

## Lesson 08 Demo 07

### Creating a Kinesis Data Stream

**Objective:** To create a Kinesis Data Stream in Amazon Kinesis to set up a data stream, configure its capacity, and understand the concept of shards as a fundamental resource in Kinesis

**Tools required:** Amazon Workspaces

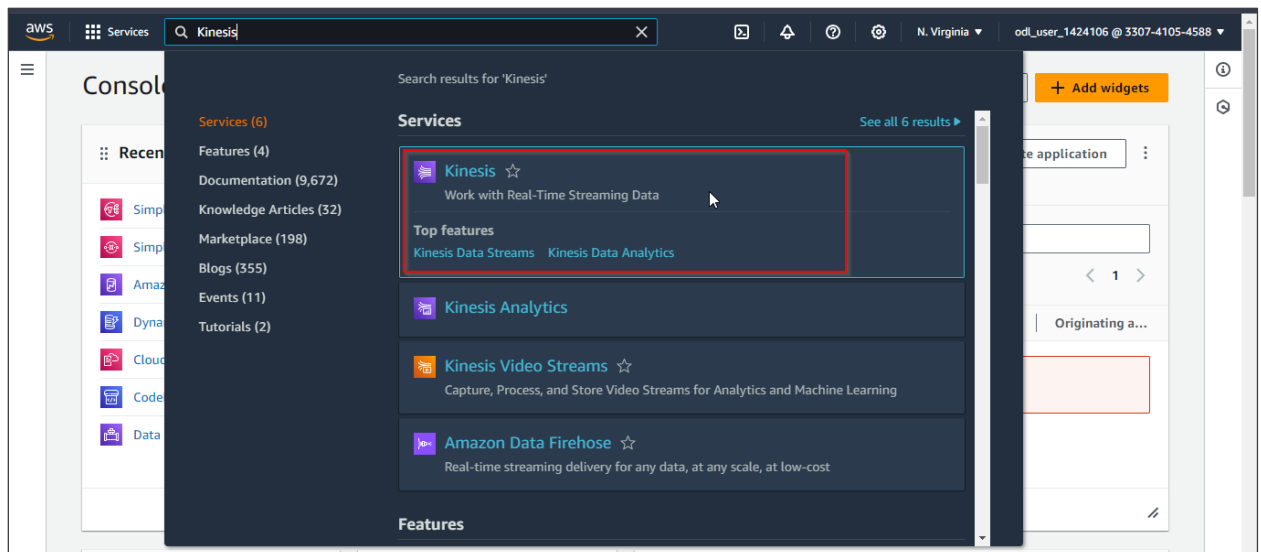
**Prerequisites:** AWS account

Steps to be followed:

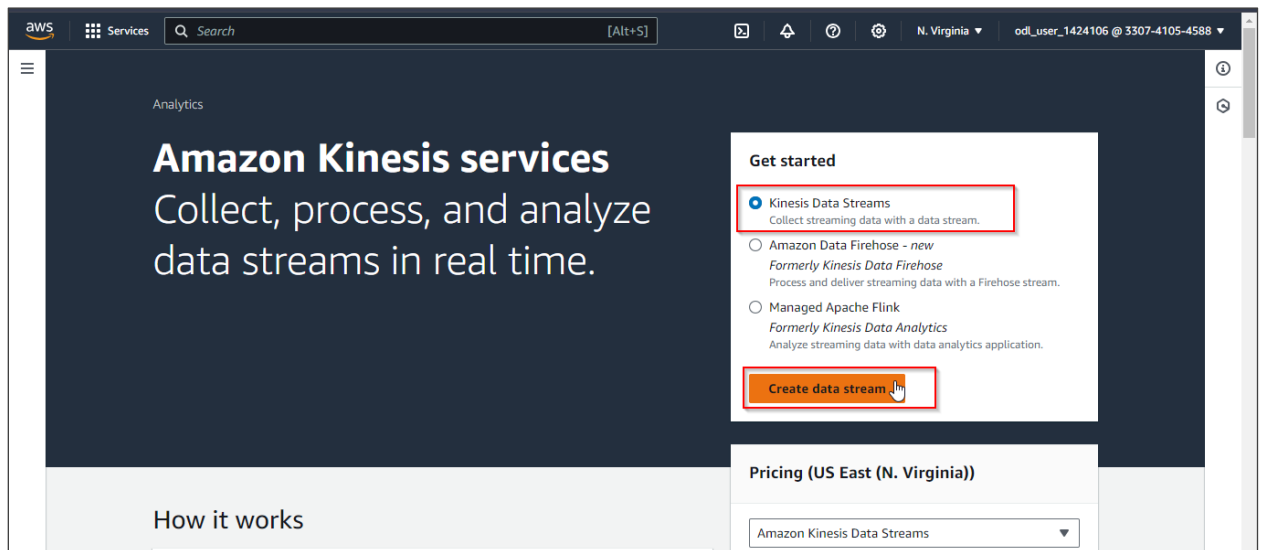
1. Configure a Kinesis Data Stream

#### Step 1: Configure a Kinesis Data Stream

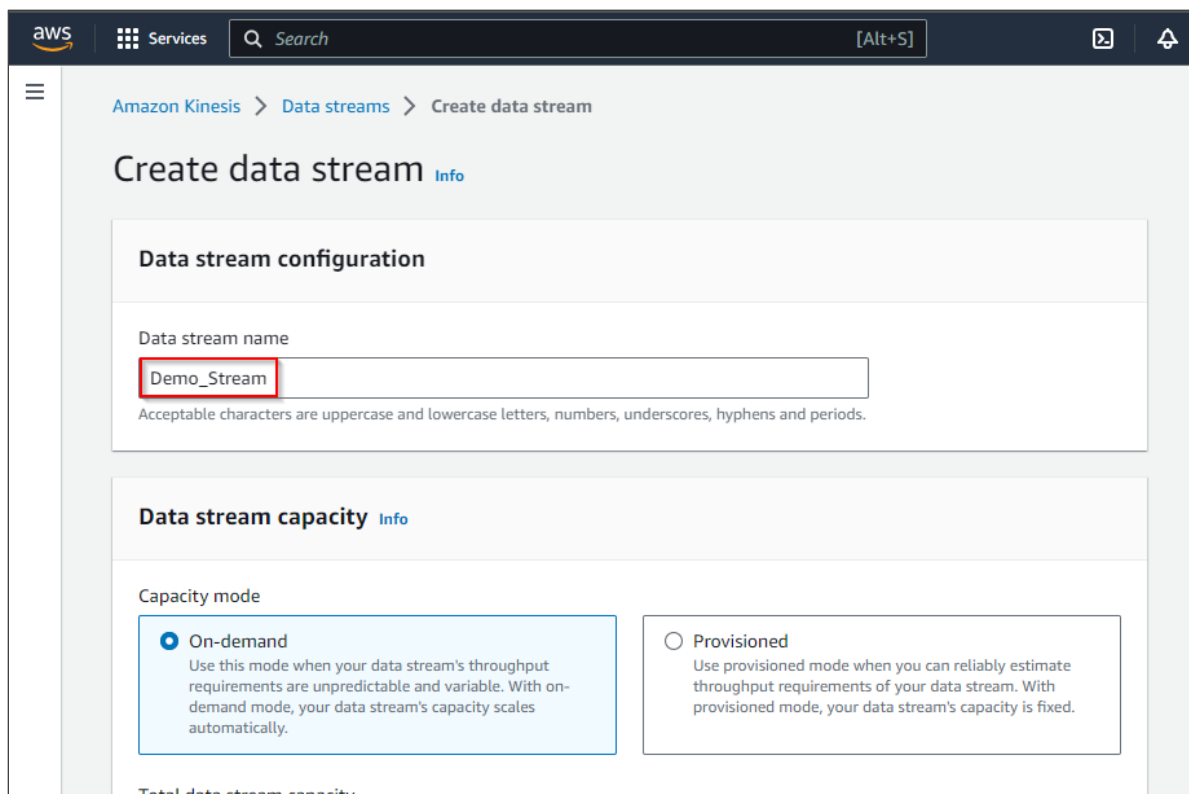
- 1.1 Navigate to the Amazon homepage, search for **Kinesis**, and select it



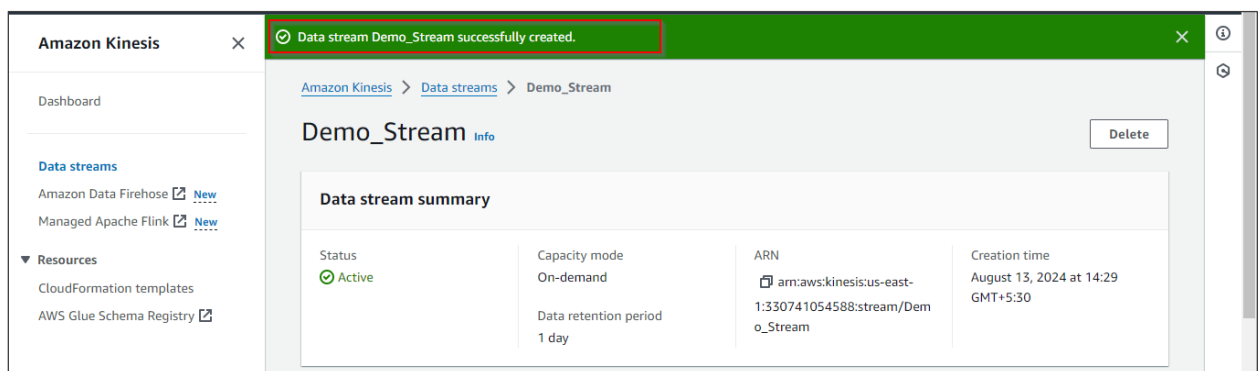
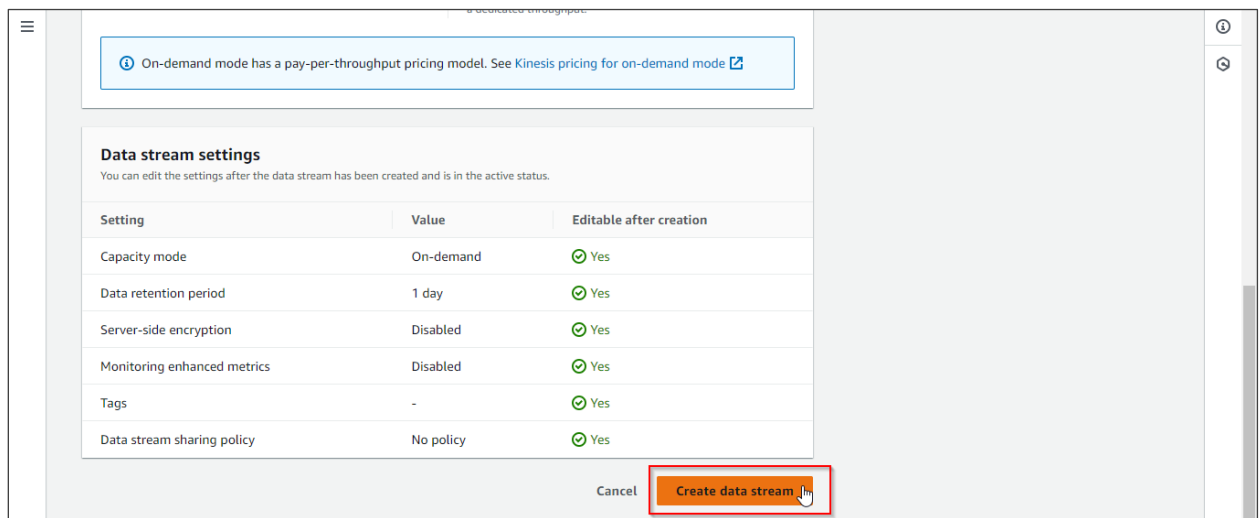
## 1.2 Click on **Kinesis Data Streams** and then select **Create data stream**



## 1.3 Name the data stream **Demo\_Stream**



## 1.4 Click on the **Create data stream** button



The data stream **Demo\_Stream** has been successfully created.

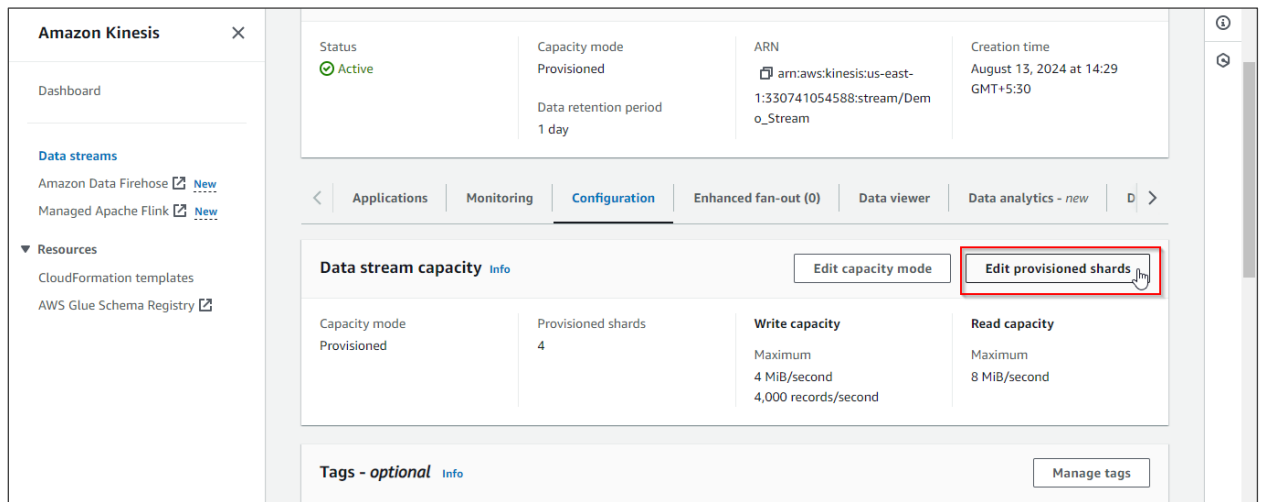
## 1.5 Navigate to **Configuration** and click **Edit capacity mode**

The screenshot shows the Amazon Kinesis console interface. On the left is a sidebar with navigation options: Dashboard, Data streams (with links to Amazon Data Firehose and Managed Apache Flink), and Resources (with links to CloudFormation templates and AWS Glue Schema Registry). The main panel displays the 'Data stream summary' for a stream named 'Dem o\_Stream'. It shows the status as 'Active', capacity mode as 'On-demand', ARN as 'arn:aws:kinesis:us-east-1:330741054588:stream/Dem o\_Stream', and creation time as 'August 13, 2024 at 14:29 GMT+5:30'. Below the summary is a tabbed interface with 'Configuration' selected. Under 'Configuration', the 'Data stream capacity' section is visible, showing 'On-demand' capacity mode and its limits: 200 MiB/second and 200,000 records/second for write capacity, and 400 MiB/second for read capacity. The 'Edit capacity mode' button is highlighted with a red box.

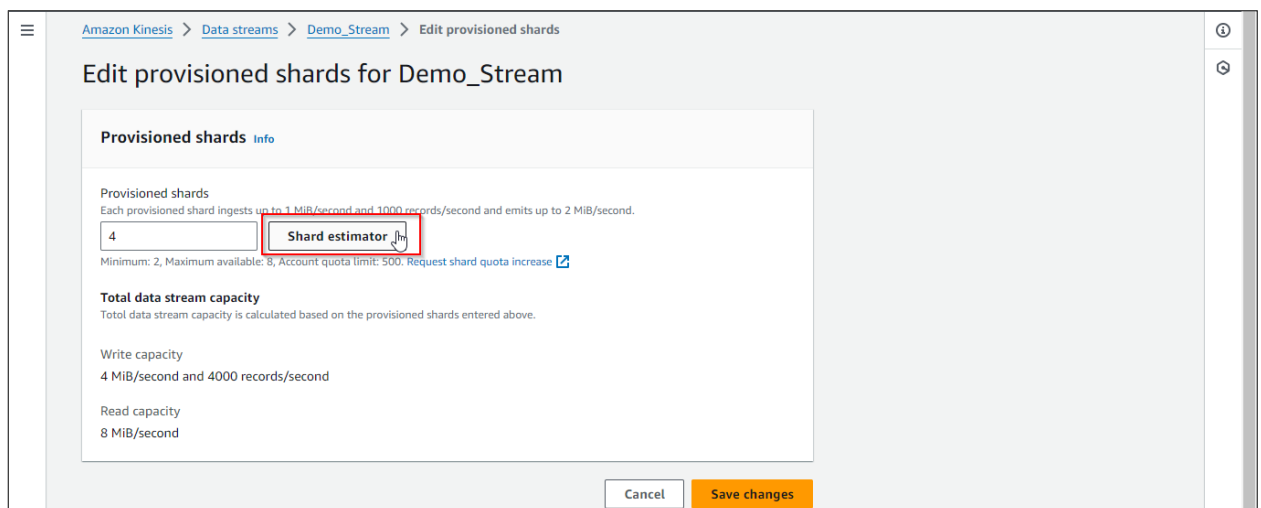
## 1.6 Under Capacity mode select **Provisioned** and click on **Save changes**

The screenshot shows the 'Capacity mode' configuration page in the Amazon Kinesis console. It presents two options: 'On-demand' and 'Provisioned'. The 'Provisioned' mode is selected and highlighted with a red box. Below the mode selection, it shows 'Provisioned shards' set to 4, resulting in a 'Total data stream capacity' of 4 MiB/second and 4,000 records/second for write, and 8 MiB/second for read. A note states: 'Provisioned mode has a fixed-throughput pricing model. See Kinesis pricing for Provisioned mode'. At the bottom, the 'Save changes' button is highlighted with a red box.

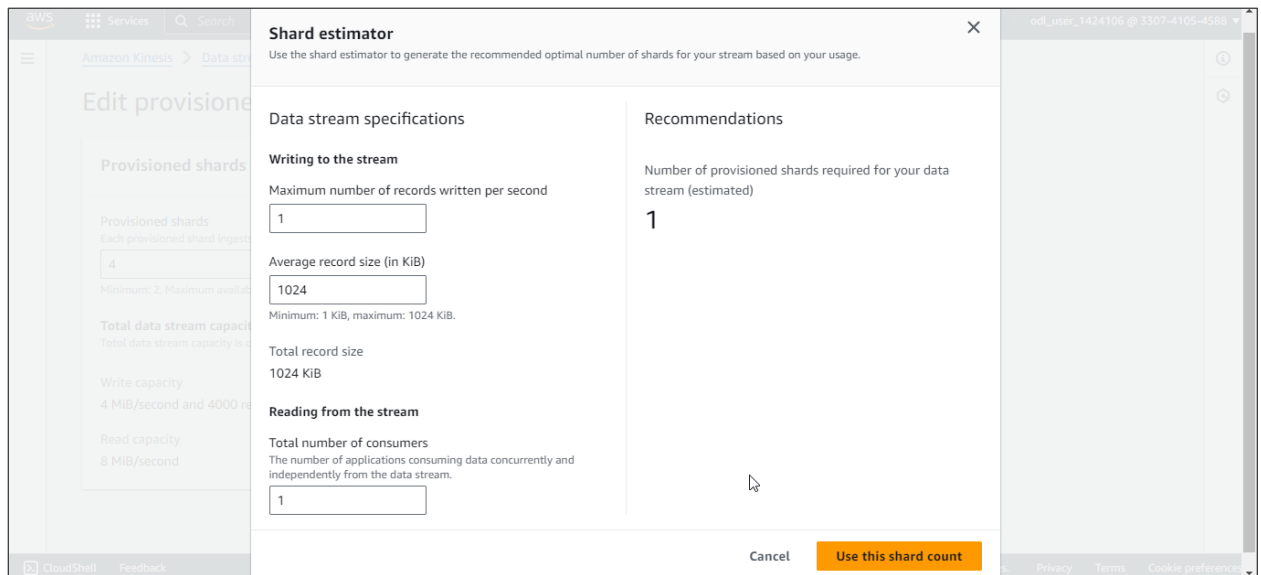
## 1.7 Click on the **Edit provisioned shards** button



## 1.8 Click on the **Shard estimator** button



The total capacity of a Kinesis Data Stream is calculated by summing the capacities of its individual shards. By entering the number of provisioned shards, participants can understand the concept of data stream capacity.



**Shard estimator**

Use the shard estimator to generate the recommended optimal number of shards for your stream based on your usage.

Data stream specifications	Recommendations
<b>Writing to the stream</b> Maximum number of records written per second <input type="text" value="1"/> Average record size (in KiB) <input type="text" value="1024"/> <small>Minimum: 1 KiB, maximum: 1024 KiB.</small> Total record size 1024 KiB	Number of provisioned shards required for your data stream (estimated) <b>1</b>
<b>Reading from the stream</b> Total number of consumers <small>The number of applications consuming data concurrently and independently from the data stream.</small> <input type="text" value="1"/>	

Cancel **Use this shard count**

By following these steps, you have successfully created a Kinesis Data Stream, configured its capacity, and gained insights into allocating shards for stream processing.