# Building Streaming Data Analytics Solutions on AWS

**Course Duration: 8 Hours** **Course Code: AWS- BSDA**

## 1. Course Overview

The *Building Streaming Data Analytics Solutions on AWS* course is designed to help professionals learn how to build, secure, and manage real-time streaming data pipelines and analytics solutions using AWS services. You will explore how to collect, process, store, and analyze streaming data, enabling faster decision-making for modern, data-driven organizations. This course emphasizes hands-on experience with services such as Amazon Kinesis, AWS Lambda, Amazon MSK, Amazon S3, Amazon Redshift, and Amazon OpenSearch Service.

## 2. What You'll Learn?

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

- Understand the fundamentals of streaming data and its use cases.
- Design and deploy streaming data analytics pipelines on AWS.
- Use Amazon Kinesis Data Streams, Kinesis Data Firehose, and Kinesis Data Analytics effectively.
- Integrate AWS Lambda for serverless stream processing.
- Build real-time dashboards and insights with Amazon OpenSearch and Amazon QuickSight.
- Apply security, monitoring, and scaling best practices for streaming data solutions.
- Optimize streaming architectures for performance and cost efficiency.

## 3. Target Audience

This course is intended for:

- Data Engineers and Data Architects
- Developers working with real-time applications
- Cloud Engineers and Solution Architects
- Business Intelligence (BI) professionals
- Anyone interested in building and managing real-time analytics solutions on AWS

## 4. Pre-Requisites

Before attending this course, participants should have:

- Basic knowledge of AWS core services (EC2, S3, IAM, etc.)
- Familiarity with database and analytics concepts
- Understanding of cloud computing fundamentals
- Experience with data processing or application development is beneficial

## 5. Course Content

**Module 1: Introduction to Streaming Data Analytics**

- Basics of streaming data and use cases
- Batch vs. streaming data processing
- Streaming data solutions on AWS

**Module 2: Collecting Streaming Data**

- Amazon Kinesis Data Streams overview
- Amazon Kinesis Data Firehose
- Integrating data producers with streaming services

**Module 3: Processing and Transforming Streaming Data**

- AWS Lambda for stream processing
- Amazon Kinesis Data Analytics
- Stream processing with Apache Flink on AWS

**Module 4: Storage and Integration**

- Persisting data in Amazon S3 and Amazon Redshift
- Using Amazon MSK (Managed Streaming for Apache Kafka)
- Data integration with downstream services

**Module 5: Real-Time Analytics and Visualization**

- Building dashboards with Amazon OpenSearch Service
- Real-time BI with Amazon QuickSight
- Monitoring and alerting

**Module 6: Security and Best Practices**

- Identity and access management for streaming solutions
- Encryption and compliance considerations
- Monitoring with Amazon CloudWatch

**Module 7: Designing Scalable Streaming Architectures**

- Best practices for high availability and fault tolerance
- Cost optimization strategies
- Case studies and real-world architectures