# Building Data Lakes on AWS Training

Duration: **1 Day**

BILGINÇ IT Academy
info@bilginc.com
bilginc.com

## Overview

The **{*training}** course teaches participants how to design, build, secure, and manage modern**data lake architectures** using **Amazon Web Services (AWS)**. Through a combination of theory and hands-on exercises, learners will explore how to ingest, catalog, transform, analyse, and visualise both structured and unstructured data within a scalable cloud-based environment.

Participants will gain practical experience with key AWS analytics services, including **AWS Lake Formation**, **AWS Glue**, **Amazon Athena**, and **Amazon QuickSight**, while learning industry best practices for data governance, security, and operational efficiency.

Designed for data professionals and solution architects, this course provides the knowledge and skills required to implement secure, scalable, and analytics-ready data lake solutions on AWS. The course is part of the **Building Modern Data Analytics Solutions on AWS** training collection.

## Prerequisites

Participants should have:

- Completed **AWS Technical Essentials**
- One year of experience building data analytics pipelines
- Knowledge equivalent to **Data Analytics Fundamentals**

## Who Should Attend

This course is intended for:

- **Data Platform Engineers**
- **Data Engineers**
- **Solutions Architects**
- **Cloud Architects**
- **IT Professionals**
- Technical teams building analytics and data lake platforms

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## What You Will Learn

By the end of this {*training}, you will have gained knowledge and skills in the following areas:

- Apply **data lake methodologies** to data lake planning and design.
- Describe the AWS services required to build a data lake.
- Secure a data lake with appropriate permissions.
- Ingest, store, and transform data within a data lake.
- Build a data catalog using **AWS Glue**.
- Query and analyse data using **Amazon Athena**.
- Visualise data using **Amazon QuickSight**.
- Apply security and access control best practices in data lake architectures.

## Outline

### Module 1: Introduction to Data Lakes

- Value of **Data Lakes**
- Data Lakes vs Data Warehouses
- Data Lake Components
- Common Data Lake Architectures

### Module 2: Data Ingestion, Cataloging, and Preparation

- Relationship Between Data Lake Storage and Data Ingestion
- **AWS Glue Crawlers**
- **AWS Glue Data Catalog**
- Data Formatting
- Partitioning and Compression
- Efficient Storage and Query Design

#### Lab 1: Set Up a Simple Data Lake

- Basic Data Lake Configuration
- Data Ingestion and Cataloging

### Module 3: Data Processing and Analytics

- Data Processing in a Data Lake
- Data Transformation with **AWS Glue**
- Querying Data with **Amazon Athena**
- Analytics Use Cases

### Module 4: Building a Data Lake with AWS Lake Formation

- **AWS Lake Formation** Features
- Creating Data Lakes with Lake Formation
- Lake Formation Security Model
- Permissions and Access Management

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**Lab 2: Build a Data Lake Using AWS Lake Formation**

- Lake Formation Configuration
- Security and Access Controls

## Module 5: Additional Lake Formation Configurations

- Blueprints and Workflows
- Lake Formation Automation
- Security and Access Controls
- **AWS Lake Formation FindMatches**
- Data Visualisation with **Amazon QuickSight**

**Lab 3: Automate Data Lake Creation Using AWS Lake Formation Blueprints**

- Blueprint-Based Automation
- Workflow Configuration

**Lab 4: Data Visualisation Using Amazon QuickSight**

- Dashboard Creation
- Analytics Reporting

## Module 6: Architecture and Course Review

- Knowledge Check
- Architecture Review
- Course Summary
- AWS Data Lake Best Practices