Course Duration: 8 hours (1 Day)

Amazon DynamoDB for Developers

Amazon DynamoDB reflects a paradigm shift away from relational databases in terms of management, usage, and schema design. To fully take advantage of DynamoDB and its feature set, developers and architects need to understand how applications programmatically interact with DynamoDB tables and their data. This digital curriculum teaches you how applications interact with Amazon DynamoDB, a fully managed NoSQL database service, through its API and related AWS services. You will learn how to create and interact with DynamoDB tables and indexes and how to optimize databases for monitoring, performance, and security.

Course objectives

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

- Create DynamoDB tables and modify their contents using the AWS CLI and AWS SDK
- Explain the use cases for secondary indexes in DynamoDB
- Understand DynamoDB read consistency models and their impact on costs and performance
- Manage the read/write capacity modes for tables programmatically
- Deploy appropriate scaling policies.

Prerequisites

- Familiarity with DynamoDB and its features
- Working experience with database design or data modeling practices for key-value databases
- Completed at least one of the digital trainings: Amazon DynamoDB Service Introduction or Amazon DynamoDB Service Primer
- Working experience with architecting and developing on AWS and planning and designing databases on AWS.
- Working knowledge of one or more of the high-level programming languages (Python, Java, Node.js, or .NET)

Target Audience

- Developers interested in learning how to work with nonrelational databases in the cloud, and specifically Amazon DynamoDB

- Database architects
- Data engineers

Course outline

Module 1: Exploring the DynamoDB API and the AWS SDK

- Understanding DynamoDB basics
- Using the AWS CLI with the DynamoDB API
- Interacting with DynamoDB using the AWS SDKs

Hands-on Lab: Amazon DynamoDB CRUD (Create, Read, Update, Delete) Activities

Module 2: Working with Indexes in DynamoDB

- Using secondary indexes
- Interacting with DynamoDB tables using secondary indexes
- Optimizing indexes for efficiency

Hands-on Lab: Amazon DynamoDB Scans, Queries, and Indexes

Module 3: Managing Consistency, Capacity, and Performance in DynamoDB

- Managing consistency in DynamoDB
- Managing capacity in DynamoDB
- Managing performance in DynamoDB

Hands-on Lab: Amazon DynamoDB Capacity Sizing

Module 4: Managing DynamoDB Applications at Scale

- Implementing Security
- Building Event-Driven Workflows
- Ensuring High Availability

Module 5: Advanced Monitoring and Optimizing with DynamoDB

- Monitoring
- Handling Errors
- Optimizing

Hands-on Lab: Amazon DynamoDB Monitoring