DAY – 13
AWS DYNAMODB

AWS Architecture and Design

[With Hands on Demo]

AWS DynamoDB

AWS DynamoDB

→ What is NoSQL DB?

→   Introduction to DynamoDB

→ Key DynamoDB Terminology

→ Demo

AWS DynamoDB

NoSQL DB	Key-Value Store	Highly Scalable	Fully Managed
Access through Console, API	No Separate DB Client	High Performance	Automated HW/SW provisioning
Security	Patching	Easy to Use	

AWS DynamoDB

Fully Managed Scalable DB

Predicatble & Controlled Performance

Built In Fault-tolerance

Flexible

Integrated with EMR, CloudWatch

Strong Consistency, Atomic Counters

AWS DynamoDB

- Data Model has Table, Items & Attributes

- You are not required to create DB instead just create table. DynamoDB is a database is a collection of tables. A table is a collection of items and each item is a collection of attribute.
  - » Table is a collection of data
  - » An item is a group of attributes that is uniquely identifiable among all of the other items
  - » An attribute is a fundamental data element, something that does not need to be broken down any further.

Each Item is identified by a Primary Key.

- » **Partition Key** – A simple primary key, composed of one attribute known as the partition key.

- » **Partition Key and Sort Key** – Referred to as a composite primary key, this type of key is composed of two attributes. The first attribute is the partition key, and the second attribute is the sort key.

→ Beside the Key Attributes, everything else is unstructured

AWS DynamoDB High Availability & DR

- Automatic Hardware Provisioning

- Cross Zone Replication

- Fault-tolerant & Manage HW Failure

- Increase Performance with provisioned Throughput

Consistency Models

Eventual Consistency = High Throughput but Dirty Reads

Strong Consistency Read = ½ Eventual Consistency Throughput but Committed Read

Pricing

→ Pay by the hour for throughput capacity. You pay a flat, hourly rate based on the capacity you reserve

→ $0.01 per hour for every 10 units of write capacity

→ $0.01 per hour for every 50 units of read capacity

→ $1 per GB per month of storage

Free Tier:

→ DynamoDB customers get 100 MB of free storage, as well as up to 5 writes/second and 10 reads/second of ongoing throughput capacity i.e., 5 units of write capacity, 10 units of read capacity, 100 MB.

E.g., :

→ 10 writes per second
→ 100 reads per second
→ 10 GB of data
→ 1 KB items
→ Will Cost around $32 / month

Why DynamoDB?

- Scalable DB

- Higher Throughput with lower latency

- Reduce TCO

- Will not work with complex Transactions & Richer Query need

- Does not support ACID

Demo

Lets see Demo of AWS DynamoDB:
1.   Create a Table
2.   Insert Records
3.   Check Unstructured Data

Summary

In this video we learned NoSQL fully managed & scalable DB DynamoDB

In next session we will have overview about Glacier

Thank You

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