

## How to begin with the Amazon Timestream in 5 simple steps?

If you are looking for the comprehension of Amazon Timestream as well as the step-by-step guide of getting started with it, we have got you covered.

### What is Amazon Timestream?



Amazon Timestream is a time series database that offers better functionalities in comparison to the relational database. It is serverless which allows it to provide its users with fast and scalable peculiarities.

### Breaking down the complex technical terms:

If you have a complete idea regards these terminologies, you are more than welcome to skip this section, but if you are looking for some easy to understand description relevant to these terms, here we go:

#### Relational Database:

The relational database is a conventional database. It stores data in the forms of tables, allowing the user to implement the relational operations between them. A significant character is that the relational database can be scaled vertically, but not horizontally.

## **Serverless:**

It is a model of cloud computing that allows the user to pay for the resources that he/she has used only. It saves the cost as it does not involve the purchase of a pre-defined set of resources and capacity.

## **Time series data:**

The collection of data that is changing over the time is known as time-series data. The time series data is collected over equally divided time intervals. Each value holds a timestamp relevant to its observation time. This stands significant when it comes to average result deductions.

The example of time series data may include the speed of the car, the rise in the price of stocks, the weather forecasts and such. All of these values are measured relevant to a time which may be anything in between seconds to years, relevant to the scenario.

## **Why Amazon Timestream?**

Amazon Timestream comes in hand with numerous benefits and features that make it stand out. Some of these include:

1. As Amazon Timestream is serverless, it saves you cost because you pay only for the storage you use.
2. The database can scale itself according to the data.
3. Though Amazon Timestream database stores data in two storage-tiers, but you can access them without even specifying the storage location.
4. After naming your database, you enter a magnetic key which leads to the fact that all the data in the database remains encrypted and secure.
5. The shifting process of data from one storage tier to the other is entirely automatic.

## **Applications of the Amazon Timestream Database:**

Some of the practical applications of this database include:

### ▪ **IoT applications:**

The device sensors collecting information about motion, temperature, and weather use the Amazon Timestream database to analyze data and come up with certain conclusions.

### ▪ **DevOps Applications:**

Developers use Amazon Timestream to analyze the metrics of performance by taking the observation of measures like CPU Utilization and memory usage.

### ▪ **App Analytics:**

It involves the idea of collecting the data at a range to deduce conclusions from it. It may include the amount of traffic on a website in the last month; the time spent by the user on the webpage; or the average time spent by the user on a video.

## **How does it work?**

Some of the points of consideration when it comes to this database are:

- The Amazon Time stream database functions on a two-tier storage capability. One is the In-memory that holds the recent data and the magnetic storage that encompasses the historical or past data. It allows the efficient functioning of the system on the whole.
- User can perform several queries on the data (in-memory, magnetic or both) to deduce conclusions. However, this database does not allow the function of 'Join' except for the time when it's about joining data of the same table.
- Amazon Timestream database does not allow the updating or deletion of data. The data is automatically removed from the storage after it reaches the retention limit.
- Data can be written in this database using AWS SDKs that could be in Java, Python, .NET and related. And the user can write queries in ANSI-2003 SQL.
- The database holds diverse integrations and drivers which include Grafana, AWS Labs available on GitHub, AWX IoT Core and such.

## Setting up your Amazon Timestream database:

To set up your database and perform analyzations on it, follow the steps given below:

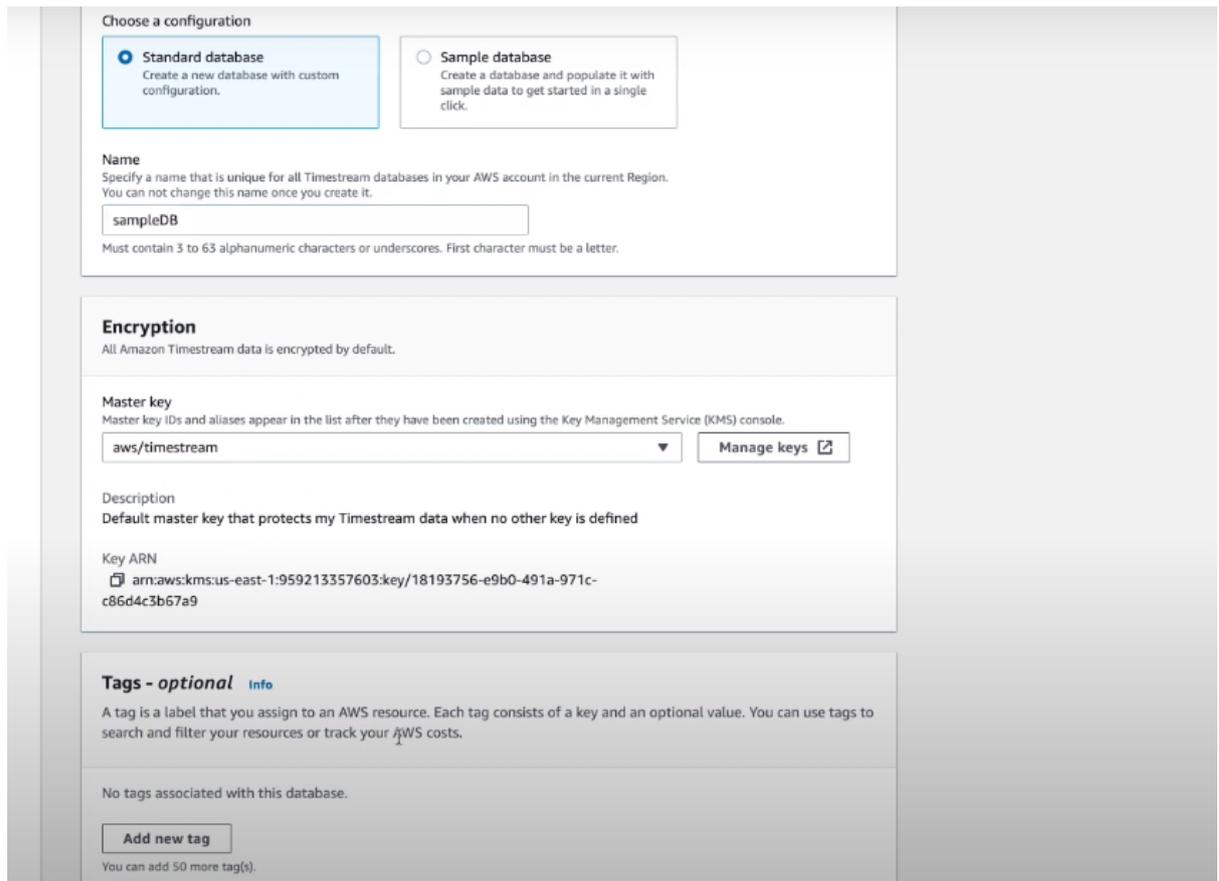
### Step 1:

1. Reach out to the [Amazon Timestream Console](#).
2. Under the [Pricing](#) tag, you can study the pricing options.
3. Click on [Create Database](#) button under the [Getting Started](#) heading.

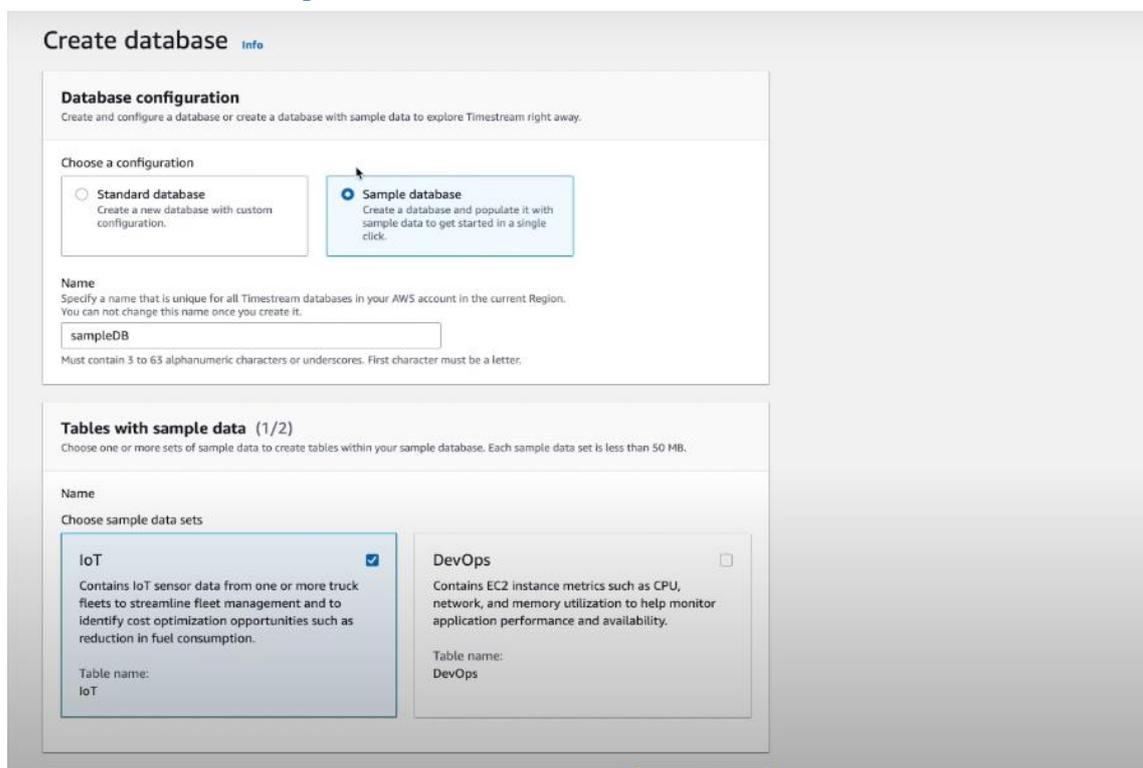
The screenshot shows the Amazon Timestream console landing page. At the top, it says "Database" and "Amazon Timestream Fast, scalable, fully managed time series database". Below this, there is a brief description: "With Timestream, you can easily store and analyze sensor data for IoT applications, metrics for DevOps use cases, and telemetry for application monitoring scenarios such as clickstream data analysis." On the right side, there are two white boxes: "Getting started" with a "Create database" button, and "Pricing (US\$)" with a "View pricing information" link. The main content area is titled "Benefits and features" and contains three columns of text describing the service's capabilities.

### Step 2:

1. Choose your database configuration as [Standard Database](#) or [Sample Database](#).
2. Give a name to your new database in the [Name](#) placeholder.
3. If you had selected the [Standard Database](#), you have an option of adding [Tags](#).



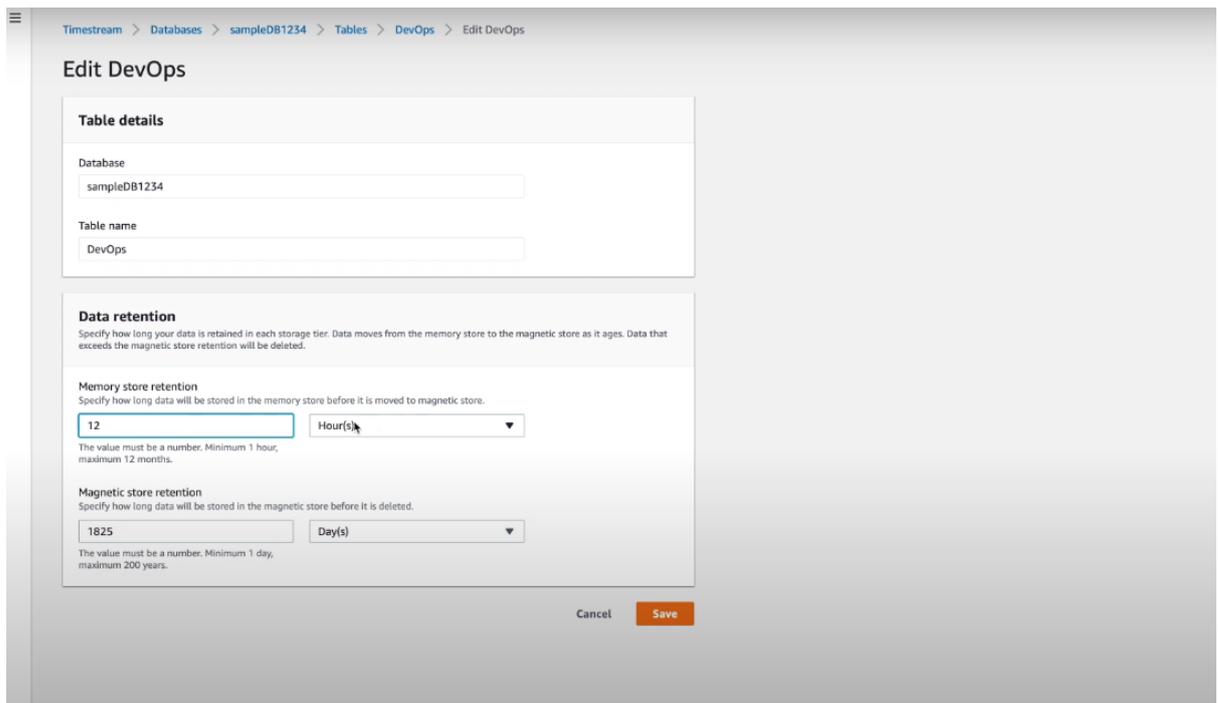
4. If you had selected the [Sample Database](#), choose the sample data sets of your choice as either [IoT](#), [DevOps](#) or both.



5. Hit on [Create Database](#).

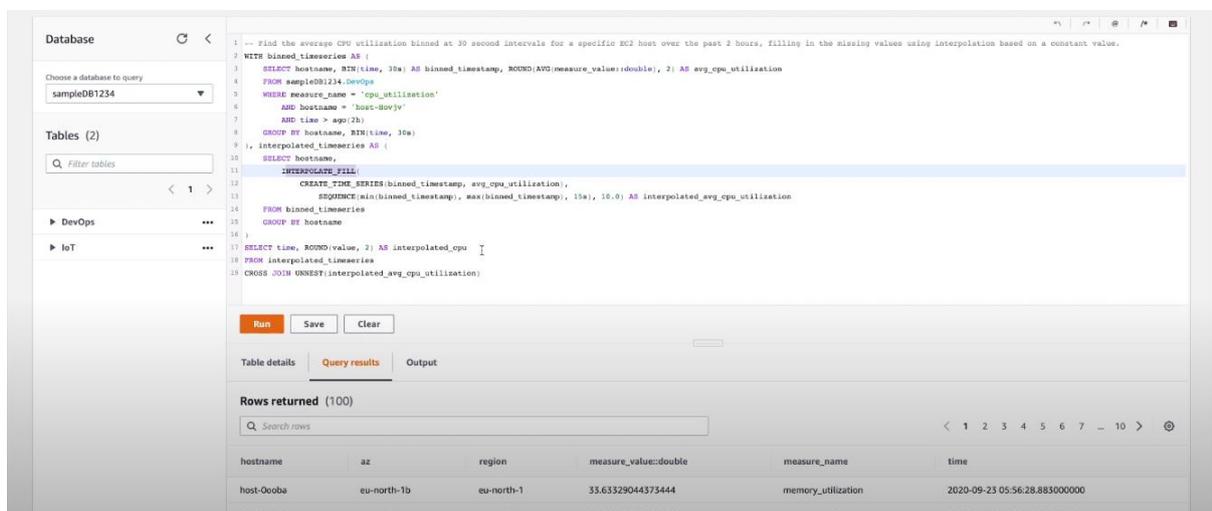
### Step 3:

1. Click on your database under the [Databases](#) tab.
2. Select the relevant table from the [Tables](#) Tab.
3. You will be able to see the [Summary](#) details of the table. If you want to edit it, hit on the [Edit](#) button on the top right corner.
4. Edit the details accordingly.
5. Choose the [Memory Store Retention](#) and [Magnetic Store Retention](#) period carefully as the data is permanently deleted from the storage as soon as this period ends.
6. [Save](#) the changes.



### Step 4:

1. Select the [Query Editor](#) from the left tab.
2. You can perform endless queries on your data here.
3. Select the [Sample Queries](#) from the upper tab. Here you can access numerous pre-defined queries.



4. You can see the [Query Results](#) and [Output](#) by selecting the specified option from the tab below.

### Step 5:

1. Hit on to the [Monitoring](#) from the left tab.
2. You can glimpse many graphs and visual representation of your data analyzation.



All in all, as promised, we have provided you with a detailed step by step guide of getting started with Amazon Timestream. Time to make some experimentations of your data there, are you ready?

*Wish you happy Querying! : )*

## References:

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<https://www.infoq.com/news/2020/10/aws-amazon-timestream-ga/>

<https://towardsdatascience.com/amazon-timestream-is-finally-released-is-it-worth-your-time-e6b7eff10867>

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## Videos:

<https://www.youtube.com/watch?v=8RHFPNReyII>

<https://www.youtube.com/watch?v=NLFpdzZzHHY>