



# Kafka : Confluent Developer

Duration 3 day(s) (CONFLUENT-DEV-03)

## Building Kafka Solutions

Official Training



## Description

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.

## Goals

- 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.

## Public

This course is designed for application developers, ETL (extract, transform, and load) developers, and data scientists who need to interact with Kafka clusters as a source of, or destination for, data.

## Prerequisites

- Attendees should be familiar with developing in Java (preferred) or Python.
- No prior knowledge of Kafka is required.

## Structure

50% Theory, 50% Practice

## Program

# 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
- 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 Administration

- 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