Spring Boot: Developer

Course Description

This 2-day course offers experience with Spring Boot and its major features, including autoconfiguration, Actuator, Spring Boot testing framework and more. On completion, participants will have a foundation for creating enterprise and cloud-ready applications. Please note that this course is a subset of the material in our 4-day Spring: Core Training course - there is no need to take both courses.

Course Duration:

2 days

Prerequisites:

- A good working knowledge on web application development using Java and an IDE (Eclipse, STS or IntelliJ).
- Basic understanding of Spring: Java Config, component- scanning, Spring driven testing and Spring data-management (JdbcTemplate, @Transactional).
- Experience using Java and build tools such as Maven or Gradle

Objectives:

By the end of the course, you should be able to meet the following objectives:

- Describe the benefits provided by Spring Boot
- Initialize a project using Spring Boot Starters
- Leverage Spring Boot's auto configuration features
- Create simplified backing-store solutions using Spring Data JPA
- Build a simple MVC application using Spring Boot, embedded Web Server and fat JARs or classic WARs
- Build a RESTful Web application
- Utilize Spring Boot enhancements to testing
- Use Spring Security to secure Web and REST endpoints
- Enable and extend metrics and monitoring capabilities using Spring Boot actuator
- Leverage advance configuration capabilities

Course Outline:

1. Introduction to Spring Essentials
   - Why Spring
   - Configuration using Spring
   - Bean creation
   - Data Management
2. Spring Boot Introduction
   - Introduction to Spring Boot Features
   - Value Proposition of Spring Boot
   - Creating a simple Boot application using Spring Initializr website
3. Spring Boot – A Closer Look
   - Dependency management using Spring Boot starters
   - How auto-configuration works

- Configuration properties
- Overriding auto-configuration
- Using CommandLineRunner

4. Spring Boot – Spring Data JPA
   - Quick introduction to ORM with JPA
   - Benefits of using Spring with JPA
   - JPA configuration in Spring
   - Configuring Spring JPA using Spring Boot
   - Spring Data JPA dynamic repositories
5. Web Applications with Spring Boot
   - Introduction to Spring MVC and request processing
   - Controller method signatures
   - Using @Controller, @RestController and @GetMapping annotations
   - Configuring Spring MVC with Spring Boot
   - Spring Boot packaging options, JAR or WAR
6. RESTful Application with Spring Boot
   - An introduction to the REST architectural style
   - Controlling HTTP response codes with @ResponseStatus
   - Implementing REST with Spring MVC, @RequestMapping, @RequestBody and @ResponseBody
   - Spring MVC's HttpMessageConverters and automatic content negotiation
7. Spring Boot Testing
   - Spring Boot testing overview
   - Integration testing using @SpringBootTest
   - Web slice testing with MockMvc framework
   - Slices to test different layers of the application
8. Securing REST Application with Spring Security
   - What problems does Spring Security solve?
   - Configuring authentication
   - Implementing authorization by intercepting URLs
   - Authorization at the Java method level
   - Understanding the Spring Security filter chain
   - Spring security testing
9. Actuators, Metrics and Health Indicators
   - Exposing Spring Boot Actuator endpoints
   - Custom Metrics
   - Health Indicators
   - Creating custom Health Indicators
   - External monitoring systems

Who Should Attend

Application developers who want to increase their understanding of Spring and Spring Boot and a focus on fundamentals.