**What is DynamoDB?**

* **Non-relational database for any scale**
* **No hardware provisioning**
* **No Setup and configuration**
* **No Throughput capacity planning**
* **No Replication**
* **No Software patching**
* **No Cluster scaling**
* **DynamoDB synchronously replicates data across three facilities in an AWS Region, giving you high availability and data durability.**
* **Offloads management and provisioning of hardware – two major blocks of scaling databases**
* **Consistency model – users can specify – strong consistency or eventual consistency**
* **Default – eventual consistent reads – maximizes read throughputs**
* **Strong consistent reads – returns a result that reflects all writes that received a successful response before a read**
* **ACID transactions – Atomicity consistency isolation and durability across one or more tables within a single AWS account and region- build applns with transactions as part of single business operation**

## Getting started

## GET/PUT operations – user defined primary key

## Primary key is the only required attribute

## Flexible querying – query non-primary key attributes using global secondary indexes and local secondary indexes

## Primary key = single attribute partition key or composite partition-sort key

## Single attribute partition key = example userID

## Dynamo db indexes Composite partition-sort key – partition key element and sort key element

## This multipart key maintains a hierarchy between the first and second element values. For example, a composite partition-sort key could be a combination of UserID (partition) and Timestamp (sort).

## Holding the partition key element constant, you can search across the sort key element to retrieve items.

## After you have created a table using the [DynamoDB console](https://console.aws.amazon.com/dynamodb/home) or [CreateTable API](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_CreateTable.html" \t "_blank), you can use the [PutItem](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_PutItem.html" \t "_blank) or [BatchWriteItem](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchWriteItem.html" \t "_blank) APIs to insert items. Then, you can use the [GetItem](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_GetItem.html" \t "_blank), [BatchGetItem](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchGetItem.html" \t "_blank), or, if composite primary keys are enabled and in use in your table, the [Query API](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_Query.html) to retrieve the items you added to the table.

## DynamoDB is a fully managed cloud service that you access via API

## Planning

## Each DynamoDB table has provisioned read-throughput and write-throughput associated with it. You are billed by the hour for that throughput capacity if you exceed the free tier.

## Note that you are charged by the hour for the throughput capacity, whether or not you are sending requests to your table.

## If you would like to change your table’s provisioned throughput capacity, you can do so using the [AWS Management Console](https://console.aws.amazon.com/console/home), the [UpdateTable API](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_UpdateTable.html" \t "_blank), or the [PutScalingPolicy API](https://docs.aws.amazon.com/autoscaling/ec2/APIReference/API_PutScalingPolicy.html" \t "_blank) for auto scaling.

## DynamoDB charges for data storage as well as the standard internet data transfer fees.

## Maximum throughput per DynamoDB table is practically unlimited.

## The smallest provisioned throughput you can request is 1 write capacity unit and 1 read capacity unit for both auto scaling and manual throughput provisioning. – free tier (25 units of write capacity and 25 units of read capacity).

## The free tier applies at the account level, not the table level.

## How it works

[**https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.html**](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.html)

[**https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html**](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html)

[**https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/AutoScaling.html**](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/AutoScaling.html)

[**https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/authentication-and-access-control.html**](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/authentication-and-access-control.html)