

Course Objectives

In this three-day hands-on course you will learn how to build an application that can publish data to and subscribe to data from an Apache Kafka® cluster. You will learn the role of Kafka in the modern data distribution pipeline, discuss core Kafka architectural concepts and components, and review the Kafka developer APIs. In addition to Kafka, Kafka Connect, and Kafka Streams, the course also covers other components in the broader Confluent Platform, such as the Schema Registry, the REST Proxy, and KSQL.

Hands-on Training

Throughout the course, hands-on exercises reinforce the topics being discussed. Exercises include:

- Using Kafka's command-line tools
- Writing Consumers and Producers
- Using the REST Proxy
- Storing Avro data in Kafka with the Schema Registry
- Ingesting data with Kafka Connect
- Data transformations with Kafka Streams and KSQL

Course Duration

This is a three-day training course.

Who Should Attend?

This course is designed for application architects, developers and data scientists who need to interact with Kafka clusters as a source of, or destination for, data.

Course Prerequisites

Attendees should be familiar with developing professional apps in Java (preferred), .NET C# or Python. No prior knowledge of Kafka is required.

Participants are required to provide a laptop computer with unobstructed internet access to fully participate in the class.

Confluent offers public training in class, online and on demand. Please visit <http://confluent.io/training> for more information.

For inquiries about onsite training, please email training-admin@confluent.io

Course Content

The Motivation for Apache Kafka

- Systems Complexity
- Real-Time Processing is Becoming Prevalent
- Kafka: A Stream Data Platform

Kafka Fundamentals

- An Overview of Kafka
- Kafka Producers
- Kafka Brokers
- Kafka Consumers
- Kafka's Use of ZooKeeper
- Kafka Efficiency

Kafka's Architecture

- Kafka's Log Files
- Replicas for Reliability
- Kafka's Write Path
- Kafka's Read Path
- Partitions and Consumer Groups for Scalability

Developing With Kafka

- Programmatically Accessing Kafka
- Writing a Producer in Java
- Using the REST API to Write a Producer
- Kafka's Read Path
- Writing a Consumer in Java
- Using the REST API to Write a Consumer

More Advanced Kafka Development

- Enabling Exactly Once Semantics (EOS)
- Specifying Offsets
- Consumer Rebalancing
- Manually Committing Offsets
- Partitioning Data
- Message Durability

Schema Management in Kafka

- An Introduction to Avro
- Avro Schemas
- Using the Schema Registry

Kafka Connect for Data Movement

- The Motivation for Kafka Connect
- Kafka Connect Basics
- Modes of Working: Standalone and Distributed
- Configuring Distributed Mode
- Tracking Offsets
- Connector Configuration
- Comparing Kafka Connect with Other Options

Basic Kafka Installation and Admin

- Administering Kafka
- Log Management
- Determining How Many Partitions to Specify
- Kafka Security

Kafka Stream Processing

- The Motivation for Kafka Streams
- Kafka Streams Fundamentals
- Investigating a Kafka Streams Application
- KSQL for Apache Kafka
- Writing KSQL Queries