



## Working with Apache Kafka for Developers

Explore Kafka Concepts, Architecture, Programming in Kafka, Streaming, Monitoring, Tuning & More

[www.triveratech.com](http://www.triveratech.com)

### Course Snapshot

- **Course:** Working with Apache Kafka for Developers (TTDS6763 / TTDSKFKA2)
- **Duration:** 2 days
- **Audience:** This introductory-level course is geared for experienced data scientists and software engineers.
- **Hands-on Learning:** This course is approximately 50% hands-on lab to 50% lecture ratio, combining engaging lecture, demos, group activities and discussions with machine-based student 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

**Apache Kafka** is a real-time data pipeline processor. Its high-scalability, fault tolerance, execution speed, and fluid integrations are some of the key hallmarks that make it an integral part of many Enterprise Data architectures. In this lab intensive two-day course, students will learn how to use Kafka to build streaming solutions.

### Objectives

This “skills-centric” course is about **50% hands-on lab and 50% lecture**, coupling the most current techniques with the soundest industry practices. Throughout the course students will be led through a series of progressively advanced topics, where each topic consists of lecture, group discussion, comprehensive hands-on lab exercises, and lab review.

Working in a hands-on learning environment, students will explore

- Overview of Streaming technologies
- Kafka concepts and architecture
- Programming using Kafka API
- Kafka Streams
- Monitoring Kafka
- Tuning / Troubleshooting Kafka

**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 Kafka, big data / data science, Hadoop, Apache tooling, DevOps, database, programming 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 is an **intermediate-level** course is geared for experienced Java developers seeking to be proficient in Apache Kafka. Attendees should be experienced developers who are comfortable with Java, and have reasonable experience working with databases. Students should also be able to navigate Linux command line, and who have basic knowledge of Linux editors (such as VI / nano) for editing code.

**Take Before:** Students should have attended the course(s) below, or should have basic skills in these areas:

- TT2104 Core Java Programming Fundamentals

**Learning Paths:** We offer courses in next level Hadoop, Kafka, Hive, DevOps, Databases, Analytics and more. Please contact us for details and next step recommendations based on your specific roles and goals.

**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. Course topics, agenda and labs are subject to change, and may adjust during live delivery based on audience needs, participation and skill-level.*

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|--|---|---|
| <p><b>1. Introduction to Streaming Systems</b></p> <ul style="list-style-type: none"> <li>Fast data</li> <li>Streaming architecture</li> <li>Lambda architecture</li> <li>Message queues</li> <li>Streaming processors</li> </ul>  | <ul style="list-style-type: none"> <li>to Kafka)</li> <li>Consumer API (consuming messages from Kafka)</li> <li>Commits , Offsets, Seeking</li> <li>Schema with Avro</li> <li>Lab : Writing Kafka clients in Java; Benchmarking Producer APIs</li> </ul>  | <ul style="list-style-type: none"> <li>consumers</li> <li>Security: How secure Kafka cluster, and secure client communications (SASL, Kerberos)</li> <li>Monitoring : monitoring tools</li> <li>Capacity Planning : estimating usage and demand</li> <li>Trouble shooting : failure scenarios and recovery</li> </ul> |
| <p><b>2. Introduction to Kafka</b></p> <ul style="list-style-type: none"> <li>Architecture</li> <li>Comparing Kafka with other queue systems (JMS / MQ)</li> <li>Kafka concepts : Messages, Topics, Partitions, Brokers, Producers, commit logs</li> <li>Kafka &amp; Zookeeper</li> <li>Producing messages</li> <li>Consuming messages (Consumers, Consumer Groups)</li> <li>Message retention</li> <li>Scaling Kafka</li> <li>Labs : Getting Kafka up and running; Using Kafka utilities</li> </ul> | <p><b>4. Kafka Streams</b></p> <ul style="list-style-type: none"> <li>Streams overview and architecture</li> <li>Streams use cases and comparison with other platforms</li> <li>Learning Kafka Streaming concepts (KStream, KTable, KStore)</li> <li>KStreaming operations (transformations, filters, joins, aggregations)</li> <li>Labs: Kafka Streaming labs</li> </ul> | <p><b>6. Monitoring and Instrumenting Kafka</b></p> <ul style="list-style-type: none"> <li>Monitoring Kafka</li> <li>Instrumenting with Metrics library</li> <li>Labs; Monitor Kafka cluster</li> <li>Instrument Kafka applications and monitor their performance</li> </ul>  |
| <p><b>3. Programming With Kafka</b></p> <ul style="list-style-type: none"> <li>Configuration parameters</li> <li>Producer API (Sending messages</li> </ul>   | <p><b>5. Administering Kafka</b></p> <ul style="list-style-type: none"> <li>Hardware / Software requirements</li> <li>Deploying Kafka</li> <li>Configuration of brokers / topics / partitions / producers /</li> </ul>  | <p><b>Case Study / Workshop (Time-Permitting)</b></p> <p>Students will build an end-to-end application simulating web traffic and send metrics to Grafana.</p>  |

**Student Materials:** Each participant will receive a **Student Guide** with course notes, code samples, software tutorials, step-by-step written lab instructions, diagrams and related reference materials and resource links. 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 our 'easy-access' cloud-based course environment is accessible, fully-tested and verified as ready to go well in advance of the course start date, ensuring a smooth start to class and effective learning experience for all participants. Please inquire for details and options.

## For More Information

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses, self-paced learning options, recorded sessions**

and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training, Boot Camps, Skills Immersion Programs, Reskilling Programs, Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget.

Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

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

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