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Sign up

Apache Kafka Training: Data Streaming

3 days (21 hours)

Overview

Apache Kafka enables the management of real-time data streams and the construction of high-performance, distributed streaming architectures.

Our Apache Kafka: Data Streaming training will enable you to master the deployment and configuration of Kafka, the production and consumption of messages, as well as the management of topics, partitions, and replicas.

You will learn how to structure real-time data streams, ensure the resilience of data exchanges, and optimize the performance of a Kafka platform in a Big Data environment.

Upon completion of the course, participants will be able to manage real-time data streams.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Deploy and configure Kafka.
- Produce and consume messages.
- Manage topics, partitions, and replicas.
- Ensure the reliability and resilience of data streams.

Target Audience

- Developers

- Data engineers

Prerequisites

- Basic understanding of messaging

Technical prerequisites

- A computer with at least 8 GB of RAM; 16 GB recommended
- 30 GB of available disk space
- Stable internet connection
- A modern browser; Chrome is recommended for the labs

Apache Kafka Training Program: Data Streaming

[Day 1 - Morning]

Understanding the Apache Kafka architecture

- Understanding the principles of data streaming
- Overview of the Apache Kafka architecture
- Role of brokers, topics, and partitions
- Managing producers and consumers
- Real-time use cases with Kafka
- Hands-on workshop: Setting up a Kafka environment.

[Day 1 - Afternoon] Deploying

and configuring Kafka

- Installing and configuring a Kafka cluster
- Creating and managing topics
- Configuring brokers and replication
- Managing Kafka partitions
- Optimizing configuration settings
- Hands-on workshop: Deploying and configuring a Kafka cluster.

Producing and consuming messages

- Creating Kafka producers

- Creating Kafka consumers
- Producing and consuming real-time streams
- Managing offsets and consumer groups
- Structuring distributed data exchanges
- Hands-on workshop: Setting up a Kafka message stream.

[Day 2 - Morning]

Managing topics, partitions, and replicas

- Understanding the role of partitions
- Configuring data replication
- Ensuring fault tolerance
- Optimizing message distribution
- Ensuring the availability of Kafka streams
- Hands-on workshop: Advanced topic and partition management.

[Day 2 - Afternoon]

Ensuring the reliability and resilience of streams

- Implementing resilience strategies
- Managing errors and processing recovery
- Securing Kafka exchanges
- Monitoring cluster performance
- Apply Kafka best practices
- Hands-on workshop: Setting up a resilient Kafka stream.

Integrating Kafka into a data environment

- Connecting Kafka to applications and databases
- Using Kafka in a Big Data architecture
- Integrating Kafka with data pipelines
- Structuring real-time streaming flows
- Standardizing data exchanges
- Hands-on workshop: Integrating Kafka into a data architecture.

[Day 3 - Morning]

Monitoring and optimizing Kafka performance

- Analyzing the performance of Kafka clusters
- Identifying latency issues
- Optimizing streaming processing
- Implement monitoring strategies

- Optimize resources and scalability
- Hands-on workshop: Optimizing a Kafka cluster.

[Day 3 - Afternoon]

Comprehensive Apache Kafka case study

- Analyzing a real-time business requirement
- Deploy and configure a Kafka platform
- Create producers and consumers
- Manage stream resilience and monitoring
- Optimizing streaming performance
- Hands-on workshop: Completing a full Apache Kafka project.

Target Audience

This training is intended for both individuals and companies, large or small, seeking to train their teams in new advanced IT technologies or to acquire specific business knowledge or modern methodologies.

Placement upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

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

Organization

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

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program.