Updated 05/02/2025

Sign up

Kafka training

3 days (21 hours)

Presentation

Master a streaming and scalable platform, learn to configure distributed architectures, manipulate data pipelines, and use Kafka APIs (Core Kafka, Kafka Streams, Kafka Connect).

Our Apache Kafka training course will help you master this distributed streaming platform, essential for processing real-time data streams.

You'll learn how to install, configure and administer Kafka, and how to produce and consume messages to build robust data pipelines.

This training course will provide you with the skills you need to fully exploit Kafka's potential in your projects, ensuring efficient management of real-time data flows.

As with all our training courses, our Kafka course will introduce you to the latest version and its new features (at the time of writing: Kafka 3.9).

Objectives

- Understanding Kafka's architecture and fundamental concepts
- Implement consumers / producers efficiently
- Manage API upgrades
- Integrate various sources
- Understanding event-driven architectures
- Implementing security

Target audience

- Developers
- Data Scientists
- Architects
- System administrators
- DevOps

Prerequisites

- Basic knowledge of a Unix system
- Knowledge of a modern development language (Java, Python, Scala)
- Understanding the concepts of messaging and data flow processing

Software prerequisites (in the case of Intra-company training)

- The latest OS updates
- The latest version of JDK
- ZooKeeper Framework updated

RECOMMENDED READING BEFORE THE COURSE

- Kafka in a nutshell is an excellent way to understand the basics of the software.
- Official apache Kafka documentation
- An article to help you understand Kafka jargon

Kafka training program

Introduction to Kafka

- Introducing the Apache Kafka project
- Main use cases: Message broker, event buffering, event-driven architecture.
- Understanding the concept of distributed logs: topic, partition, consumer group

Kafka cluster

- Cluster nodes: controllers, brokers, coordinators. Kraft vs Zookeper
- Distributions : The different installation alternatives
- Essential Kafka utilities: Command-line tools
- Graphical management and monitoring tools (e.g. Kafka Manager, Confluent Control Center, AKHQ, ...)
- Workshops: Setting up a docker stack starting with Kafka and an administration tool, Practice online ordering tools

Kafka APIs

- Producer API: synchronous, asynchronous, fire-and-forget production. Comparison
- Consumer API: Poll loop, offsets management
- Schema management with a Schema Registry: Compatibility modes
- Connect API: Integration with other systems, connector management
- Admin API walkthrough
- Workshops: 1 workshop on each point in the participants' language (Java, C#, Python, Javascript), ...)

Kafka warranties

- Understanding replication mechanisms and their importance
- At Most Once and At Least Once warranties
- How to get Exactly Once
- Configurations for throughput and latency
- Workshops: Testing the default configuration, Developing a processor Exactly Once

Kafka Stream

- Kafka Streams concepts for distributed processing
- Introducing and using the Kafka Stream API
- Discover ksqlDB: SQL queries on Kafka streams
- Workshops: Developing a processor with KafkaStream, Discovering kSQLDB

Security

- Configuring listeners in Kafka
- SSL/TLS for secure communications
- Customer authentication via SASL: Plain, SCRAM, Kerberos, OAuth2
- Managing access rights with ACLs
- Setting quotas to limit resource use
- Workshops: Starting up a secure stack, involvement in customer code

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or learning difficulties.

in-company security (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.