vmware EDUCATION SERVICES

Core Spring

Delivery Methods

- Instructor-led training
- Live-online
- Onsite training

Course Duration

- Four (4) days of instructor-led training
- 50% lecture, 50% hands-on lab

Target Audience

- Developers
- Architects

Course Suitability

☐ Administrator
☒ Engineer
☒ Architect

☐ Expert
☐ Advanced
☒ Professional
☐ Fundamentals

Prerequisites

- Experience with developing applications using Java

Pricing

Contact your VMware® representative or a VMware Authorized Training Center for pricing information.

More Information

Courses are conveniently scheduled around the world. Go to http://www.vmware.com/education to find the class that is right for you.

Onsite training is available for customers who prefer to bring a SpringSource/VMware Certified Instructor to their own facilities. For more information about onsite classes, including facility requirements, go to http://www.vmware.com/education.

Course Overview

Core Spring is the four-day flagship Spring Framework training. In this course, students build a Spring-powered Java application that demonstrates the Spring Framework and other Spring technologies like Spring AOP and Spring Security in an intensely productive, hands-on setting.

Completion of this training entitles you to receive a free voucher to schedule an exam at a Pearson VUE Center to become a Spring Certified Professional.

Course Objectives

By the end of the training, you should have an understanding of Spring and associated technologies and be able to do the following:

- Use the Spring Framework to develop Java applications.
- Use dependency injection to set up and configure applications.
- Test Spring-based applications.
- Set up Spring configuration using XML, annotations, and Java configuration.
- Use JPA/Hibernate and JDBC with Spring to access relational databases.
- Use Spring support for transactions.
- Use aspect-oriented programming (AOP) to add behavior to objects.
- Develop a basic Web application with Spring MVC.
- Use Spring Security to secure Web applications.
- Use Spring with RMI, HttpInvoker, and JMS for remote communication.
- Add management with the JMX API.

Course Modules

1 **Introduction to Spring**
- XML configuration and the Spring application context
- Best practices: constructor versus setter injection
- Working with multiple configuration files
- Bean scope and factory beans

2 **Advanced XML Dependency Injection**
- Most popular namespaces
- Best practices when working with namespaces
- Externalizing constant values into properties files
- Working with a high number of configuration files
- Bean definition inheritance

3 **Annotation-Based Dependency Injection**
- Autowiring and component scanning
- Component scanning: how to do it right
- XML versus annotations: when to use what
- Life cycle annotations: @PostConstruct and @PreDestroy
- Stereotypes and meta-annotations

4 **Java-Based Dependency Injection**
- @Configuration and @Bean annotations
- Where is the magic? Inheritance-based proxies
- Equivalent to XML namespaces: @Enable annotations
- When to use Java configuration

5 **Bean Life Cycle: How Does Spring Work Internally?**
- The init phase: available interceptors
- The init phase: what is the difference between XML, annotations, and Java configuration?
- What happens during bean post processing
- Use and destruction phases

6 **Testing a Spring-Based Application**
- Spring and test-driven development
- @ContextConfiguration and @RunWith annotations
- Application context caching and the @DirtiesContext annotation
- Environment abstraction and bean definition profiles

7 **Aspect-Oriented Programming**
- What problems does AOP solve?
- Differences between Spring AOP and AspectJ
- Defining pointcut expressions
- Implementing an advice: @Around, @Before, @After, and so on

8 **Data Access and JDBC with Spring**
- How Spring integrates with existing data access technologies
- DataAccessException hierarchy
- Implementing caching using @Cacheable
- jdbc namespace and the Spring JdbcTemplate

9 **Database Transactions with Spring**
- @Transactional annotation
- Transactions configuration: XML versus annotations
- Isolation levels, transaction propagation, and rollback rules
- Transactions and integration testing
- Should you use read-only transactions?

10 **Integrating Spring with JPA and Hibernate**
- Quick introduction to ORM with JPA
- Benefits of using Spring with JPA
- JPA configuration in Spring
- PersistenceException versus the Spring DataAccessException

11 **Spring in a Web Application**
- Configuring Spring in a Web application (using Spring MVC, Struts, JSF, and so on)
- <mvc/> namespace
- Introduction to Spring MVC
- Using @Controller and @RequestMapping annotations

12 **Spring Security**
- What problems does Spring Security solve?
- Configuring authentication and intercepting URLs
- Spring Security tag library for JSPs
- Security at the method level
- Customizing the Spring Security filter chain

13 **Advanced Topics**
- Remoting: Using Spring remoting and the Spring HttpInvoker for remote access
- JMS: Sending and receiving messages using the JmsTemplate
- JMX: Configuring Spring to export automatically MBeans and exporting a Spring bean as an MBean

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.

VMware SKU: EDU-S2-SEAT-SP-CORE Rev. 1/2013