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实验目的:部署 springweb 应用程序到云服务器上并运行

实验一

微服务开发框架及环境

1. 前置准备工作

1.1 购买服务器

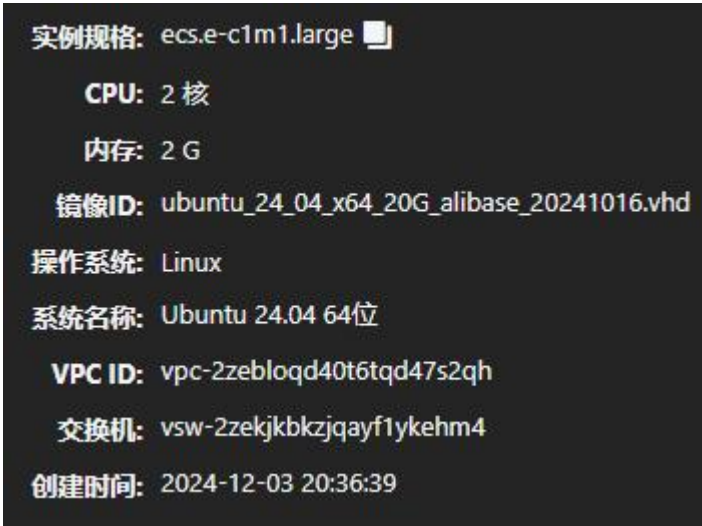
第一台服务器:

阿里云提供了学生优惠活动，可通过以下链接凭借学生认证购买优惠的 ECS 服务器：

<https://developer.aliyun.com/plan/student>



配置信息:



操作系统	监控	可用区	配置	IP 地址	付费方式
		华北2（北京）F	2核(vCPU) 2 GiB 10 Mbps ecs.e-c1m1.large		包年包月 2025年12月3日 23:59:59到期

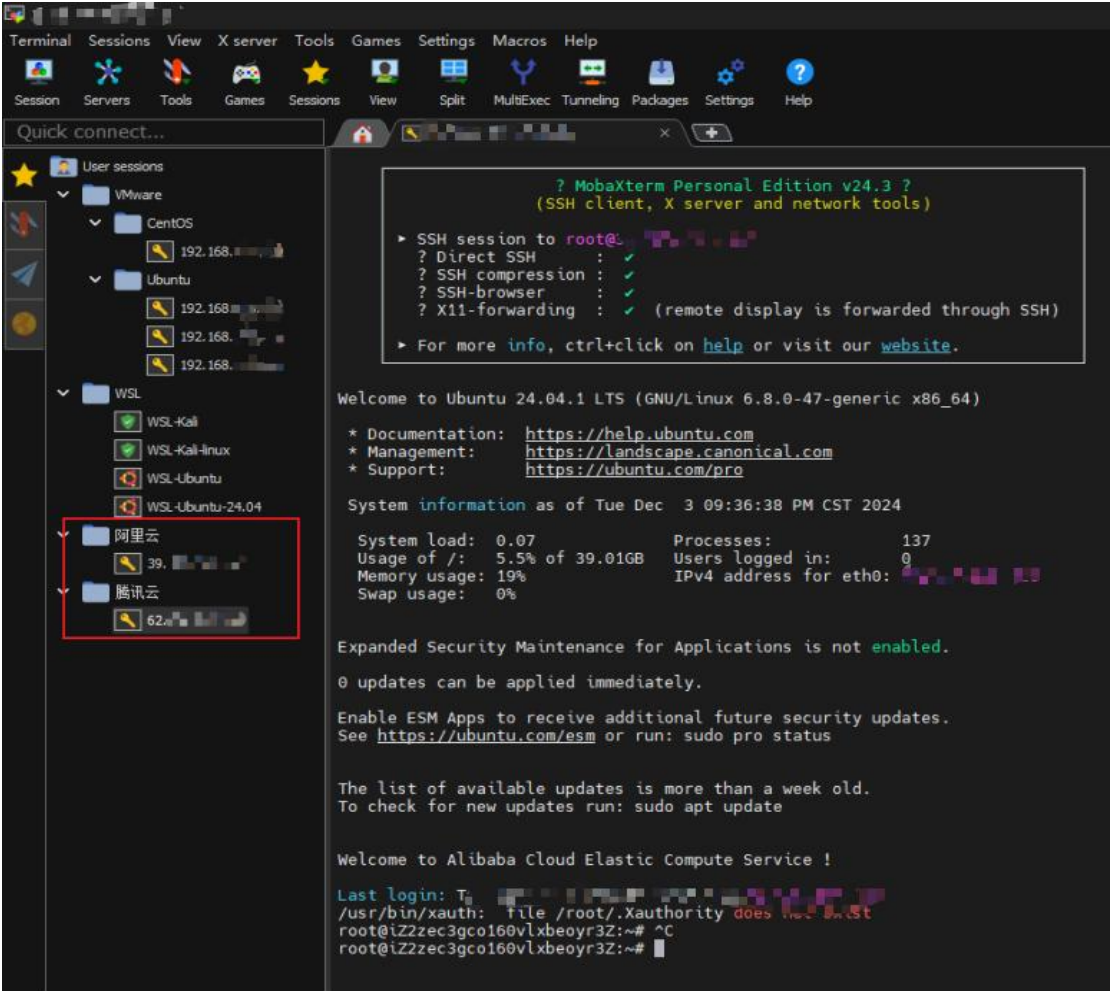
第二台服务器：

腾讯云按量计费

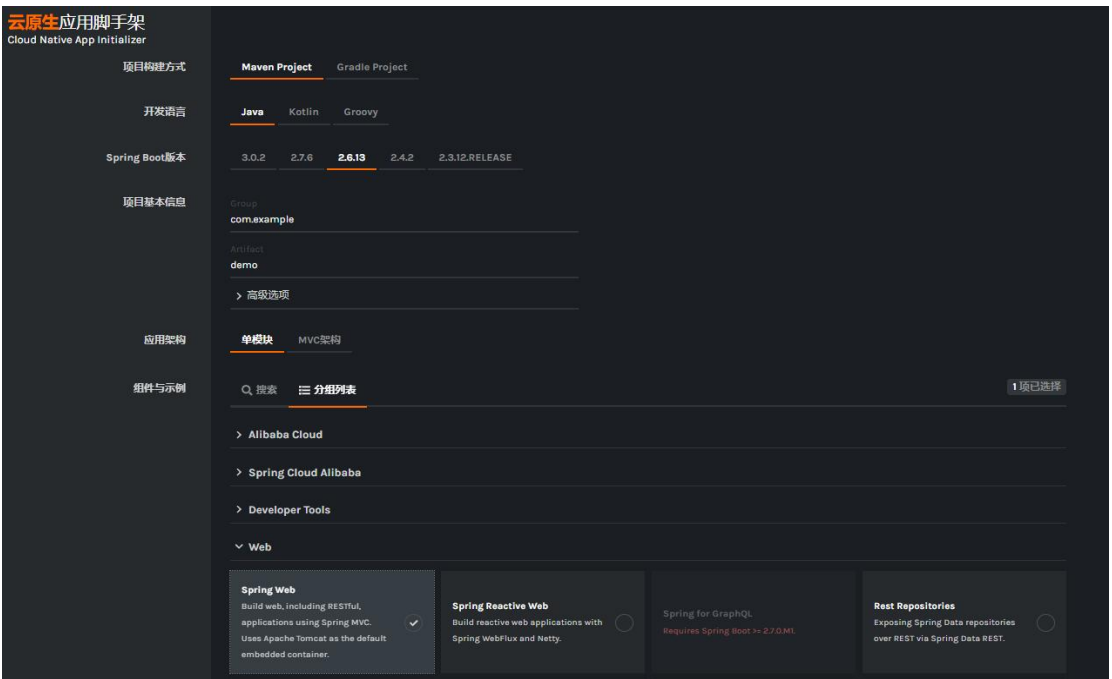


两台服务器都是 Ubuntu 系统

1.2 使用 MobaXterm 远程连接工具连接服务器



1.3 构建并下载 springweb 源码

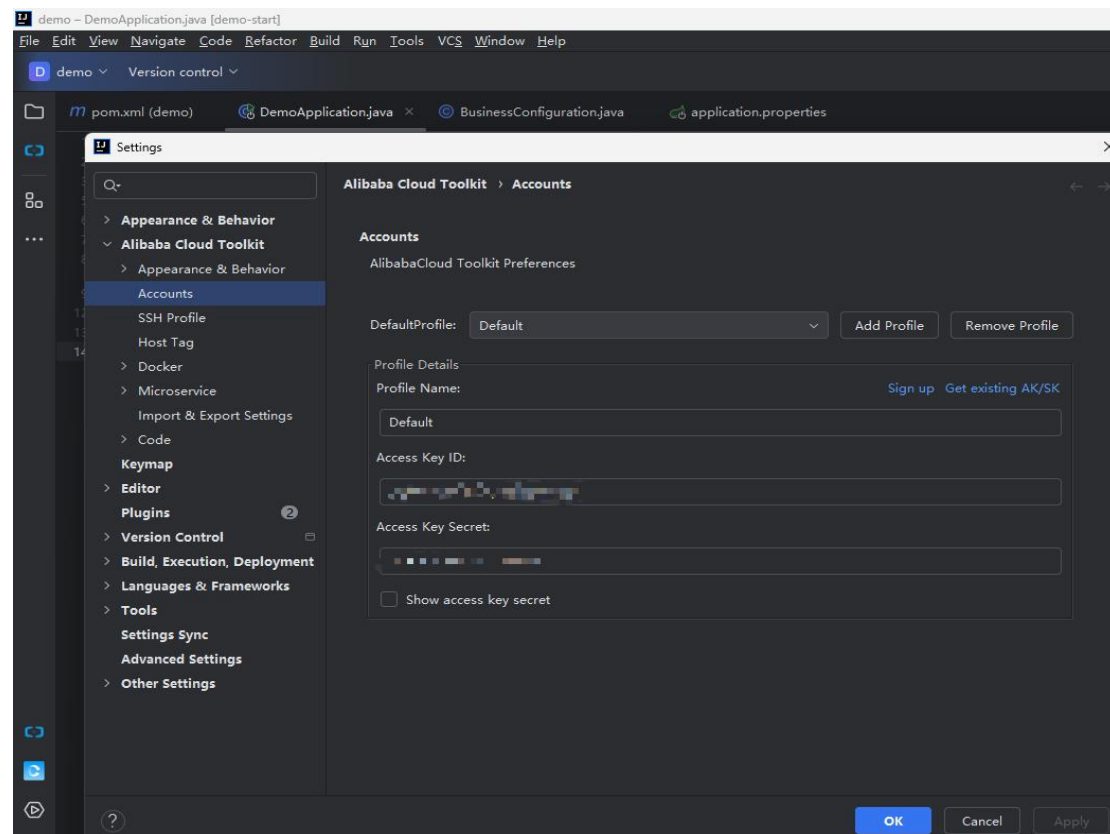
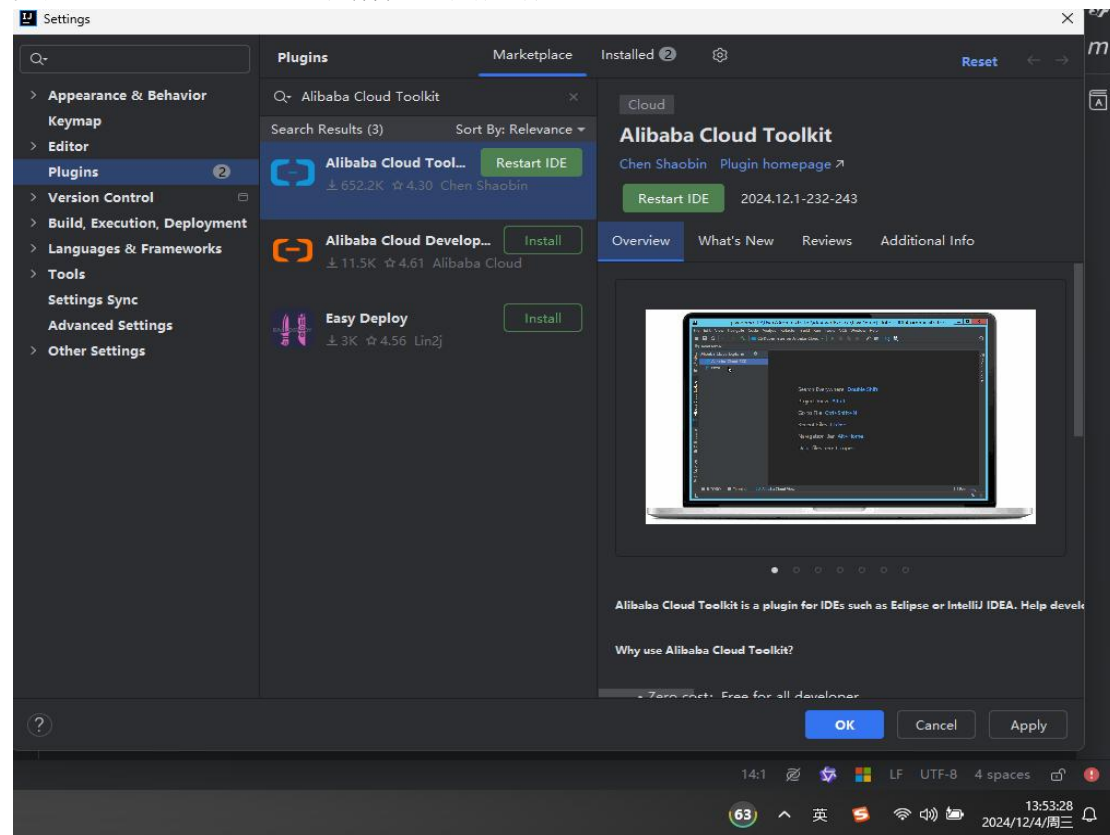


2 利用Cloud Toolkit 将程序部署到阿里云微服务平台

2.1 在 IntelliJ IDEA 中安装和配置 Cloud Toolkit

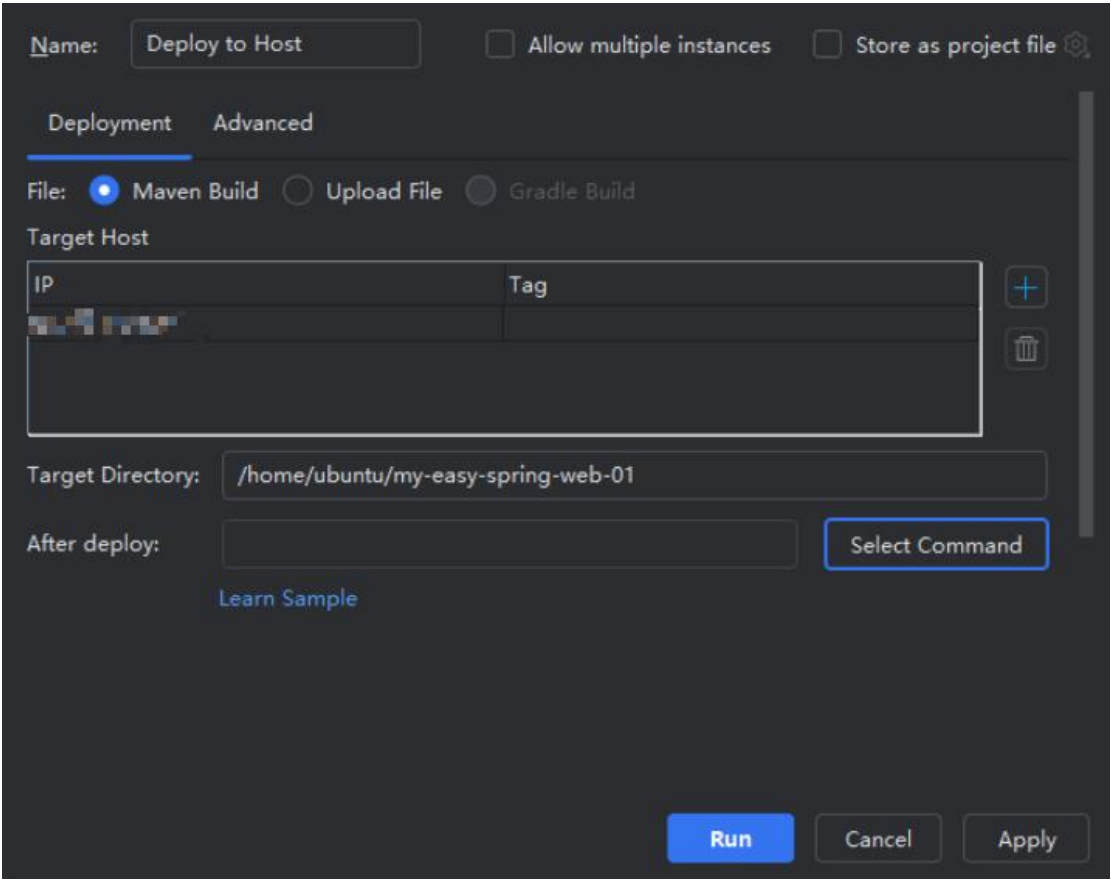
参考[如何在 IntelliJ IDEA 中安装和配置 Cloud Toolkit 云插件\(Cloud Toolkit\)-阿里云帮助中心](#)

安装 Alibaba Cloud Toolkit 插件并配置私有密钥:

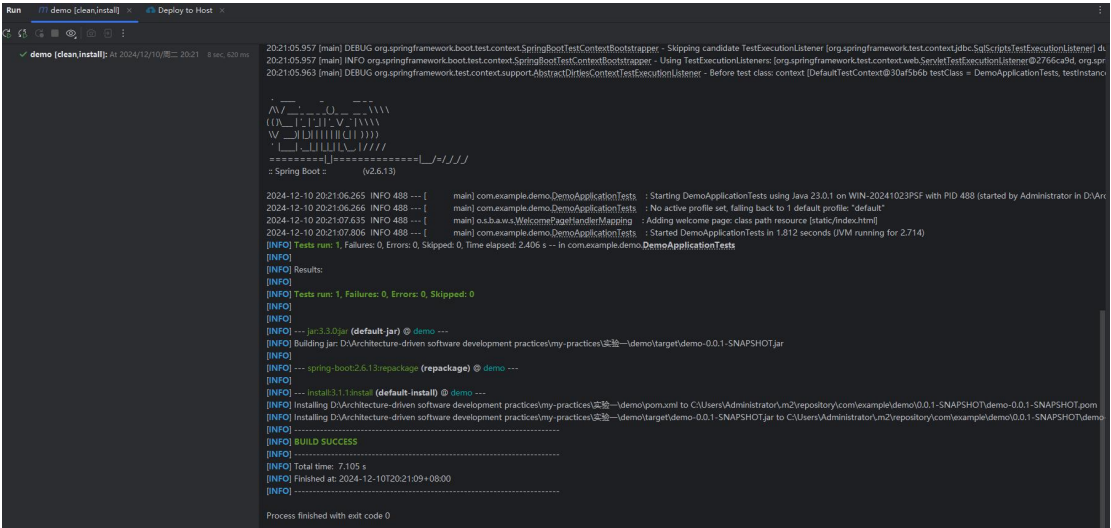


2.2 使用 IntelliJ IDEA 上传应用 jar 包到阿里云服务器平台

参考官方文档[如何使用 IntelliJ IDEA 中部署本地应用到 Linux 服务器](#) 云插件(Cloud Toolkit)-阿里云帮助中心



2.3 构建并部署后控制台显示结果




```
Run  demo [clean,install] x  Deploy to Host x

[INFO] user custom command: { null }
[INFO] IDE Version:IntelliJ IDEA 2024.1
[INFO] Alibaba Cloud Toolkit Version:2024.12.1-232-243
[INFO] started transferring file demo-0.0.1-SNAPSHOT.jar (5940 bytes)
[#####] 100% (5940/5940)
[INFO] Upload Local File success
[INFO] Target Deploy Host: { }
[INFO] user custom command: { null }
[INFO] Finished at: 2024-12-10 20:21:10
[INFO] File Upload Total time: 0.952 s
open terminal
```

3. 运行项目 jar 包

```
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ l
demo-0.0.1-SNAPSHOT.jar
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ java -jar demo-0.0.1-SNAPSHOT.jar
Command 'java' not found, but can be installed with:
sudo apt install openjdk-11-jre-headless # version 11.0.24+8-1ubuntu3~22.04, or
sudo apt install default-jre # version 2:1.11-72build2
sudo apt install openjdk-17-jre-headless # version 17.0.12+7-1ubuntu2~22.04
sudo apt install openjdk-18-jre-headless # version 18.0.2+9-2~22.04
sudo apt install openjdk-19-jre-headless # version 19.0.2+7-0ubuntu3~22.04
sudo apt install openjdk-21-jre-headless # version 21.0.4+7-1ubuntu2~22.04
sudo apt install openjdk-8-jre-headless # version 8u422-b05-1~22.04
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$
```

报错没有 java 环境,参考在[ubuntu 环境中安装 java](#) [ubuntu 安装 java-CSDN 博客](#)安装 java 环境

```
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ java -version
openjdk version "1.8.0_432"
OpenJDK Runtime Environment (build 1.8.0_432-8u432-ga~us1-0ubuntu2~22.04-ga)
OpenJDK 64-Bit Server VM (build 25.432-bga, mixed mode)
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ javac -version
javac 1.8.0_432
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$
```

运行 jar 包

```
demo-0.0.1-SNAPSHOT.jar
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ java -jar demo-0.0.1-SNAPSHOT.jar
no main manifest attribute, in demo-0.0.1-SNAPSHOT.jar
```

报错 , 更换 pom.xml 依赖包

```

<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>3.4.0</version>
    <relativePath/> <!-- lookup parent from repository -->
  </parent>
  <groupId>org.example</groupId>
  <artifactId>my-easy-spring-web-02</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <name>my-easy-spring-web-01</name>
  <description>my-easy-spring-web-01</description>
  <url/>
  <licenses>
    <license/>
  </licenses>
  <developers>
    <developer/>
  </developers>
  <scm>
    <connection/>
    <developerConnection/>
    <tag/>
    <url/>
  </scm>
  <properties>
    <java.version>17</java.version>
  </properties>
  <dependencies> Edit Starters...
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>

    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-test</artifactId>
      <scope>test</scope>
    </dependency>
  </dependencies>

  <build>
    <plugins>
      <plugin>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-maven-plugin</artifactId>
      </plugin>
    </plugins>
  </build>

```

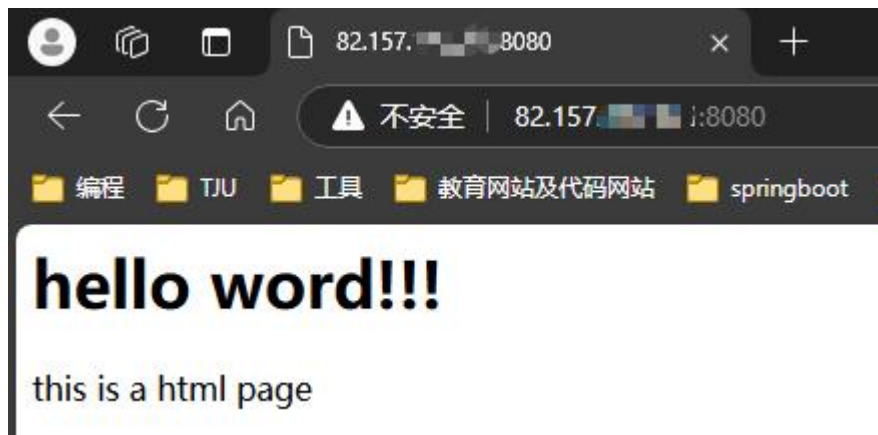
重新部署到服务器并运行 jar 包

```
my-easy-spring-web-02-0.0.1-SNAPSHOT.jar
ubuntu@VM-0-6-ubuntu:~/my-easy-spring-web-01$ java -jar my-easy-spring-web-02-0.0.1-SNAPSHOT.jar

Spring Boot (v3.4.0)

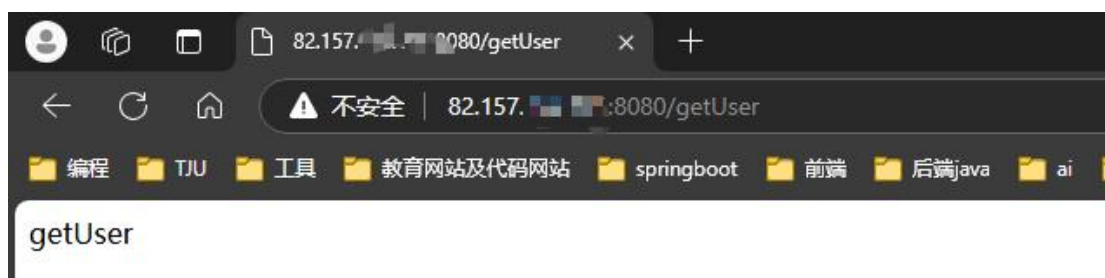
2024-12-10T21:55:04.628+08:00 INFO 41264 --- [main] com.example.demo.DemoApplication : Starting DemoApplication v0.0.1-SNAPSHOT using Java 17.0.13 with PID 41264 (/home/ubuntu/my-easy-spring-web-01/my-easy-spring-web-02-0.0.1-SNAPSHOT.jar started by ubuntu in /home/ubuntu/my-easy-spring-web-01)
2024-12-10T21:55:04.634+08:00 INFO 41264 --- [main] com.example.demo.DemoApplication : No active profile set, falling back to 1 default profile: "default"
2024-12-10T21:55:05.003+08:00 INFO 41264 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2024-12-10T21:55:05.019+08:00 INFO 41264 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2024-12-10T21:55:05.019+08:00 INFO 41264 --- [main] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.33]
2024-12-10T21:55:05.057+08:00 INFO 41264 --- [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2024-12-10T21:55:05.059+08:00 INFO 41264 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 4191 ms
2024-12-10T21:55:06.132+08:00 INFO 41264 --- [main] o.s.b.a.w.s.WelcomePageHandlerMapping : Adding welcome page: class path resource [static/index.html]
2024-12-10T21:55:06.563+08:00 INFO 41264 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8080 (http) with context path '/'
2024-12-10T21:55:08.503+08:00 INFO 41264 --- [main] com.example.demo.DemoApplication : Started DemoApplication in 2.769 seconds (process running for 3.451)
2024-12-10T21:55:10.351+08:00 INFO 41264 --- [nto-8080-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Spring DispatcherServlet 'dispatcherServlet'
2024-12-10T21:55:10.351+08:00 INFO 41264 --- [nto-8080-exec-1] o.s.web.servlet.DispatcherServlet : Initializing Servlet 'dispatcherServlet'
2024-12-10T21:55:10.353+08:00 INFO 41264 --- [nto-8080-exec-1] o.s.web.servlet.DispatcherServlet : Completed initialization in 2 ms
```

成功运行并访问到开始页面



成功启动项目并访问到我的自定义接口

```
@RestController
public class UserController {
    @GetMapping("/getUser")
    public String getUser(){
        return "getUser";
    }
}
```



实验一完成