**Duration: 2 days ( 4 half days)**

**Hardware requirements:**

1. Windows machine with min 8 GB RAM
2. 5 AWS instances to create a cluster

Kafka course content:

* [Introduction](https://kafka.apache.org/documentation/#introduction)
* [Use Cases](https://kafka.apache.org/documentation/#uses)
* [Quick Start](https://kafka.apache.org/documentation/#quickstart)
* [Ecosystem](https://kafka.apache.org/documentation/#ecosystem)
* [Upgrading](https://kafka.apache.org/documentation/#upgrade)
* [APIS](https://kafka.apache.org/documentation/#api)
* [Producer API](https://kafka.apache.org/documentation/#producerapi)
* [Consumer API](https://kafka.apache.org/documentation/#consumerapi)
* [Streams API](https://kafka.apache.org/11/documentation/streams)
* [Connect API](https://kafka.apache.org/documentation/#connectapi)
* [AdminClient API](https://kafka.apache.org/documentation/#adminapi)
* [CONFIGURATION](https://kafka.apache.org/documentation/#configuration)
* [Broker Configs](https://kafka.apache.org/documentation/#brokerconfigs)
* [Topic Configs](https://kafka.apache.org/documentation/#topicconfigs)
* [Producer Configs](https://kafka.apache.org/documentation/#producerconfigs)
* [Consumer Configs](https://kafka.apache.org/documentation/#consumerconfigs)
* [New Consumer Configs](https://kafka.apache.org/documentation/#newconsumerconfigs)
* [DESIGN](https://kafka.apache.org/documentation/#design)
* [Motivation](https://kafka.apache.org/documentation/#majordesignelements)
* [Persistence](https://kafka.apache.org/documentation/#persistence)
* [Efficiency](https://kafka.apache.org/documentation/#maximizingefficiency)
* [The Producer](https://kafka.apache.org/documentation/#theproducer)
* [The Consumer](https://kafka.apache.org/documentation/#theconsumer)
* [Message Delivery Semantics](https://kafka.apache.org/documentation/#semantics)
* [Replication](https://kafka.apache.org/documentation/#replication)
* [Log Compaction](https://kafka.apache.org/documentation/#compaction)
* [Quotas](https://kafka.apache.org/documentation/#design_quotas)
* Kafka Callback and Acknowledgments
* Use of batches in Kafka producer
* Consumer groups
* [IMPLEMENTATION](https://kafka.apache.org/documentation/#implementation)
* [Network Layer](https://kafka.apache.org/documentation/#networklayer)
* [Messages](https://kafka.apache.org/documentation/#messages)
* [Message format](https://kafka.apache.org/documentation/#messageformat)
* [Log](https://kafka.apache.org/documentation/#log)
* [Distribution](https://kafka.apache.org/documentation/#distributionimpl)

Kafka Connect :

* Running Connect
* Connector Example:
* File Source and File Sink
* A Deeper Look at Connect
* Importing data from Kafka into Cassandra
* Kafka and Hadoop integration setup (Streaming data into HDFS through consumers with specific reference to Cloudera Distrtibution)
* HDFS Sink connectors, JDBC connector, Kafka Connect sys log

Monitoring and Supporting Kafka cluster

* [Kafka Metrics](http://www.cloudera.com/content/cloudera/en/documentation/core/latest/topics/cm_metrics_kafka.html)
* [Kafka Broker Metrics](http://www.cloudera.com/content/cloudera/en/documentation/core/latest/topics/cm_metrics_kafka_broker.html)
* [Kafka Broker Topic Metrics](http://www.cloudera.com/content/cloudera/en/documentation/core/latest/topics/cm_metrics_kafka_broker_topic.html)
* [Kafka MirrorMaker Metrics](http://www.cloudera.com/content/cloudera/en/documentation/core/latest/topics/cm_metrics_kafka_mirrormaker.html)
* [Kafka Replica Metrics](http://www.cloudera.com/content/cloudera/en/documentation/core/latest/topics/cm_metrics_kafka_replica.html)
* Performance tuning
* Real life issues and fixes
* Best practices

Confluent’s Kafka advance features

* Confluent Kafka cluster scale up and version upgrades- pre checks and post checks
* Confluent – schemaRegistry
* Confluent - Rest-Proxy
* Confluent - Control-center
* Kafka-stream [Ktable-Kstream]
* KSQL
* Running Confluent on Multi-Data center
* Kafka mirror-maker
* Auto data balancer
* [Replication Factor](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__section_d2t_ff2_lq)
* [Preferred Leader Election](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__d26070e73)
* [Unclean Leader Election](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__section_jgm_ff2_lq)
* [Acknowledgements](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__section_bm3_ff2_lq)
* [Minimum In-sync Replicas](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__section_tld_ff2_lq)
* [Kafka MirrorMaker](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_ha.html#xd_583c10bfdbd326ba-590cb1d1-149e9ca9886--6fec__section_y2k_pxm_vq)
* [Partitions and Memory Usage](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#concept_exp_hzk_br)
* [Garbage Collection](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#concept_f3v_hzk_br)
* [Handling Large Messages](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#concept_gqw_rcz_yq)
* [Tuning Kafka for Optimal Performance](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#kafka_performance_tuning)
* [Configuring JMX Ephemeral Ports](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#ephemeralJMXports)
* [Quotas](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#quotas)
* [Setting User Limits for Kafka](https://www.cloudera.com/documentation/kafka/latest/topics/kafka_performance.html#concept_flg_t1l_55)