AMBIENT-IT

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Flink training

2 days (14 hours)

Presentation

Flink is the fastest distributed computing engine on the market. This open-source framework, developed by the Apache Foundation, promises impressive performance compared with its historical competitor, Spark. Coupled with Kafka, it solves the problem of processing large volumes of Big Data in real time.

Flink essentially involves the analysis of stored data. The platform works within the framework of Big Data applications for distributed data processing.

Confluent's recent acquisition of Immerok, a recognized Flink specialist, is a milestone in the Flink ecosystem. This partnership considerably strengthens Flink's capabilities within the Confluent ecosystem. The aim of this acquisition is to develop a fully managed Flink offering called Confluent Cloud, compatible with Kafka, which will enable users to benefit from a complete event flow management solution.

In this training course, your team will learn how to use Apache Flink to handle real flows such as batch processing on datasets. They will also understand how each Apache Flink component works.

Learning Apache Flink will enable you to easily solve real-time business cases and the different concepts.

Our training will be based on the latest version of the software, Apache Flink 1.20.

Objectives

- Understanding the Apache Flink ecosystem
- Understanding Flink's architecture and data structure
- Understand the fundamental concepts of Flink and its various APIs (streaming, batch, SQL, Table API).

- Create Flink applications to process real-time data streams
- Managing Flink states for fault-tolerant applications
- Integrating Flink with Apache Kafka
- Deploy and manage Flink applications in a production environment

Target audience

- Data Analyst
- Developers
- Big Data Architects

Prerequisites

Knowledge of Java.

Apache Flink training program

INTRODUCTION APACHE FLINK

- What is Apache Flink?
- The Flink ecosystem
- History of the framework
- Fields of application
- Architectural overview
- Unlimited and delimited flows
- Different types of status

FUNDAMENTAL CONCEPTS

- Understanding data flow management
- What is a state function?
- Flink ML
- Flink Table Store
- What is the Kubernetes Flink operator?
- DataSink
- Connectors
  - HDFS
  - S3
  - Avro
  - MongoDB

USE CASES

- The different applications
  - Event-driven application
  - Data analysis application
  - Data pipeline application

PUTTING IT INTO PRACTICE

- Flink ML
  - Classification
  - Grouping
  - Evaluation
  - Functionality engineering
  - Regression
- API Table
  - Selection
  - Filter
  - Joint
  - OrderBy
- Flink Graph
  - What is a graph?
  - The different algorithms
  - [PRACTICE] Creating graphs

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 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.