



AWS
re:Start
LAB

Introduction to Amazon DynamoDB



WEEK 7





Overview

Amazon DynamoDB is a fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale. It is a fully managed database and supports both document and key-value data models. Its flexible data model and reliable performance make it a great fit for mobile, web, gaming, ad-tech, Internet of Things (IoT), and many other applications.

Amazon DynamoDB offers a comprehensive solution for database management by providing tools to create structured tables, input relevant data, execute precise queries for insightful analysis, and efficiently delete tables when necessary. These capabilities streamline data operations, ensuring databases are well-organized, populated with meaningful data, easily accessible for analysis, and maintainable for optimized performance. DynamoDB's versatility and user-friendly interface make it an indispensable tool for businesses seeking efficient and scalable database solutions.

Topics covered

- Create an Amazon DynamoDB table
- Enter data into an Amazon DynamoDB table
- Query an Amazon DynamoDB table
- Delete an Amazon DynamoDB table

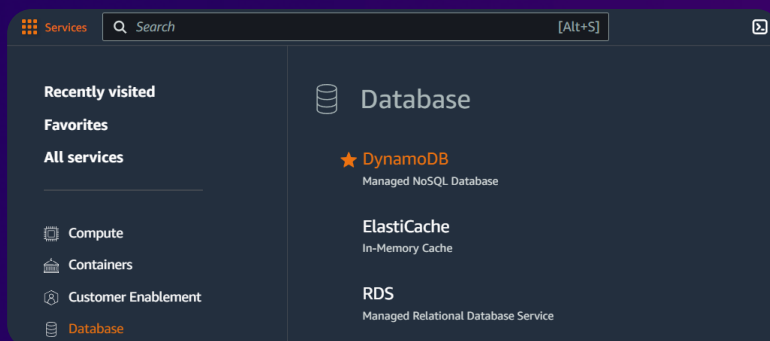


Task 1

Create a new table

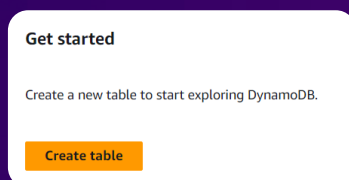
Step 1: Access the DynamoDB service

Open the AWS Management Console, and select DynamoDB.



Step 2: Create table

In the **Get started** section, select [Create table](#) to create an Amazon DynamoDB table.





Task 1

Create a new table

Step 3: Table details

In the **Table details** section, configure the following settings.

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.

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.

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.

Step 4: Review table creation

Verify the Active status of the **Music** table.

Tables (1) [Info](#)

Find tables by table name

Any tag key

Any tag value

< 1 >

<input type="checkbox"/>	Name ▲	Status	Partition key	Sort key	Indexes	Read capacity mode	Write capacity mode	Total size	Table class
<input type="checkbox"/>	Music	Active	Artist (S)	Song (S)	0	Provisioned (5)	Provisioned (5)	0 bytes	Standard

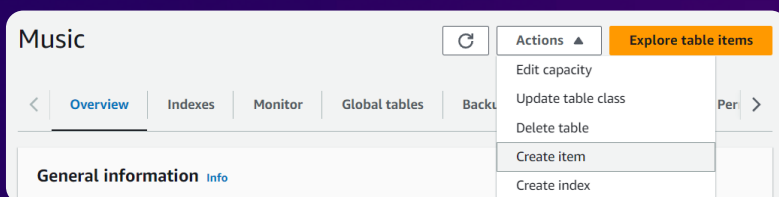


Task 2

Add data

Step 1: Create item

Choose the **Music** table. Then, click the Actions button, and select [Create item](#).



Step 2: Add an item

Add an item to the table using the following attributes.

The screenshot shows the 'Attributes' form in the AWS Data Catalog console. The form has a table with columns for 'Attribute name', 'Value', and 'Type'. There are four rows of attributes: 'Artist - Partition key' with value 'Pink Floyd' and type 'String'; 'Song - Sort key' with value 'Money' and type 'String'; 'Album' with value 'The Dark Side of the Moon' and type 'String'; and 'Year' with value '1973' and type 'Number'. Each row has a 'Remove' button next to it. An 'Add new attribute' button is at the top right.

Attribute name	Value	Type	
Artist - Partition key	Pink Floyd	String	
Song - Sort key	Money	String	
Album	The Dark Side of the Moon	String	Remove
Year	1973	Number	Remove



Task 2

Add data

Step 3: Add a second item

Add a second item to the table using the following attributes.

Attributes

Add new attribute ▼

Attribute name	Value	Type	
Artist - Partition key	<input type="text" value="John Lennon"/>	String	
Song - Sort key	<input type="text" value="Imagine"/>	String	
<input type="text" value="Album"/>	<input type="text" value="Imagine"/>	String	<button>Remove</button>
<input type="text" value="Year"/>	<input type="text" value="1971"/>	Number	<button>Remove</button>
<input type="text" value="Genre"/>	<input type="text" value="Soft rock"/>	String	<button>Remove</button>

Step 4: Add a third item

Add a third item to the table using the following attributes.

Attributes

Add new attribute ▼

Attribute name	Value	Type	
Artist - Partition key	<input type="text" value="Psy"/>	String	
Song - Sort key	<input type="text" value="Gangnam Style"/>	String	
<input type="text" value="Album"/>	<input type="text" value="Psy 6 (Six Rules), Part 1"/>	String	<button>Remove</button>
<input type="text" value="Year"/>	<input type="text" value="2011"/>	Number	<button>Remove</button>
<input type="text" value="LengthSeconds"/>	<input type="text" value="219"/>	Number	<button>Remove</button>





Task 3

Modify an existing item





Step 1: Explore items

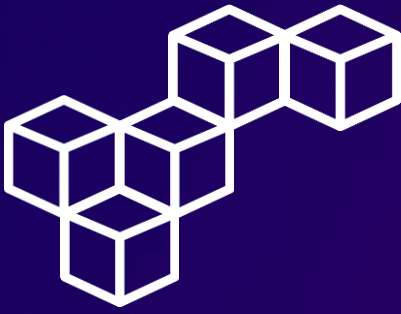
Navigate to the **Explore Items** section, and select the **Music** table.

Items returned (3)						
<div><div></div><div>Actions</div><div>Create item</div></div>						
<div>< 1 >  </div>						
<input type="checkbox"/>	Artist (String) ▾	Song (String) ▾	Album ▾	Genre ▾	Length... ▾	Year ▾
<input type="checkbox"/>	Psy	Gangnam Style	Psy 6 (Six ...		219	2011
<input type="checkbox"/>	John Lennon	Imagine	Imagine	Soft rock		1971
<input type="checkbox"/>	Pink Floyd	Money	The Dark ...			1973

Step 2: Edit items

Choose 'Psy' and change the **Year** from 2011 to 2012.

Items returned (1/3)						
<div><div></div><div>Actions</div><div>Create item</div></div>						
<div>< 1 >  </div>						
<input checked="" type="checkbox"/>	Artist (String) ▾	Song (String) ▾	Album ▾	Genre ▾	Length... ▾	Year ▾
<input checked="" type="checkbox"/>	Psy	Gangnam Style	Psy 6 (Six ...		219	2012  
<input type="checkbox"/>	John Lennon	Imagine	Imagine	Soft rock		1971
<input type="checkbox"/>	Pink Floyd	Money	The Dark ...			1973



Task 4

Query the table

Step 1: Query items

Query the **Music** table using the following parameters.

▼ Scan or query items

☐ Scan

☒ Query

Select a table or index

Select attribute projection

Table - Music ▼

All attributes ▼

Artist (Partition key)

Psy

Song (Sort key)

Equal to ▼

Gangnam Style

☐ Sort descending

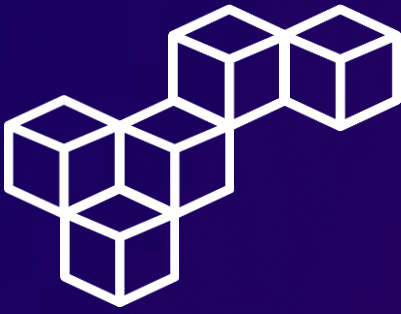
Run

Reset

Step 2: Review query results

The song quickly appears in the list. A query is the most efficient way to retrieve data from a DynamoDB table.

Items returned (1)					
<div><div>Refresh</div><div>Actions ▼</div><div>Create item</div></div>					
<div>< 1 > ⚙️ 🔍</div>					
<input type="checkbox"/>	Artist (String) ▼	Song (String) ▼	Album ▼	LengthSeconds ▼	Year ▼
<input type="checkbox"/>	Psy	Gangnam Style	Psy 6 (Six R...	219	2012



Task 4

Query the table

Step 3: Scan items

Scan the **Music** table using the following parameters.

▼ Scan or query items

☒ Scan

☐ Query

Select a table or index

Table - Music ▼

Select attribute projection

All attributes ▼

▼ Filters

Attribute name	Type	Condition	Value
<input type="text" value="Q Year"/> ✕	Number ▼	Equal to ▼	1971

Run

Reset

Step 4: Review scan results

Only the song released in 1971 is displayed. Scanning for an item involves looking through every item in a table, so it is less efficient and can take significant time for larger tables.

Items returned (1)

↺

Actions ▼

Create item

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1

>

⚙

🔍

<input type="checkbox"/>	Artist (String) ▼	Song (String) ▼	Album ▼	Genre ▼	Year ▼
<input type="checkbox"/>	John Lennon	Imagine	Imagine	Soft rock	1971



Task 5

Delete the table

Step 1: Delete the Music table

Navigate to the **Tables** section, choose the **Music** table, and click the [Delete](#) button.

Tables (1/1) Info

Find tables by table name

Any tag key

Any tag value

< 1 > ⚙

✓

Name ▲

Status

Partition key

Sort key

Indexes

Read capacity mode

Write capacity mode

Total size

Table class

✓

Music

Active

Artist (S)

Song (S)

0

Provisioned (5)

Provisioned (5)

0 bytes

Standard

Step 2: Verify table deletion

The **Music** table has been deleted.

Tables (0) [Info](#)

Find tables by table name

Any tag key

Any tag value

<

1

>

Create table

Name ▲

Status

Partition key

Sort key

Indexes

Read capacity mode

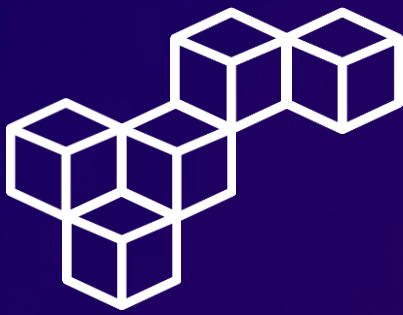
Write capacity mode

Total size

Table class

You have no tables in this account in this AWS Region.

Create table



Conclusions

Amazon DynamoDB

Amazon DynamoDB offers a scalable and flexible solution for database management, catering to varying data needs.

Create an Amazon DynamoDB table

Creating a DynamoDB table provides a structured framework for organizing and storing data efficiently.

Enter data into an Amazon DynamoDB table

Entering data into DynamoDB tables is essential for populating databases with relevant information for analysis and retrieval.

Query an Amazon DynamoDB table

Querying DynamoDB tables enables users to extract specific data subsets, supporting insightful data analysis and decision-making processes.

Delete an Amazon DynamoDB table

Deleting DynamoDB tables allows for efficient data cleanup and maintenance, ensuring optimized performance and clutter-free databases.



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