

## Deploy Java Spring Boot App to Tomcat (XAMPP)

Spring Boot applications can be deployed on Apache Tomcat that comes with XAMPP by converting the app into a WAR (Web Application Archive) instead of a JAR.

### 1. Convert Spring Boot App to WAR

Spring Boot applications by default create an executable JAR. We need to package it as a WAR to deploy it on XAMPP Tomcat.

#### Modify pom.xml

Update pom.xml to switch from JAR to WAR:

```
<packaging>war</packaging>

<dependencies>
  <!-- Spring Boot Web -->
  <dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-web</artifactId>
  </dependency>

  <!-- Remove Embedded Tomcat -->
  <dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-tomcat</artifactId>
    <scope>provided</scope> <!-- Set to 'provided' to exclude embedded Tomcat -->
  </dependency>
</dependencies>
```

#### Create a ServletInitializer Class

Inside your main package, create ServletInitializer.java:

```
import org.springframework.boot.builder.SpringApplicationBuilder;
import org.springframework.boot.web.servlet.support.SpringBootServletInitializer;
import com.example.demo.DemoApplication; // Change to your main class

public class ServletInitializer extends SpringBootServletInitializer {
    @Override
    protected SpringApplicationBuilder configure(SpringApplicationBuilder application) {
        return application.sources(DemoApplication.class);
    }
}
```

\*This is needed to configure the Spring Boot application when running as a WAR inside Tomcat.

#### Build the WAR File

Run the following Maven command:

```
mvn clean package
```

This will create:

```
target/demo-0.0.1-SNAPSHOT.war
```

## 2. Deploy WAR to XAMPP Tomcat

### Locate XAMPP Tomcat Webapps Directory

Find your XAMPP installation directory, typically:

```
C:\xampp\tomcat\webapps
```

### Copy WAR File

Move the generated WAR file into webapps:

```
C:\xampp\tomcat\webapps\demo.war
```

### Start Tomcat from XAMPP Control Panel

- Open XAMPP Control Panel, start Apache and Tomcat
- Tomcat will auto-deploy the demo.war file and extract it into webapps/demo/

## 3. Access the Application

```
http://localhost:8080/demo/
```

If you have a controller like:

```
@RestController
@RequestMapping("/api")
public class HelloController {
    @GetMapping("/hello")
    public String hello() {
        return "Hello from Spring Boot in XAMPP Tomcat!";
    }
}
```

You can access it at:

```
http://localhost:8080/demo/api/hello
```

## 4. Troubleshooting

### 404 Not Found

- Ensure Tomcat is running (http://localhost:8080/ should load Tomcat's default page).
- Check webapps/demo/WEB-INF/web.xml exists (means deployment worked).
- Restart XAMPP and try again.

### Application Won't Start

Check Tomcat logs:

```
C:\xampp\tomcat\logs\catalina.out
```

Make sure the WAR file is not inside a subfolder (webapps/demo.war, NOT webapps/demo/demo.war).