AMBIENT-IT

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Sign up

Kafka Administration training

3 days (21 hours)

Presentation

Kafka is a distributed messaging system for Big Data event flows.
Our Kafka Administration training course will give you an in-depth understanding of

architecture

In this hands-on training course, you'll learn how to manage, set up, administer and configure a Kafka cluster.

Your team will learn more about how Kafka and its main subsystems work, how they interact and all their features.

Find out more about Core Kafka, Kafka Connect and Kafka Streams. And about the Confluent platform.

As with all our training courses, our Kafka Administration course will introduce you to the latest version and its new features (at the time of writing: Kafka 3.3.1 released on October 03, 2022).

Objectives

- Understanding Kafka's architecture
- Understanding how a multi-client context works
- Recovering data from a Kafka cluster
- Using and understanding tools and APIs
- **Securing** Kafka clusters
- Understand how Kafka and the Confluent platform work.

Target audience

- Data Scientists

- Developers
- Architects
- System administrators
- DevOps

Prerequisites

- Basic knowledge of a Unix system
- Knowledge of modern development languages: Java, Python and Scala
- Test My Knowledge

Technical requirements

- Machine running Linux or MacOS
- Have Java installed

Further information

Kafka Administration training program

INTRODUCTION

- What is Kafka?
- Overview of Kafka
- The various components
  - Brokers
  - Topics
  - Consumers
  - Producers
- Zookeeper overview
- Link with Zookeeper

REPLICATION AND RELIABILITY

- Introduction Replication
- EOS: Exactly Once Semantics
- AMOS: At Most Once Semantics
- ALOS: At Least Once Semantics
- Brokers
  - Controller Broker
  - Inside Kafka Broker
  - Inside Kafka Producer
  - Inside Kafka Consumer

ADMINISTRATION

- Topics
- Cluster
- Offset management
- Sizing
  - Brokers
  - Score

MONITORING

- Kafka Broker Metrics
- Client Monitoring
- Monitoring tools
- Traces and Grafana

RETENTION AND COMPACTION

- Retention
- Compaction

KAFKA SAFETY

- SSL for encryption and authentication
- SASL for authentication
- ACL management
- Safety management
  - Securing Zookeper
  - Securing Kafka Broker
- Safety alternatives

HARDWARE AND PARAMETERS

- Cluster sizing
- Configuration parameter
- Capacity planning

ARCHITECTURE

- Overview
  - Kafka Connect
  - Kafka Streams
  - AdminClient
- Reference architectures
- Kafka Distributions

Companies concerned

This training 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 security difficulties within the company (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, with 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.