

Build Modern Applications with AWS NoSQL Databases

Course Duration: 8 Hours

Course Code: AWS-NSQL-101

1. Course Overview

This course provides a comprehensive understanding of AWS NoSQL database services and their application in modern cloud-based solutions. You will learn how to design, implement, and manage scalable and high-performance NoSQL databases using AWS services such as DynamoDB, DocumentDB, and Keyspaces. The course combines theoretical knowledge with practical hands-on exercises to help you build modern applications that leverage NoSQL technologies effectively.

2. What You'll Learn?

- Understand the fundamentals of NoSQL databases and their types.
- Design scalable and high-performance NoSQL solutions using AWS services.
- Implement AWS DynamoDB, DocumentDB, and Keyspaces in real-world scenarios.
- Perform data modeling, indexing, and query optimization in NoSQL databases.
- Integrate NoSQL databases with modern applications for web, mobile, and serverless architectures.
- Monitor, manage, and secure AWS NoSQL databases.

3. Target Audience

- Cloud Developers and Architects who want to leverage AWS NoSQL databases.

- Database Administrators (DBAs) seeking to expand skills in cloud-native NoSQL solutions.
- IT Professionals aiming to design and implement scalable applications on AWS.
- Students and professionals preparing for AWS certification or seeking practical AWS NoSQL knowledge.

4. Pre-Requisites

- Basic understanding of database concepts (SQL/NoSQL).
- Familiarity with AWS core services (EC2, S3, IAM).
- Knowledge of programming fundamentals (Python, Java, or Node.js preferred).

5. Course Content

Module 1: Introduction to NoSQL Databases

- Overview of NoSQL concepts
- Types of NoSQL databases (Key-Value, Document, Column, Graph)
- Use cases and comparison with relational databases

Module 2: AWS DynamoDB Fundamentals

- Introduction to DynamoDB
- Data modeling and design patterns
- CRUD operations, queries, and indexes

Module 3: Advanced DynamoDB Features

- Streams, triggers, and Lambda integration
- Global tables and replication
- Performance optimization and monitoring

Module 4: AWS DocumentDB

- Introduction to DocumentDB
- Data migration and management
- Querying and indexing

Module 5: AWS Keyspaces (for Apache Cassandra)

- Overview of AWS Keyspaces
- Table design and data modeling
- Best practices and performance tuning

Module 6: Application Integration and Security

- Integrating NoSQL databases with modern applications
- Securing NoSQL databases using IAM and encryption
- Backup, restore, and disaster recovery

Module 7: Hands-on Labs and Projects

- Building a sample web application with DynamoDB
- DocumentDB integration with a serverless application
- Real-world scenarios using AWS Keyspaces