

DYNAMO DATABASE

Amazon **DynamoDB** is a **fully managed NoSQL database service** designed for **high availability, scalability, and performance**. It is a **key-value and document database** that delivers **single-digit millisecond latency** at any scale.

Key Features of DynamoDB

1. NoSQL, Key-Value & Document Store

- Stores **structured** and **semi-structured** data in **key-value** or **document** format.
- Supports **flexible schema** (unlike relational databases).

2. Fully Managed & Scalable

- **On-demand scaling**: Automatically handles large workloads.
- **Supports millions of requests per second**.
- **Auto-sharding** distributes data across multiple partitions.

3. High Availability & Durability

- **Multi-AZ replication** (across 3 AWS availability zones).
- **Automatic backups & point-in-time recovery**.

4. Fast Performance

- **Single-digit millisecond latency**.
- Supports **DAX (DynamoDB Accelerator)** for caching to improve read performance.

5. Security & Access Control

- **IAM-based authentication** (fine-grained access control).
- **Encryption at rest and in transit**.



6. Querying & Indexing

- **Primary Key** (Partition Key + Optional Sort Key).
- **Secondary Indexes:**
 - **Global Secondary Index (GSI):** Allows querying on non-primary attributes.
 - **Local Secondary Index (LSI):** Enables sorting within partitions.

Use Cases of DynamoDB

- **Real-time applications:** Leaderboards, chat applications.
- **IoT & Sensor Data:** Stores rapidly incoming device data.
- **E-commerce:** Shopping carts, product catalogs.
- **Gaming:** Storing game state & session history.
- **Financial & Transactional Applications.**

How to Create a DynamoDB Table



1. Using AWS Console

1. Go to **AWS Management Console** → **DynamoDB**.
2. Click **Create Table**.
3. **Enter Table Name** (*Users*).
4. **Define Primary Key:**
 - Partition Key: *Usernames* (String)
 - (Optional) Sort Key: *Timestamp* (Number)
5. Select **Provisioned** or **On-Demand Capacity**.
6. Click **Create Table**.

Create table | Amazon DynamoDB

Create DynamoDB Table

ap-south-1.console.aws.amazon.com/dynamodbv2/home?region=ap-south-1#create-table

Search [Alt+S]

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DynamoDB > Tables > Create table

Create table

Table details [Info](#)

DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table.

Table name
This will be used to identify your table.

Test-table

Between 3 and 255 characters, containing only letters, numbers, underscores (_), hyphens (-), and periods (.).

Partition key
The partition key is part of the table's primary key. It is a hash value that is used to retrieve items from your table and allocate data across hosts for scalability and availability.

UsersString

1 to 255 characters and case sensitive.

Sort key - optional
You can use a sort key as the second part of a table's primary key. The sort key allows you to sort or search among all items sharing the same partition key.

Enter the sort key nameString

1 to 255 characters and case sensitive.

CloudShell Feedback

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TABLE created successfully

List tables | Amazon DynamoDB

Create DynamoDB Table

ap-south-1.console.aws.amazon.com/dynamodbv2/home?region=ap-south-1#tables

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DynamoDB > Tables

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations [New](#)

Reserved capacity

Settings

DAX

Clusters

Subnet groups

Parameter groups

Events

The Test-table table was created successfully.

Tables (1) [Info](#)

Find tables Any tag key Any tag value < 1 > [Settings](#)

<input type="checkbox"/>	Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite
<input type="checkbox"/>	Test-table	Active	Users (S)	-	0	0	Off	Star

CloudShell Feedback

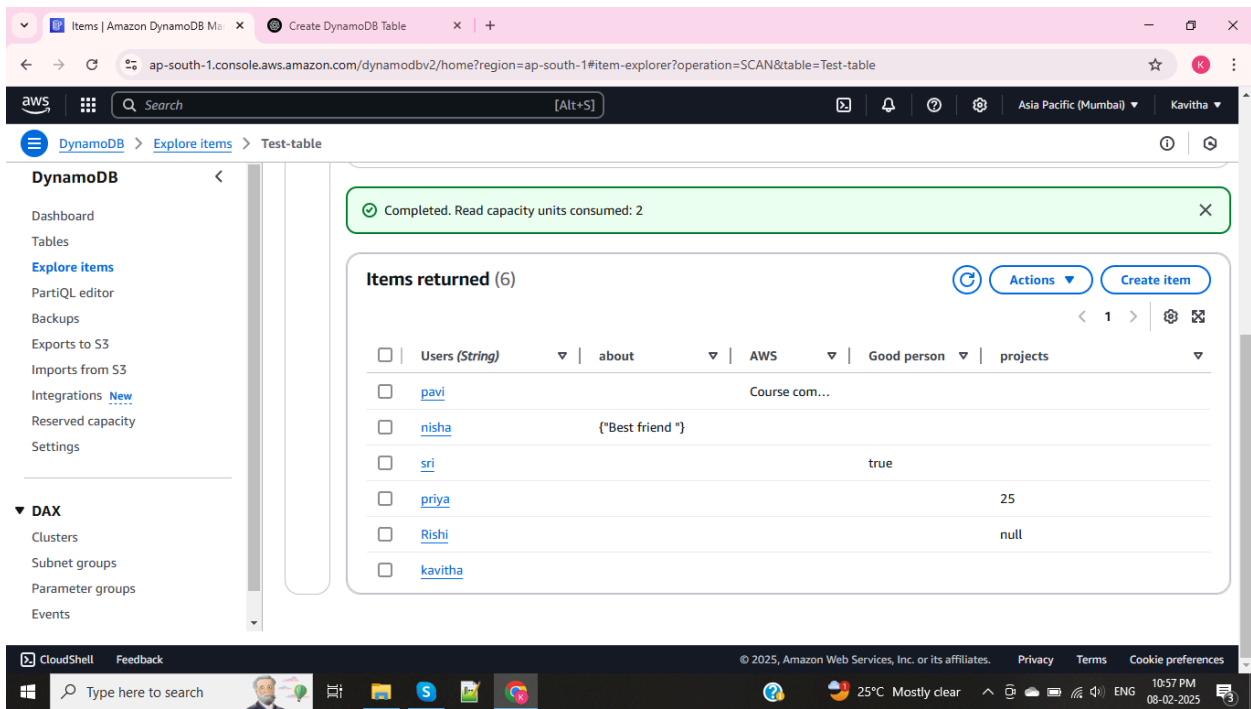
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Click table > **Create item** > using many attributes (**String, Boolean, Number, Null, String set**) explore a items in table.



DynamoDB vs RDS (Relational Database)

Feature	DynamoDB (NoSQL)	RDS (SQL)
Schema	Flexible	Fixed
Scalability	Auto-scaled	Manual scaling
Performance	Millisecond latency	Optimized for complex queries
Query Type	NOSQL queries	SQL queries
Use Case	Real-time apps, IoT, gaming	Traditional applications