Training: Cloudera

Cloudera Streaming Analytics: Using Apache Flink and SQL Stream Builder on CDP

CLOUDERA Training Partner

TRAINING GOALS:

During this two-day instructor-led training course, participants will learn development and operations for Cloudera Streaming Analytics, a framework for low-latency processing and analytics powered by Apache Flink and Cloudera's innovative SQL Stream Builder.

Through extensive hands-on exercises, students will gain experience deploying and managing a Flink cluster, developing and running Flink applications, and using SQL Stream Builder's continuous SQL to perform analytics on streaming data.

During this course, you learn how to:

- Deploy a Flink cluster using Cloudera Manager
- Develop Flink batch and streaming applications
- Run and view Flink jobs
- Transform data streams
- Use watermarks and windows to analyze streaming data
- Analyze data with Cloudera SQL Stream Builder
- Monitor Flink application metrics

CONSPECT:

- **Overview**
  - Introduction to Apache Flink and Stream Processing
  - Typical Use Cases
  - Related Products
- **Service Deployment**
  - Planning Requirements
  - Installation
  - Flink Dashboard
  - Exercise: Running a Flink Program
- **Flink Basics**
  - Execution Environment

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- Flink Application Structure
- Create a Flink Project
- Build a Flink Program
- Exercise: Building a Simple Flink Program

- **Architecture**
  - Logical
  - Physical
  - Parallelism
  - Fault Tolerance
  - Data Storage
- **DataStream API**
  - DataStream API Overview
  - Data Types and Serialization
  - Sources and Sinks
  - Transformations
  - Exercise: Batch Processing Using Flink
- **DataStream API (continued)**
  - Exercise: Creating a Flink Streaming Application
  - Using Kafka as a Source and Sink
  - Exercise: Creating a Streaming Application Using a Kafka Source
- **Flink SQL and Table API**
  - Streaming Concepts
  - Programming Options
  - Integrations
  - Exercise: Using Flink SQL and Kafka
- **Stateful Stream Processing**
  - Stateful Streaming Applications
  - Checkpoints
  - Event Time Processing
  - Watermarks
  - Windows
  - Exercise: Tumbling Windows with Event Time
- **Cloudera SQL Stream Builder**
  - Overview
  - Streaming SQL Console
  - Data Providers

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- SQL Stream Jobs
- Exercise: Using SQL Stream Builder

- **Monitoring**
  - Metrics
  - Logging
  - Backpressure
  - Resource Configuration
  - Exercise: Monitoring

REQUIREMENTS:

This course is designed for those who have experience with administration and application development on the Cloudera platform. Students must have at least basic familiarity with Java and Linux. Our *Cloudera Training for Apache Kafka* course, or equivalent experience with Apache Kafka, is a recommend prerequisite.

Difficulty level



TRAINER:

Certified Cloudera Instructor.

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