

# AWS DynamoDB Accelerator (DAX)

**Topics: AWS** 

Written on December 09, 2023

Amazon DynamoDB Accelerator (DAX) is a fully managed, highly available, and in-memory caching service for Amazon DynamoDB. DAX is designed to improve the performance of read-intensive DynamoDB workloads by providing a fast and scalable caching layer.

Here are key aspects of DynamoDB Accelerator (DAX):

## 1. In-Memory Caching:

- DAX caches frequently accessed DynamoDB data in-memory, reducing the need for repeated reads from the DynamoDB table.
- $\circ\,$  The caching is transparent to the application, and DAX automatically manages cache updates.

#### 2. Managed Service:

- DAX is a fully managed service, meaning AWS takes care of tasks such as provisioning, setup, configuration, monitoring, and maintenance.
- This simplifies the process of adding caching to DynamoDB without the need to manage the underlying infrastructure.

## 3. Compatibility with DynamoDB API:

 DAX is compatible with the DynamoDB API, which means applications can continue to use the same API calls to interact with DynamoDB while benefiting from the caching provided by DAX.

#### 4. Scalability:

- DAX is designed to scale horizontally to handle increasing read workloads. You can add or remove DAX nodes to scale the capacity based on demand.
- It supports automatic partitioning of data across multiple nodes to achieve high throughput.

#### 5. High Availability:

- DAX is designed for high availability with automatic multi-Availability Zone (multi-AZ) replication.
- In case of a node failure, DAX automatically redirects requests to healthy nodes.

#### 6. **Security:**

- DAX integrates with AWS Identity and Access Management (IAM) for access control.
- Encryption at rest and in transit is supported to enhance data security.

## 7. CloudWatch Integration:

- DAX integrates with Amazon CloudWatch for monitoring and collecting metrics.
- You can use CloudWatch metrics to gain insights into the performance and health of your DAX clusters.

#### 8. Use Cases:

- DAX is well-suited for read-intensive DynamoDB workloads where low-latency access to frequently accessed data is critical.
- Common use cases include web and mobile applications, gaming leaderboards, and applications with large-scale analytical queries.

DynamoDB Accelerator (DAX) acts as a caching layer in front of DynamoDB, providing improved read performance and reducing the need for redundant reads from the DynamoDB table. It is particularly beneficial for applications that require low-latency access to frequently accessed data in DynamoDB. Always refer to the latest AWS documentation for the most up-to-date information on features and capabilities.

© Copyright **Aryatechno**. All Rights Reserved. Written tutorials and materials by <u>Aryatechno</u>