

SPRING: CORE TRAINING



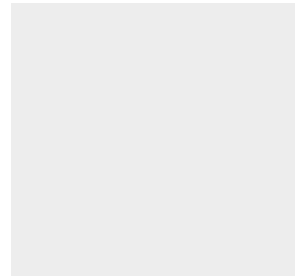
Course Level:
Professional

Course Duration:
4 Days

Course Overview:

This 4-day certification training course from CloudThat prepares students for the Spring Professional certification exam. By attending this course, candidates will learn and acquire hands-on experience on major features of Spring and Spring Boot, including configuration, data access, REST, AOP, auto-configuration, actuator, security, and Spring testing framework. The knowledge gained through this training will help candidates in building efficient enterprise and microservices applications.












On course completion, candidates preparing for VMware Spring: Core course will have a strong foundation for creating enterprise and cloud-ready applications. By enrolling in our VMware Spring Core training program, learners will acquire the necessary skills and knowledge required to clear the final exam successfully. Candidates attending our training get access to the authored curriculum and be part of our engaging and interactive learning sessions delivered by VMware certified in-house trainers.



Prerequisites

Some developers experience using Java, an IDE (Eclipse, STS or IntelliJ) and build tools such as Maven or Gradle.

Objectives

-  Spring configuration using Java Configuration and Annotations
-  Aspect oriented programming with Spring
-  Testing Spring applications using JUnit 5
-  Spring Data Access - JDBC, JPA and Spring Data
-  Spring Transaction Management
-  Simplifying application development with Spring Boot
-  Spring Boot auto-configuration, starters and properties
-  Build a simple REST application using Spring Boot, embedded Web Server and fat JARs or classic WARs
-  Implementing REST client applications using RestTemplate and WebClient Spring Security
-  Enable and extend metrics and monitoring capabilities using Spring Boot actuator
-  Utilize Spring Boot enhancements to testing

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Course Outline

Module 1: Introduction to Spring

Topics

- Java configuration and the Spring application context
- @Configuration and @Bean annotations
- @Import: working with multiple configuration files
- Defining bean scopes
- Launching a Spring Application and obtaining Beans

Module 2: Spring JAVA Configuration: A Deeper Look

Topics

- External properties & Property sources
- Environment abstraction
- Using bean profiles
- Spring Expression Language (SpEL)

Module 3: Annotation-based Dependency Injection

Topics

- Component scanning
- Autowiring using @Autowired
- Java configuration versus annotations, mixing.
- Lifecycle annotations: @PostConstruct and @PreDestroy
- Stereotypes and meta-annotations

Course Outline

Module 4: Factory Pattern in Spring

Topics

- Using Spring FactoryBeans

Module 6: Aspect-oriented programming

Topics

- What problems does AOP solve?
- Defining pointcut expressions
- Implementing various types of advice

Module 8: Data Access and JDBC with Spring

Topics

- How Spring integrates with existing data access technologies
- DataAccess Exception hierarchy
- Spring s JDBC Template

Module 5: Advanced Spring: How Does Spring Work Internally?

Topics

- The Spring Bean Lifecycle
- The BeanFactoryPostProcessor interception point
- The BeanPostProcessor interception point
- Spring Bean Proxies
- @Bean method return types

Module 7: Testing a Spring-based Application

Topics

- Spring and Test-Driven Development
- Spring 5 integration testing with JUnit 5
- Application context caching and the @DirtiesContext annotation
- Profile selection with @ActiveProfiles
- Easy test data setup with @Sql

Course Outline

Module 9: Database Transactions with Spring

Topics

- Transactions overview
- Transaction management with Spring
- Transaction propagation and rollback rules
- Transactions and integration testing

Module 10: Spring Boot Introduction

Topics

- Introduction to Spring Boot Features
- Value Proposition of Spring Boot
- Creating a simple Boot application using Spring Initializer website

Module 11: Spring Boot Dependencies, Auto-configuration, and Runtime

Topics

- Dependency management using Spring Boot starters
- How auto-configuration works
- Configuration properties
- Overriding auto-configuration
- Using CommandLineRunner

Module 12: JPA with Spring and Spring Data

Topics

- 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

Course Outline

Module 13: Spring MVC Architecture and Overview

Topics

- 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

Module 14: Rest with Spring MVC

Topics

- 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

Module 15: Spring Security

Topics

- 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

Module 16: Actuators, Metrics and Health Indicators

Topics

- Exposing Spring Boot Actuator endpoints
- Custom Metrics
- Health Indicators
- Creating custom Health Indicators
- External monitoring systems

Course Outline

Module 17: Spring Boot Testing Enhancements

Topics

- Spring Boot testing overview
- Integration testing using `@SpringBootTest`
- Web slice testing with MockMvc framework
- Slices to test different layers of the application

Module 18: Spring Security OAuth (Optional Topic)

Topics

- OAuth 2 Overview
- Implementing OAuth 2 using Spring Security OAuth

Module 19: Reactive Applications with Spring (Optional Topic)

Topics

- Overview of Reactive Programming concepts
- Reactive Programming support in Spring
- Using Spring's reactive WebClient

Who Should Enroll for this Course?

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

About CloudThat

CloudThat is the first company in India to offer Cloud Training & Consulting services for mid-market & enterprise clients from across the globe. Since our inception in 2012, we have trained over 500K+ IT professionals from fortune 500 companies on technologies such as cloud, Artificial Intelligence, Machine Learning, IoT, OpenStack, OpenShift, DevOps, MongoDB, Big Data and more.

Through sheer dedication and excellence in the field of cloud training, CloudThat has recently been recognized as **VMware Authorized Training Reseller**. In addition, CloudThat is a proud Microsoft Gold Partner, AWS Advanced Consulting Partner, Google Cloud Platform Partner, and Databricks Partner. Recently, we have won the Microsoft Asia Superstar Campaign for India-2021 for being a global leader in providing cloud training and consultancy services with exemplary track record.

Our Success Track

10+ Years
of Experience

100+
Corporates served

28+
countries catered

500K+
Professionals trained

200+
Projects delivered

350+
Cloud certifications

To know more about our VMware certification training, email at sales@cloudthat.com or call us at +918880002200.