bind.annotation.GetMapping;
import
org.springframework.web.bind.annotation.RequestMapp
ing;
import
org.springframework.web.bind.annotation.RestControl
ler;

@RestController
```

```java
@RequestMapping("/product")
public class ProductController {

    @GetMapping("/list")
    public List<String> getProductList() {
        List<String> list = new ArrayList<>();
        list.add("mobile");
        list.add("laptop");
        return list;
    }


}
```

Step-4 Run as Spring Boot Application and hit the eureka server



Here, service will be displayed on screen