Apache Kafka – Fundamentals

Description

The Apache Kafka – Fundamentals training helps you understand the key role of this system in real-time data management. Designed as a reliable and scalable streaming platform, Apache Kafka provides organizations with a way to process massive data flows quickly and accurately. Many sectors, such as finance, e-commerce, or cybersecurity, already rely on Kafka to analyze and act on their data instantly.

Why take this Apache Kafka training

In a context where data has become strategic, mastering Apache Kafka is a major asset. This Kafka course introduces the essential foundations to understand how it works, its architecture, and its real-world applications. You will learn to identify scenarios where Kafka brings real added value, such as real-time fraud detection, application integration, or microservices management. This pragmatic approach allows you to grasp the importance of a modern event streaming system in a constantly evolving digital environment.

Course Content
Module 1: Motivation and Customer Use Cases

- Motivation for a paradigm change to "Event-driven"
- How Kafka is the backbone of real-time event streaming
- How other major players in the market use Kafka
- Customer Use Cases
- Microservices, IoT and Edge Computing
- Core Banking, payments engine and fraud detection
- Cyber Data Collection and Dissemination
- ESB Replacement
- Data Pipelining
- eCommerce and Customer 360
- Mainframe offloading

Module 2: Apache Kafka Fundamentals

- Architecture
- ZooKeeper's role
- Topics, Partitions and Segments
- The commit log and streams
- Brokers and Broker replication
- Producers Basics
- Consumers, Consumer groups and Offsets

Module 3: How Kafka Works

- High-level code overview for a basic producer and a basic consumer
- High Availability through Replication
- Data Retention Policies
- Producer Design and Producer Guarantees

- Delivery Guarantees, including Exactly Once Semantic
- Partition strategies
- Consumer group rebalances
- Compacted Topics
- Troubleshooting strategies
- Security overview

Module 4: Integrating Kafka into your Environment

- Get streams of data into and out of Kafka with Kafka Connect and REST Proxy
- Maintain data formats and ensure compatibility with Schema Registry and Avro
- Build real-time streaming applications with Confluent KSQL & Kafka Streams

Module 5: The Confluent Platform

- The Streaming Platform as the Central Nervous System
- Deployment Models — on premise versus SaaS
- The Confluent Control Center
- Role Based Access Control (RBAC)
- The Confluent CLI
- Confluent Operator
- The Confluent Hub for Certified Connecto

Lab / Exercises

- Launching and exploring a minimal Kafka cluster
- Using Kafka command line tools to explore cluster meta data in ZooKeeper, create topics on the cluster, and publish & consume messages
- Running a Java based consumer and observe consumer lag when scaling the consumer
- Configuring Kafka Connect with a MQTT Connector source to create a data pipeline
- Using Confluent Control Center to monitor your cluster and execute KSQL queries

Exam

- This course prepares you to the Confluent Certified Developer for Apache Kafka. If you wish to take this exam, please contact our secretariat who will let you know the cost of the exam and will take care of all the necessary administrative procedures for you

Participant profiles

- Developers and software engineers
- System and platform administrators
- Technical architects
- Data analysts and data engineers
- IT managers involved in real-time projects

Prerequisites

- Basic understanding of the Linux OS
- Experience in using a shell like Bash is beneficial

Objectives

- Understand Kafka's architecture and key concepts

- Explore major enterprise use cases
- Configure producers, consumers, and brokers
- Ensure high availability and replication
- Integrate Kafka into an existing environment
- Leverage Kafka Connect, Schema Registry, and KSQL
- Discover the Confluent platform and its tools

Description
Apache Kafka Training - Fundamentals
Niveau
Fondamental
Classroom Registration Price (CHF)
800
Virtual Classroom Registration Price (CHF)
750
Duration (in Days)
1
Reference
KAF-FO