Amazon DynamoDB - FAQs

aws.amazon.com (https://aws.amazon.com/dynamodb/faqs/)

What is DynamoDB?

Q: What is Amazon DynamoDB?

DynamoDB is a fast and flexible nonrelational database service for any scale. DynamoDB enables customers to offload the administrative burdens of operating and scaling distributed databases to AWS so that they don't have to worry about hardware provisioning, setup and configuration, throughput capacity planning, replication, software patching, or cluster scaling.

Q: What does DynamoDB manage on my behalf?

DynamoDB takes away one of the main stumbling blocks of scaling databases: the management of database software and the provisioning of the hardware needed to run it. You can deploy a nonrelational database in a matter of minutes. DynamoDB automatically scales throughput capacity to meet workload demands, and partitions and repartitions your data as your table size grows. Also, DynamoDB synchronously replicates data across three facilities in an AWS Region, giving you high availability and data durability.

Q: What is the consistency model of DynamoDB?

When reading data from DynamoDB, users can specify whether they want the read to be eventually consistent or strongly consistent:

- Eventually consistent reads (the default) – The eventual consistency option maximizes your read throughput. However, an eventually consistent read might not reflect the results of a recently completed write. All copies of data usually reach consistency within a second. Repeating a read after a short time should return the updated data.
- Strongly consistent reads — In addition to eventual consistency, DynamoDB also gives you the flexibility and control to request a strongly consistent read if your application, or an element of your application, requires it. A strongly consistent read returns a result that reflects all writes that received a successful response before the read.

Getting started

Q: What kind of query functionality does DynamoDB support?

DynamoDB supports GET/PUT operations by using a user-defined primary key. The primary key is the only required attribute for items in a table. You specify the primary key when you create a table, and it uniquely identifies each item. DynamoDB also provides flexible querying by letting you query on nonprimary key attributes using global secondary indexes (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GSI.html) and local secondary indexes (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/LSI.html).

A primary key can be either a single-attribute partition key or a composite partition-sort key (https://aws.amazon.com /blogs/database/choosing-the-right-dynamodb-partition-key/). A single-attribute partition key could be, for example, UserID. Such a single attribute partition key would allow you to quickly read and write data for an item associated with a given user ID.

DynamoDB indexes a composite partition-sort key as a partition key element and a 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. Such searching would allow you to use the Query API (https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_Query.html) to, for example, retrieve all items for a single UserID across a range of time stamps.

Q: How do I update and query data items with DynamoDB?

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), you can use the PutItem (https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_PutItem.html) or BatchWriteItem (https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchWriteItem.html) APIs to insert items. Then, you can use the GetItem (https://docs.aws.amazon.com/amazondynamodb/latest /APIReference/API_GetItem.html), BatchGetItem (https://docs.aws.amazon.com/amazondynamodb/latest /APIReference/API_BatchGetItem.html), 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.

Q: Can DynamoDB be used by applications running on any operating system?

Yes. DynamoDB is a fully managed cloud service that you access via API. Applications running on any operating system (such as Linux, Windows, iOS, Android, Solaris, AIX, and HP-UX) can use DynamoDB. We recommend using the AWS SDKs (http://aws.amazon.com/dynamodb/developer-resources/) to get started with DynamoDB.

Planning

Q: How am I charged for my use of DynamoDB?

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), or the PutScalingPolicy API (https://docs.aws.amazon.com/autoscaling/ec2/APIReference/API_PutScalingPolicy.html) for auto scaling. Also, DynamoDB charges for data storage as well as the standard internet data transfer fees.

To learn more about DynamoDB pricing, see the DynamoDB pricing page (https://aws.amazon.com/dynamodb /pricing).

Q: What is the maximum throughput I can provision for a single DynamoDB table?

DynamoDB is designed to scale without limits. However, if you want to exceed throughput rates of 10,000 write capacity units or 10,000 read capacity units for an individual table, you must first contact Amazon (http://portal.aws.amazon.com/gp/aws/html-forms-controller/DynamoDB_Limit_Increase_Form). If you want to provision more than 20,000 write capacity units or 20,000 read capacity units from a single subscriber account, you must first contact us (http://portal.aws.amazon.com/gp/aws/html-forms-controller/DynamoDB_Limit_Increase_Form) to request a limit increase.

Q: What is the minimum throughput I can provision for a single DynamoDB table?

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. Such provisioning falls within the free tier which allows for 25 units of write capacity and 25 units of read capacity. The free tier applies at the account level, not the table level. In other words, if you add up the provisioned capacity of all your tables, and if the total capacity is no more than 25 units of write capacity and 25 units of read capacity, your provisioned capacity would fall into the free tier.

How it works

Q: Data models and APIs

For more information about data models and APIs, see Amazon DynamoDB: How It Works (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.html).

Q: Scalability, availability, and durability

For information about scalability, availability, and durability, see Amazon DynamoDB Product Details (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html).

Q: Auto scaling

For information about DynamoDB auto scaling, see Managing Throughput Capacity Automatically with DynamoDB Auto Scaling (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/AutoScaling.html).

Q: Security and control

For information about DynamoDB security and control, see Authentication and Access Control for Amazon DynamoDB (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/authentication-and-access-control.html).

Visit the pricing page

See Amazon DynamoDB pricing.

Learn more

Sign up for a free account

Instantly get access to the AWS Free Tier.

Sign up (https://portal.aws.amazon.com/gp/aws/developer/registration/index.html)

Start building on the console

Get started building with Amazon DynamoDB on the AWS Management Console.

Sign in (https://console.aws.amazon.com/dynamodb)
Register for re:Invent Bootcamps
Learn from AWS experts at exam prep bootcamps - space is limited!

(https://reinvent.awsevents.com/learn/bootcamps/?sc_icampaign=aware_reinvent_bootcamps2019_aws&
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