Spring Security and Angular

A Secure Single Page Application

In this tutorial we show some nice features of Spring Security, Spring Boot and Angular working together to provide a pleasant and secure user experience. It should be accessible to beginners with Spring and Angular, but there also is plenty of detail that will be of use to experts in either. This is actually the first in a series of sections on Spring Security and Angular, with new features exposed in each one successively. We'll improve on the application in the second and subsequent installments, but the main changes after this are architectural rather than functional.

Spring and the Single Page Application

HTML5, rich browser-based features, and the "single page application" are extremely valuable tools for modern developers, but any meaningful interactions will involve a backend server, so as well as static content (HTML, CSS and JavaScript) we are going to need a backend server. The backend server can play any or all of a number of roles: serving static content, sometimes (but not so often these days) rendering dynamic HTML, authenticating users, securing access to protected resources, and (last but not least) interacting with JavaScript in the browser through HTTP and JSON (sometimes referred to as a REST API).

Spring has always been a popular technology for building the backend features (especially in the enterprise), and with the advent of Spring Boot (https://projects.spring.io/spring-boot) things have never been easier. Let's have a look at how to build a new single page application from nothing using Spring Boot, Angular and Twitter Bootstrap. There's no particular reason to choose that specific stack, but it is quite popular, especially with the core Spring constituency in enterprise Java shops, so it's a worthwhile starting point.

Create a New Project

We are going to step through creating this application in some detail, so that anyone who isn't completely au fait with Spring and Angular can follow what is happening. If you prefer to cut to the chase, you can skip to the end where the application is working, and see how it all fits together. There are various options for creating a new project:

- Using curl on the command line
- Using Spring Boot CLI
- Using the Spring Initializr website
- Using Spring Tool Suite

The source code for the complete project we are going to build is in Github here (https://github.com/spring-guides/tut-spring-security-and-angular-js/tree/master/basic), so you can just clone the project and work directly from there if you want. Then jump to the next section.