



# Kafka : Confluent Administration

Duration 3 day(s) (CONFLUENT-OP-02)

**Build, Manage and Monitor Kafka clusters**

Official Training



## Description

In this three-day hands-on course you will learn how to build, manage, and monitor clusters using industry best-practices developed by the world's foremost Apache Kafka® experts.

## Goals

You will learn how Kafka and the Confluent Platform work, how their main subsystems interact, and how to set up, manage, monitor, and tune your cluster.

### *Public*

This course is designed for developers and operational teams who need to deploy, administer, and configure a Kafka cluster.

### *Prerequisites*

- Attendees should have a strong knowledge of Linux/Unix, and understand basic TCP/IP networking concepts.
- Familiarity with the Java Virtual Machine (JVM) is helpful.
- Prior knowledge of Kafka is helpful, but is not required.

### *Structure*

50% Theory, 50% Practice

# 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
- Comparisons with Traditional Message Queues

## Providing Durability

- Basic Replication Concepts
- Durability Through Intra-Cluster

## Replication

- Writing Data to Kafka Reliably
- Broker Shutdown and Failures
- Exactly Once Semantics (EOS)
- Controllers in the Cluster
- The Kafka Log Files

## Managing a Kafka Cluster

- Installing and Running Kafka
- Monitoring Kafka
- Basic Cluster Management
- Log Retention and Compaction
- An Elastic Cluster

## Optimizing Kafka Performance

- Batching for Performance
- Producer Performance
- Broker Performance
- Broker Failures and Recovery Time
- Load Balancing Consumption
- Consumption Performance
- Performance Testing

## Kafka Security

- SSL for Encryption and Authentication
- SASL for Authentication
- Securing ZooKeeper and the REST Proxy
- Migration to a Secure Cluster

# Integrating Systems with Kafka

- Offset Management

## Designing for High

## Availability Connect

- Motivation for Kafka Connect
- Kafka Reference Architecture
- Types of Connectors
- Brokers
- Kafka Connect Implementation
- ZooKeeper
- Standalone and Distributed Modes
- Connect
- Configuring the Connectors
- Schema Registry
- REST Proxy
- Comparison with Other Systems
- Multiple Data Centers