CONFLUENT

Datasheet

TRAINING COURSE

Confluent Stream Processing using Apache Kafka® Streams and ksqlDB

Course Objectives

The lessons and activities in this course enable participants to build the skills to:

- Identify common patterns and use cases for real-time stream processing
- Describe the high-level architecture of Apache Kafka Streams
- Write real-time applications with the Kafka Streams API to filter, transform, enrich, aggregate, and join data streams
- Describe how ksqlDB combines the elastic, fault-tolerant, high-performance stream processing capabilities of Kafka Streams with the simplicity of a SQL-like syntax
- Author ksqlDB queries that showcase their balance of power and simplicity
- Test, secure, deploy, and monitor Kafka Streams applications and ksqlDB queries

Hands-on Training

Throughout the course, you will practice with hands-on lab exercises to reinforce stream processing concepts.

Exercises include:

- Exploring the anatomy of a Kafka Streams Application
- Joining Two Streams
- Using the Kafka Streams Processor API
- Testing a Kafka Streams Application
- Using ksqlDB
- Using the ksqlDB REST API
- Scaling a Kafka Streams Application
- Securing a Kafka Streams Application
- Getting metrics from a Kafka Streams Application
- Using JConsole to monitor a Kafka Streams Application

Prerequisites

Attendees should be familiar with developing professional apps in Java (preferred), .NET, C#, Python, or another major programming language.

- It is highly encouraged for key members of the team to complete training beforehand to ensure familiarity with the relevant concepts. Visit www.confluent.io/training to learn the fundamentals of data streaming and Apache Kafka

Participants are required to provide a laptop computer with unobstructed internet access to fully participate in the class.

To sign-up for one of our courses, visit us here.

Who Should Attend?

This course is designed for application developers, architects, DevOps engineers, and data scientists who need to interact with Kafka clusters to create real-time applications to filter, transform, enrich, aggregate, and join data streams to discover anomalies, analyze behavior, or monitor complex systems.

Content	This course will enable your skills to:
Introduction to Kafka Streams	• Gain a better understanding of the fundamentals of Apache Kafka • Delve into how Apache Kafka uses the group management protocol to balance resources • Give a description of some Stream Processing concepts
Working with Kafka Streams	• Describe the anatomy of a Kafka Streams application • Write a streams application employing components of the Kafka Streams DSL—stateless and stateful transformations, and optimizations
Introduction to ksqlDB	• Examine end-to-end examples for using ksqlDB • Interact with ksqlDB • Integrate connectors with ksqlDB
Using ksqlDB	• Perform data transformations with ksqlDB • Exploring scalar and table functions in ksqlDB
Stateful Transformation Using Kafka Streams and ksqlDB	• Review the concept of time in Apache Kafka Streams • Use the stateful operations of windowing, aggregations, and joins with Kafka Streams and ksqlDB
Advanced Concepts	• Explore foreign key joins in Kafka Streams • Creating user-defined functions with ksqlDB • Use the Kafka Streams Processor API
Testing, Monitoring and Troubleshooting	• Perform testing with Apache Kafka Streams • Evaluate some of the options available for monitoring with JMX, Confluent Control Center, and explain some ksqlDB-specific considerations • Discuss common errors and troubleshooting approaches
Deployment Strategies and Security Basics	• Discuss these deployment strategies and describe when to use them: parallelism, capacity planning, elasticity, fault tolerance, and ksqlDB-specific considerations • Explore the security basics needed to begin to design your security architecture: • Security overview • Access Control examples

Visit confluent.io/training for more information.