



Introduction to Spring 5.x | Spring Quick Start

JumpStart your Core Spring Developer Skills | Foundation, Spring Boot, Spring AOP, Persistence & More

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Course Snapshot

- **Course:** Introduction to Spring 5.x | Spring Quick Start (TT3320)
- **Duration:** 2 days
- **Skill Level:** Introduction to Spring development skills for intermediate-skilled Java developers
- **Audience:** This is a developer-focused course geared for experienced Java programmers who have current, hands-on Java coding experience to about an intermediate level. This course is not for non-developers.
- **Hands-on Learning:** This course is approximately **50% hands-on**, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation, live online virtual presentation**, or can be presented in a **flexible blended learning format** for combined onsite and remote attendees. Please also ask about our **Self-Paced / Video / QuickSkills or Mini-Camp Flex Hours / Short Course** options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please inquire for details.

Overview

The Spring framework is an application framework that provides a lightweight container that supports the creation of simple-to-complex components in a non-invasive fashion. Spring's flexibility and transparency is congruent and supportive of incremental development and testing. The framework's structure supports the layering of functionality such as persistence, transactions, view-oriented frameworks, and enterprise systems and capabilities. This course targets Spring 5.x, which includes full support for Java SE 11 and Java EE 8. Spring supports the use of lambda expressions and method references in many of its APIs. Spring 5.x is fully compatible with the module path introduced in Java 9.

Spring makes enterprise development easier. Spring simplifies common tasks and encourages good design based on programming to interfaces. Spring makes your application easier to configure and reduces the need for many JEE design patterns. Spring puts the OO design back into your enterprise application, and it integrates nicely with many view technologies and the new features of HTML5.

Learning Objectives

Introduction to Spring 5.x is a comprehensive hands-on introduction to Spring training course geared for experienced Java developers who wish to explore the Spring Framework in terms of today's systems and architectures, and learn how to use Spring in conjunction with other technologies and frameworks. Students will gain hands-on experience working with Spring, using Maven for project and dependency management, and, optionally, a test-driven approach (using JUnit) to the labs in the course.

This course provides a solid understanding of what Spring brings to the table and how to use Spring in the context of other technologies and frameworks. Students are taken on an in-depth tour of the basic Spring framework, initially examining concepts such as Inversion of Control and Dependency Injection, and then working with the container and basic components. Students are introduced to Spring Boot and use Spring Boot throughout the course. The course then moves into the areas of persistence and transactions, looking at various options.

Our engaging instructors and mentors are highly experienced practitioners who bring years of current "**on-the-job**" **application development and Spring experience** into every classroom. Working in a hands-on learning environment, led by our expert practitioner, students will:

- Explain the issues associated with complex frameworks such as JEE and how Spring addresses those issues
- Understand the relationships between Spring and JEE, AOP, IOC and JDBC.
- Write applications that take advantage of the Spring container and the declarative nature of assembling simple components into applications.
- Understand how to configure the Spring Boot framework

- Understand and work on integrating persistence into a Spring application
- Explain Spring's support for transactions and caching
- Work with Spring Boot to facilitate Spring setup and configuration
- Apply Aspect Oriented Programming (AOP) to Spring applications

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional Spring, programming, Microservices / Services, REST, TDD / testing, design, application security and other related topics that may be blended with this course for a track that best suits your needs. Our team will collaborate with you to understand your needs and will target the course to focus on your specific learning objectives and goals.

Audience & Pre-Requisites

This introduction to Spring development course requires that incoming students possess solid Java programming skills and practical hands-on Java experience. This class is geared for experienced Java developers who are new to Spring, who wish to understand how and when to use Spring in Java and JEE applications.

Take Before: Incoming students should have skills equivalent to the topics in, or should have recently attended, one of these courses as a pre-requisite:

- TT2100 Core Java Programming for Object Oriented Experienced Developers
- TT2120 Java Programming and OO Essentials for Developers New to OO

Follow On Courses / Take After: Our Next-Level Java and Spring developer courses provide students with a solid foundation for continued learning based on role, goals, or their areas of specialty. Our learning paths offer a wide variety of follow-on courses such as:

- Continued Spring: Core, MVC, Boot, REST, Data, Web, Cloud, Security, Reactive Spring & More
- Continued Java & JEE Programming: Advanced Java, Microservices / Web Services / REST, RxJava, Tuning, Patterns, Test Driven Development / Unit Testing & More
- Secure Java Coding / Java & JEE Security and secure web application development training
- Please contact us for recommended next steps tailored to your longer-term education, project, role or development objectives.

Enhanced Learning Services: Please also ask about our **Pre-Training Class OnRamp & Prep / Primer offerings, Skills Gap Assessment Services, Case Studies, Knowledge Check Quizzes, Skills Immersion Programs & Camps, Collaborative Mentoring Services and Extended Learning Support & Post Training services.**

Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most. Topics, agenda and labs are subject to change, and may adjust during live delivery based on audience interests, skill-level and participation.

Session: Introduction to Spring

Lesson: The Spring Framework

- Understand the value of Spring
- Explore Dependency Injection (DI) and Inversion of Control (IoC)
- Different ways of configuring collaborators
- Spring as an Object Factory
- Initializing the Spring IoC Container

Lesson: Configuring Spring Managed Beans

- Introduce Java-based configuration
- The @Configuration and @Bean annotations
- Define bean dependencies
- Bootstrapping Java Config
- Context Injection in Configuration classes
- Using context Profiles
- Conditionally loading beans and configurations
- Bean Life-Cycle Methods

- [Lab: Spring Java Config](#)

Lesson: Defining Bean dependencies

- Introduce Spring annotations for defining dependencies
- Explore the @Autowired annotation
- Stereotype Annotations
- Qualifying injection points
- Lifecycle annotations
- Using properties in Java based configuration
- The @Value annotation
- Using the Candidate Components

- Index
- [Lab: Configuring Bean Dependencies using Annotations](#)
- [Lab: Creating the Candidate Component Index](#)

Lesson: Introduction to Spring Boot

- Introduce the basics of Spring Boot
- Explain auto-configuration
- Introduce the Spring Initializr application
- Bootstrapping a Spring Boot application
- [Lab: Introduction to Spring using Spring Boot](#)

Lesson: Working with Spring Boot

- Provide an overview of Spring Boot

- Introduce starter dependencies
- Introduce auto-configuration
- @Enable... annotations
- Conditional configuration
- Spring Boot Externalized Configuration
- Bootstrapping Spring Boot
- [Lab: Create REST Repository using Spring Boot](#)

Session: Spring AOP**Lesson: Introduction to Aspect Oriented Programming**

- Aspect Oriented Programming
- Cross Cutting Concerns

Lesson: Spring AOP

- Spring AOP in a Nutshell
- @AspectJ support
- Spring AOP advice types

- AspectJ pointcut designators
- [Lab: Spring AOP: Adding Interceptors](#)

Session: Persistence in Spring**Lesson: Transaction Management in Spring**

- Understand Transaction Demarcation within Spring
- Configure the PlatformTransactionmanager
- The @Transactional annotation

Lesson: Spring JDBC

- JdbcDaoSupport - JDBC DAO Implementation
- The jdbcTemplate
- Exception Handling
- Operation Classes
- [Lab: Using Spring JDBC](#)

Course Materials: Each student will receive a **Student Guide** with course notes, code samples, software tutorials, step-by-step written lab instructions, diagrams and related reference materials and links (as applicable). Students will also receive the project files (or code, if applicable) and solutions required for the hands-on work.

Hands-on Setup Made Simple! Our dedicated tech team will work with you to **ensure your student machines and learning environment is setup, tested and ready to go** well in advance of the course delivery date, ensuring a smooth start to class and seamless hands-on experience for your students. We offer several flexible student machine setup options including **guided manual set up** for simple installation directly on student machines, or **cloud based / remote hosted lab solutions** where students can log in to a complete separate lab environment minus any installations, or we can supply **complete turn-key, pre-loaded equipment** to bring ready-to-go student machines to your students or in-person facility. Please inquire for details.

For More Information

For more information about our dedicated training services, collaborative mentoring services, courseware licensing options, courseware development services, public course schedule, training management services, partner and reseller programs, or to see our complete list of course offerings and special offers please visit us at www.triveratech.com, email Info@triveratech.com or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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