# Building Streaming Data Analytics Solutions on AWS Training

Duration: **1 Day**

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## Overview

The **Building Streaming Data Analytics Solutions on AWS Training** course teaches participants how to design, implement, and operate modern streaming data analytics solutions on AWS to generate real-time business insights from high-volume data streams.

Using services such as **Amazon Kinesis**, **Amazon Managed Streaming for Apache Kafka (Amazon MSK)**, **AWS Lambda**, **AWS Glue**, and **Apache Flink**, learners will gain hands-on experience ingesting, processing, transforming, and analysing streaming data at scale. The course also covers essential topics including security, scalability, performance optimisation, monitoring, and cost management for real-time analytics workloads.

Through practical labs and real-world use cases, participants will learn how to build resilient, scalable, and high-performance streaming architectures while applying AWS best practices for modern data analytics. The course forms part of the **Building Modern Data Analytics Solutions on AWS** training collection.

Bu versiyon özellikle **AWS Streaming Analytics**, **Amazon Kinesis**, **Amazon MSK**, **Real-Time Data Analytics**, **Streaming Data Architecture**, **Apache Flink**, **AWS Data Engineering** ve **Modern Data Analytics on AWS** anahtar kelimelerini doğal biçimde içerirken tekrarları tamamen ortadan kaldırır.

## Prerequisites

Participants will benefit from:

- At least one year of experience managing data analytics or streaming data solutions
- Familiarity with streaming concepts
- Completion of **Architecting on AWS** or **Data Analytics Fundamentals**
- Completion of **Building Data Lakes on AWS**

## Who Should Attend

This course is designed for:

- **Data Engineers**
- **Data Architects**
- **Solutions Architects**
- **Big Data Engineers**
- **Cloud Engineers**
- **Analytics Engineers**
- Developers building real-time applications
- Technical teams managing streaming analytics platforms

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## What You Will Learn

By the end of this course, participants will be able to:

- Understand the role of streaming services in modern data architectures.
- Design and implement real-time analytics solutions on AWS.
- Build data ingestion, transformation, and storage pipelines.
- Deploy and manage **Amazon Kinesis** and **Amazon MSK** environments.
- Optimise streaming workloads using sharding, partitioning, and compression techniques.
- Secure streaming data both in transit and at rest.
- Monitor and troubleshoot streaming analytics platforms.
- Apply AWS cost optimisation best practices.
- Design scalable streaming data architectures for business use cases.

## Outline

### Module A: Overview of Data Analytics and the Data Pipeline

#### Data Analytics Fundamentals

- Modern Analytics Use Cases
- Data-Driven Decision Making
- Analytics Platform Architectures

#### Data Pipeline Concepts

- Data Ingestion
- Data Movement
- Data Processing
- Data Analytics Workflows

### Module 1: Using Streaming Services in the Data Analytics Pipeline

- Importance of Streaming Analytics
- Real-Time Data Processing
- Streaming Architecture Components
- Data Flow Design

### Module 2: Introduction to AWS Streaming Services

#### Amazon Kinesis

- **Amazon Kinesis Data Streams**
- Real-Time Data Streaming
- Scalable Data Ingestion
- Stream Processing

#### Hands-On Lab

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- Building Streaming Delivery Pipelines
- Exploring Amazon Kinesis Data Streams

**Amazon Kinesis Data Analytics**

- Real-Time Analytics
- Apache Flink Integration
- Streaming Transformations

**Amazon Managed Streaming for Apache Kafka (Amazon MSK)**

- **Amazon MSK**
- Managed Apache Kafka Service
- Kafka Architecture and Use Cases

**Apache Spark Streaming**

- Streaming Data Processing
- Big Data Analytics Workloads

## Module 3: Real-Time Analytics with Amazon Kinesis

**Kinesis Data Streams**

- Clickstream Analytics
- Producer and Consumer Architectures
- Data Ingestion and Delivery

**Apache Flink Integration**

- Flink Application Development
- Kinesis Data Analytics
- Real-Time Data Processing

**Hands-On Lab**

- Streaming Analytics with Apache Flink
- Real-Time Processing Scenarios

## Module 4: Securing, Monitoring, and Optimising Amazon Kinesis

- Performance Optimisation
- Sharding Strategies
- Compression Techniques
- Security Best Practices
- Monitoring and Observability

## Module 5: Using Amazon MSK in Streaming Analytics Solutions

**Amazon MSK Use Cases**

- Apache Kafka Architectures

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- Enterprise Data Streaming
- Large-Scale Analytics Platforms

**Amazon MSK Cluster Management**

- Cluster Provisioning
- Data Ingestion
- Stream Processing and Transformation

**Hands-On Lab**

- Amazon MSK Access Control
- Streaming Pipeline Development

## Module 6: Securing, Monitoring, and Optimising Amazon MSK

- Performance Tuning
- Storage Scaling
- Security Controls
- Monitoring and Logging

## Module 7: Designing Streaming Data Analytics Solutions

- Business Use Cases
- Streaming Workflow Design
- Scalable Data Architectures
- AWS Best Practices

## Module B: Developing Modern Data Architectures on AWS

- Modern Data Platforms
- Data Lake and Streaming Integration
- Data Modernisation Strategies
- AWS Analytics Ecosystem