Apache Kafka

Proficiency Level -Intermediate

Program Overview:

In this training, participants will learn to the below features and much more.

- Understand Apache Kafka Ecosystem, Architecture
- Core Concepts and Operations
- Master Concepts such as Topics,
- Partitions, Brokers, Producers, Consumers
- Start a personal Kafka development environment.
- Learn major.
- CLIs: Kafka-topics, Kafka-console-producer, Kafka-console-consumer, Kafka-consumer-groups, Kafka-configs
- Create your Producers and Consumers in Java to interact with Kafka.
- Program a Real-World Twitter Producer &Elasticsearch Consumer

Duration/Methodology:

Methodology	Total Learning Effort	# Of Days	Full/Half Day
VILT	20 hours	5 days	Half Day

Pre-requisites:

Members planning to take up this program need to:

- Some basic understanding of Java Programming
- Good to have knowledge about the Linux command line.
- Desire to learn something awesome and new, Basic knowledge of Kafka.

Program Outcome:

Participants will learn to:

- Understand Apache Kafka Ecosystem, Architecture,
- Core Concepts and Operations
- Master Concepts such as Topics,
- Partitions, Brokers, Producers, Consumers
- Start a personal Kafka development environment.

Learn major CLIs: Kafka-topics, Kafka-console-producer, Kafka-console-consumer, Kafka-consumer-groups, Kafka-configs.

- Create your Producers and Consumers in Java to interact with Kafka.
- Program a Real-World Twitter Producer & Elasticsearch Consumer

Target Audience:

This program is highly recommended for:

- Developers who want to learn the Apache Kafka Fundamentals, start a cluster, and write their first application.
- Architects who want to understand how Apache Kafka fits into their solution architecture.
- Anyone looking to learn the full theory of how Apache Kafka works as a distributed system.

Program Outline:

Program Name Kafka	Day of Program	Practice Lab Available
Module 1: Introduction to Message Broker		
• introduction to Message Broker • Importance of Message Broker services • Introduction to Kafka • Kafka Architecture • Kafka Cluster components • Installation of Kafka • Starting Kakfa using docker compose	1	Yes
Module - 1: Introduction & Topic in Kafka Single Node Cluster		
A quick recap on the Online module's coverage. **Refresher to self-paced Topics Hands-on Practice** • Creating, Deleting a new Topic in Kafka Single Node Cluster • Demo of Producer & Consumer on Topic using Kafka Command Line Producer & Consumer. Multi In (Producer) & Multi Out (Consumer) models revisited.	2	Yes
Module – 2 : Monitoring the Kafka Brokers		
Broker on the Same Host and Monitoring the Kafka Brokers. Multi In (Producer) & Multi Out (Consumer) model on a Multi-Broker Scenario, Resetting Offsets • Java Producer, Java Consumer, Producer & Consumer with Keys • Running custom Producer & Custom Consumer Jars on Kafka • Kafka Multi-Node Setup Overview	3	Yes

Program Name Kafka	Day of Program	Practice Lab Available
• Kafka Consumer Group using Kafka Console Consumer • Monitoring Kafka Topics using the CLI commands. • Broker Failure & Rebalancing the Leaders after Failure • Scalability configurations of Kafka using Partitions & Kafka Brokers in a Multi-Broker Scenario	4	Yes
Module - 3: Fault Tolerance of Kafka using Replication in a Multi-Broker Scenario		
• Streaming Job processing model of Spark Overview • Spark Streaming Model as a Consumer Group • Fault Tolerance Considerations for Spark and Checkpointing • Realtime Streaming Analytics in Spark on Kafka Streams with Checkpointing in Scala **Hands-on Best practices in Docker**	5	Yes