Introduction to Reactive Spring (TT3355)

Category: Software Development & Programming | **Vendor:** Trivera Tech

Duration: 32.00 hours (4 days) **26.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format:	Instructor Led - Online
Certification:	Cisco Certified Specialist – Service Provider Advanced Routing
Related Exam:	300-510

Course Overview

Spring Data reative allow us to implement database operations relying on Reative Programming APIs. While the Spring R2DBC initiative aims to bring reactive programming to relational databaes, several NoSQL databases already provide this possibility. After an introduction to NoSQL and the MongoDB, this courses covers the APIs available to communicate with this NoSQL database using both blocking and reactive APIs.Introdcution to Reactive Spring is a comprehensive Java training workshop geared for experienced developers who wish to explore concurrent, asynchronous and reactive programming APIs and techniques using Spring. After an introduction to reactive programming, Reactive Streams and the Project Reactor APIs, this course will show how this APIs are integrated into Spring. Spring 5 includes Spring WebFlux, providing a reactive programming model for web applications, including support for Reactive REST APIs. Spring WebSocket assists in the creation of web applications which provide a full-duplex, two-way communication between client and server.

About This Course

Spring Data reative allow us to implement database operations relying on Reative Programming APIs. While the Spring R2DBC initiative aims to bring reactive programming to relational databaes, several NoSQL databases already provide this possibility. After an introduction to NoSQL and the MongoDB, this courses covers the APIs available to communicate with this NoSQL database using both blocking and reactive APIs.Introdcution to Reactive Spring is a comprehensive Java training workshop geared for experienced developers who wish to explore concurrent, asynchronous and reactive programming APIs and techniques using Spring. After an introduction to reactive programming, Reactive Streams and the Project Reactor APIs, this course will show how this APIs are integrated into Spring. Spring 5 includes Spring WebFlux, providing a reactive programming model for web applications, including support for Reactive REST APIs. Spring WebSocket assists in the creation of web applications which provide a full-duplex, two-way communication between client and server.

Who Should Attend

This in an intermediate-level Java development course geared for students experienced with Java and Spring programming essentials. This course does not cover Java or Spring development basics.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Working within in an engaging, hands-on learning environment, guided by our expert team, attendees will:

Understand the ReactiveX specification

Understand the basics of Reactive Programming

Discuss the advantages and limitations of Observables

Write a client application capable of handling Reactive events

Apply operators to event streams to filter, modify and combine the objects emitted by event publishers

Select the appropriate type of Event Source

Use both Cold and Hot Observables

Deal with backpressure problems in reactive programming

Develop a reactive web application using Spring WebFlux

Define application flows of a WebFlux application

Use the WebClient API to work with both synchronous and streaming APIs

Develop Unit and Integration tests to test WebFlux endpoints

Creating a reactive REST endpoint

Become familiar with the basics of WebSockets

Create a WebSocket endpoint using Spring

Create a WebSocket client

Understand the basics of NoSQL

Become familiar with the basics of MongoDB

Understand how the data in MongoDB can be retrieved using a Reactive API

Define Spring Data MongoDB repositories

Query the MongoDB using Spring Data

Define a reactive repository using MongoDB

Explore the Spring Data R2DBC API to perform reactive CRUD operations against a relational database

Detailed Course Outline

Introduction to Reactive Programming

- Reactive Manifesto
- Introduce ReactiveX
- ReactiveX implementations
- The Observer, Iterator pattern and functional programming
- Discuss hot and cold publishers

Reactive Streams API

- Introduce the Reactive Streams specification
- Publisher and Subscribers
- java.util.concurrent.Flow
- Transformation of Messages (Processor)
- Controlling messages
- Tutorial: Setup Eclipse for Using Maven

Introduction

- Introduce the Reactor Building blocks
- Flux and Mono
- Creating observables
- Subscribing to a stream

Testing Event Sources (introduction)

- Testing reactive implementations
- StepVerifier : test sequence of emitted items
- Defining expectations
- TestPublisher: produce test data to test downstream operators

Reactive Operators

- Introduce Operators
- Show the use of marble diagrams
- Explain some commonly used operators
- Callback operators

Schedulers (Multithreading)

- Thread usage of subscriber and consumer
- Using the subscribeOn method
- Introduce the Scheduler interface
- Using the observeOn method

Backpressure

- Strategies for dealing with Backpressure
- reactive pull backpressure

Exception Handling

- Handling errors in onError
- Exception handling strategies
- Using onErrorReturn or onErrorNext operators
- Using the retry operators
- The Global Error Handler

Spring Data Review

- Quick review of Spring Data repositories
- Query return types
- Defining Query methods
- Pagination and sorting

R2DBC

- Reactive Relational Database Connectivity
- DatabaseClient
- Performing CRUD operations
- Reactive Query annotated methods

Spring WebFlux: Introduction

- Annotated Controllers
- Functional Endpoints
- WebFlux configuration
- Creating a reactive REST endpoint

Defining flows

- Defining the application flow
- Actions
- Defining decision
- Navigating flows
- RouterFunction

View Technologies

- View technologies
- Using Thymeleaf to create the view
- View Configuration

Spring WebClient: Introduction to WebClient

- Working with asynchronous and streaming APIs
- Making requests
- Handling the response
- Lab: WebClient

WebTestClient

- Testing WebFlux server endpoints
- Testing controllers or functions
- Define integration tests

Introduction to Spring Reactive WebSockets

- Be familiar with the basics of WebSockets
- Understand the HTTP handshake and upgrade
- Name some of the advantages of WebSockets

Defining the WebSocket

- WebSocket Message Handling
- WebSocketSession
- Implementing the WebSockethandler
- Creating a Browser WebSocket Client

WebSocket STOMP

- Streaming (or Simple) text-orientated messaging protocol
- Introduce SockJS
- Connecting to the STOMP endpoint
- Configuring the message broker
- STOMP destinations

Reactive WebSocket

- Reactive WebSocket support
- Implement the reactive WebSocketHandler

BigData

- Introduce Big Data
- Explain the need for enhanced data storage

Introduction to MongoDB

- JavaScript Object Notation Overview
- Introduce Binary JSON (BSON)
- Starting the database
- Creating Collections and Documents
- Executing simple database commands
- Introduce the ObjectID
- Searching for documents using query operators
- Updating and deleting documents
- MongoDB Compass

Spring and MongoDB

- MongoDB Support in Spring Data
- MongoClient and MongoTemplate
- Spring Data MongoDB configuration
- @EnableMongoRepositories
- Adding documents to the database
- The @Document and @Field annotations
- Polymorphism and the _class property
- The Criteria object

Spring Data MongoDB

- MongoRepository
- Field naming strategy
- Using JSON queries to find documents
- The @PersistenceConstructor annotation

Reactive Repositories with MongoDB

- Using reactive repositories
- ReactiveMongoTemplate
- RxJava or Reactor

□□ Certification Path

Cisco Certified Specialist – Service Provider Advanced Routing

Exam: 300-510

Additional Course Details

Nexus Humans Introduction to Reactive Spring (TT3355) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Introduction to Reactive Spring (TT3355) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Introduction to Reactive Spring (TT3355)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: What certification does this course prepare me for?

The Introduction to Reactive Spring (TT3355) course helps prepare you for the Cisco Certified Specialist – Service Provider Advanced Routing certification path.

Q: Which exam does this course prepare me for?

This course prepares you for the 300-510 official exam. You can take this exam at any exam center across United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online wherever you are located.

Q: How many CPD hours does this course provide?

The 4-day Introduction to Reactive Spring (TT3355) course provides up to 26.0 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Introduction to Reactive Spring (TT3355) training?

The training takes place over 4 day(s), with each day lasting approximately 32.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Introduction to Reactive Spring (TT3355)?

Yes, we provide corporate training, dedicated training, and closed classes for Introduction to Reactive Spring (TT3355). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: Why choose Nexus Human for Introduction to Reactive Spring (TT3355)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Introduction to Reactive Spring (TT3355) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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