

Confluent Cloud Administration

Duration: 5 Days (8 Hrs./Day)

Course Objective: The objective of this course is to provide a comprehensive understanding of Apache Kafka, Confluent Cloud, and the Confluent Platform, covering fundamental and advanced topics. Participants will explore Kafka's architecture, design principles, and key components like producers, consumers, brokers, and topics. Through hands-on labs, they will learn to set up Kafka clusters, manage security, monitor systems, and use tools like Kafka Connect and the Confluent CLI, preparing them for real-world applications and troubleshooting.

Pre-requisite: Confluent cloud license, Understanding of Java

Lab Requirement: CentOS 9 (Koenig DC)

Note: This does not cover all the topics to clear the CCAAK exam.

Module 1: Platform Overview

Open-Source Apache kafka

Confluent cloud

Confluent platform

Conduktor platform

Key differences

Lab: Signup for confluent cloud

Lab: Starting up a basic kafka cluster

Module 2: Kafka Basics

Kafka architecture, design principles, and purposes

Distributed Systems - Scalability, Fault Tolerance, High Availability

Primary functions of: Producer, Consumer, Broker

Topics, Partitions

Kafka Messages, structure, make-up, metadata

Replication, Leaders, Followers

Module 3: Kafka advanced

Startup sequence; component dependencies

Meaning of “immutable” log

Meaning of “committed”

Kafka Controller

Exactly Once Semantics

Consumer lag, Under/Over Consumption

Broker failure, detection, and recovery

Module 4: Confluent Cloud (cloud solution)

Interface overview

Setting up a cluster

Working with producer

Working with consumer

Working with kafka connect

Working with confluent cli

Lab: Navigating the interface

Lab: Setting up a cluster

Lab: scaling up or down the cluster

Lab: producing events (designing and troubleshooting included in detail)

Lab: consuming events (designing and troubleshooting included in detail)

Lab: working with cli

Lab: Working with kafka connect (sink and source connector example)

Module 5: Confluent Kafka Security (Confluent Cloud)

Authentication and Authorisation (meanings and methods)

In-flight encryption - where and how

At rest encryption – strategies

Access Control Lists (ACLs) - where and how used

RBACs

Lab: How to use ACLs

Lab: How to use RBACs

Lab: How to encrypt the data at rest using keys

Lab: How to encrypt the data in transit

Module 6: Confluent Monitoring (Confluent Cloud)

Setting up monitoring

Configuring monitoring

Enabling alert

Available options for monitoring

Lab: How to use of control center for monitoring

Module 7: Confluent Schema registry (Confluent Cloud)

What is schema registry



Lab: How to setup

Lab: Understanding the configuration