PYTHON TRAINING

Python Apache Kafka Course

Master Python and Apache Kafka for real-time data streaming. Learn to build robust, scalable data pipelines and distributed applications.

DURATION
2 hours

LEVEL
Intermediate

FORMAT
Instructor-Led

- Globally Recognized Certification
- Expert-Led Hands-On Training
- Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level Python Apache Kafka Course is meticulously designed to equip developers and data professionals with the essential skills to build robust, scalable, and high-performance real-time data streaming applications. Apache Kafka stands as the de-facto standard for handling large volumes of events and messages, and pairing it with Python, a versatile and widely-used language, unlocks immense capabilities for data ingestion, processing, and analysis. This course dives deep into Kafka's architecture, core concepts, and best practices, specifically through the lens of Python programming.

Throughout the 2-hour intensive program, you will learn to implement Kafka producers and consumers using Python, manage consumer groups, handle message serialization and deserialization, and design fault-tolerant streaming pipelines. You will gain hands-on experience in setting up a local Kafka environment and interacting with it programmatically. By mastering the synergy between Python and Kafka, you will be capable of contributing to sophisticated data engineering initiatives, building event-driven microservices, and enabling real-time analytics solutions that are critical for modern data-driven enterprises.

Duration	2 hours
Level	Intermediate
Vendor	Python

COURSE CURRICULUM

01 Module 1: Introduction to Apache Kafka and Python Integration

- Understanding Apache Kafka: Architecture and Core Concepts (Topics, Partitions, Brokers, Zookeeper)
- Why Python for Kafka: Use cases and popular client libraries (confluent-kafka-python)
- Setting up a local Kafka environment (Docker/Confluent Platform basics)
- Basic Python environment setup for Kafka development

02 Module 2: Building Python Kafka Producers

- Implementing a basic Kafka Producer in Python
- Sending messages with keys and values
- Asynchronous message delivery and callbacks
- Error handling and delivery reports
- Configuring producer settings (acks, batching, compression)

03 Module 3: Developing Python Kafka Consumers

- Implementing a basic Kafka Consumer in Python
- Understanding consumer groups and offset management
- Polling for messages and message processing logic
- Manual vs. automatic offset commits
- Configuring consumer settings (group.id, auto.offset.reset)

04 Module 4: Advanced Kafka Concepts with Python

- Partition assignment strategies and rebalancing
- Designing fault-tolerant consumer applications
- Message serialization and deserialization (JSON, Avro basics)
- Introduction to Schema Registry with Python (conceptual)

05 Module 5: Building a Simple End-to-End Streaming Application

- Designing a practical Python-Kafka data pipeline scenario
- Developing a Python producer to simulate real-time data
- Developing a Python consumer to process and store data (e.g., print to console, simple file write)
- Monitoring Kafka topics and consumer groups

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

> **Data Streaming Engineer**

> **Real-time Analytics Developer**

> **Distributed Systems Backend Developer**

FREQUENTLY ASKED QUESTIONS

Q: What are the recommended prerequisites for enrolling in this Python Apache Kafka Course?

This course is designed for individuals with an intermediate understanding of Python programming, including familiarity with data structures, functions, and basic object-oriented concepts. While no prior Kafka experience is required, a foundational understanding of distributed systems or database concepts would be beneficial but is not strictly necessary.

Q: What specific practical skills will I gain from this course that I can immediately apply in a professional setting?

Upon completing this course, you will be able to independently develop and deploy robust Python applications that act as Kafka producers and consumers. You will gain practical skills in handling message serialization, managing consumer offsets, configuring Kafka client properties for performance and reliability, and designing basic end-to-end real-time data pipelines, which are crucial for roles in data engineering and streaming analytics.

Q: Does this course cover advanced Kafka features like Kafka Streams API or Kafka Connect with Python?

This 2-hour intermediate course focuses on mastering the core concepts of Apache Kafka through Python client libraries, specifically for building producers and consumers. While it provides a strong foundation, it does not delve into the Kafka Streams API or Kafka Connect. These advanced topics, which typically involve more complex data transformation and integration patterns, are often covered in dedicated, longer-duration advanced Kafka courses.

ABOUT COMPUTER PRIDE

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East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors

have empowered thousands of professionals across East Africa.

15+	10,000+	50+
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READY TO ENROL?

Take the next step in your technology career.

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