

# AWS STREAMING PROCESSING

**AWS Kinesis** is an AWS service that deals with real-time streaming of data coming from the chatbot application.

**AWS Lambda Functions** allows to run code in response to events without having to manage servers or infrastructure; use for producer and consumer of streaming data, and for machine learning codes.

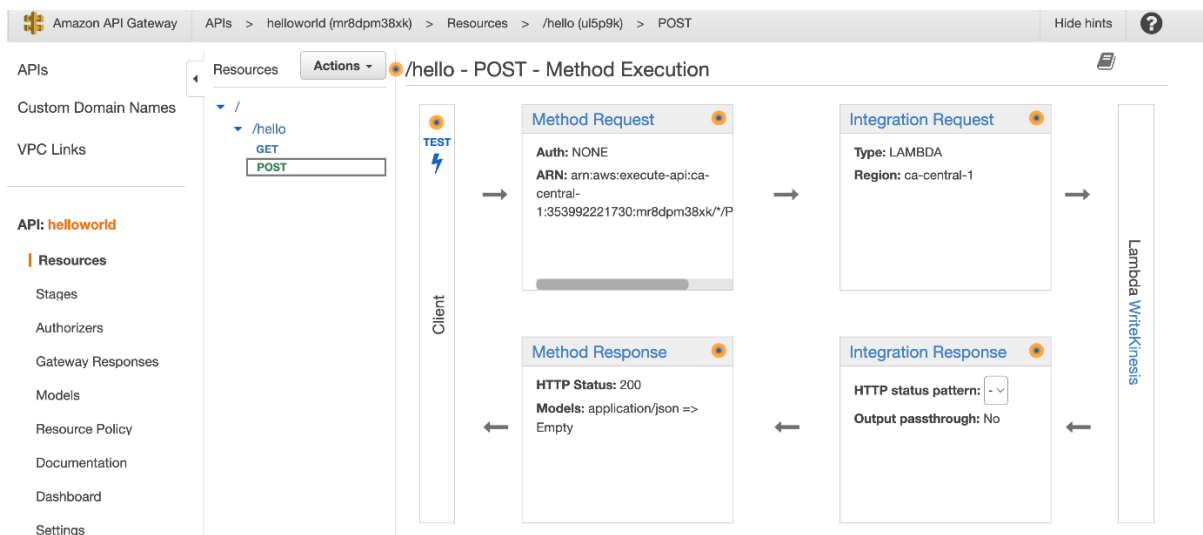
## AWS streaming processing process and configuration

### 1. AWS API Gateway

Sample of data illustrating the connection of GET and POST methods to the "WriteKinesis" function in AWS Lambda

- GET – get specific user information
- POST – sends each JSON to the buffer of queue

```
{
  "InvoiceNo": "536365",
  "StockCode": "85123A",
  "Description": "WHITE HANGING HEART T-LIGHT HOLDER",
  "Quantity": 6,
  "InvoiceDate": "12/1/2010 8:26",
  "UnitPrice": 2.55,
  "CustomerID": 17850,
  "Country": "United Kingdom"
}
<Response [200]>
{
  "InvoiceNo": "536365",
  "StockCode": "71053",
  "Description": "WHITE METAL LANTERN",
  "Quantity": 6,
  "InvoiceDate": "12/1/2010 8:26",
  "UnitPrice": 3.39,
  "CustomerID": 17850,
  "Country": "United Kingdom"
}
<Response [200]>
{
  "InvoiceNo": "536365",
  "StockCode": "84406B",
  "Description": "CREAM CUPID HEARTS COAT HANGER",
  "Quantity": 8,
  "InvoiceDate": "12/1/2010 8:26",
  "UnitPrice": 2.75,
  "CustomerID": 17850,
  "Country": "United Kingdom"
}
<Response [200]>
{
  "InvoiceNo": "536365",
  "StockCode": "84029G",
  "Description": "KNITTED UNION FLAG HOT WATER BOTTLE",
  "Quantity": 6,
  "InvoiceDate": "12/1/2010 8:26",
  "UnitPrice": 3.39,
  "CustomerID": 17850,
  "Country": "United Kingdom"
}
<Response [200]>
{
  "InvoiceNo": "536365",
  "StockCode": "84029E",
  "Description": "RED WOOLLY HOTTIE WHITE HEART.",
  "Quantity": 6,
  "InvoiceDate": "12/1/2010 8:26",
  "UnitPrice": 3.39,
  "CustomerID": 17850,
  "Country": "United Kingdom"
}
```



### 2. AWS Lambda Functions


- We've established a Lambda function named 'WriteKinesis' that will be executed upon a call to the API Gateway
- The 'WriteKinesis' function will either execute a GET request to retrieve user data or a POST request to send each JSON to the buffer queue


Lambda > Functions > WriteKinesis


## WriteKinesis

Throttle Copy ARN Actions

▼ Function overview Info

 WriteKinesis

 Layers (0)

 API Gateway

+ Add trigger

+ Add destination

Description

-

Last modified  
24 minutes ago

Function ARN  
[arn:aws:lambda:ca-central-1:353992221730:function:WriteKinesis](#)

Function URL [Info](#)

-

General configuration

Triggers

**Permissions**

Destinations

### Execution role

Edit

Role name  
[WriteKinesis-role-wubtg5ws](#)

### 3. Kinesis Buffer

- We created a Kinesis buffer named 'APIData' for messages or transactions to await processing
- It is triggered either by another function or store the data in a database such as DynamoDB

IAM S3 Lambda API Gateway Kinesis DynamoDB Amazon Redshift CloudWatch Athena CodeBuild Kinesis Video Streams

Kinesis analytics aws streaming

### Kinesis stream

Select a Kinesis stream to listen for updates on.

Q kinesis/APIData X ↻

### Consumer - optional

Select an optional [consumer](#) of your stream to listen for updates on.

↕ ↻

☒ **Activate trigger**  
Select to activate the trigger now. Keep unchecked to create the trigger in a deactivated state for testing (recommended).

### Batch size

The number of records in each batch to send to the function.

10

### Starting position

The position in the stream to start reading from. For more information, see [ShardIteratorType](#) in the Amazon Kinesis API Reference.

Latest

### Batch window - optional

The maximum amount of time to gather records before invoking the function, in seconds.

### ▼ Additional settings

#### On-failure destination

Lambda discards records that are expired or fail all retry attempts. You can send discarded records from a stream to an Amazon SQS queue or an Amazon SNS topic.

Queue or topic ARN

#### Retry attempts

The maximum number of times to retry when the function returns an error.

2

#### 4. Data is being logged successfully through AWS Kinesis Data Stream

CloudWatch > Log groups > /aws/lambda/WriteKinesis > 2023/06/20/[\$LATEST]8dbe388e6d204adba2ebe974132a8572

Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

Actions

Start tailing

Create metric filter

Filter events

Clear

1m

30m

1h

12h

Custom

Display

	Timestamp	Message
		No older events at this moment. <a href="#">Retry</a>
	2023-06-20T15:13:31.026-04:00	INIT_START Runtime Version: python:3.9.v23 Runtime Version ARN: arn:aws:lambda:ca-central...
	2023-06-20T15:13:31.270-04:00	START RequestId: 6425a240-ccd8-472f-bc40-f4cfe331d186 Version: \$LATEST
	2023-06-20T15:13:31.270-04:00	MyEvent:
	2023-06-20T15:13:31.270-04:00	{'body-json': {'InvoiceNo': 536365, 'StockCode': '85123A', 'Description': 'WHITE HANGING ...
	2023-06-20T15:13:32.619-04:00	END RequestId: 6425a240-ccd8-472f-bc40-f4cfe331d186
	2023-06-20T15:13:32.619-04:00	REPORT RequestId: 6425a240-ccd8-472f-bc40-f4cfe331d186 Duration: 1349.20 ms Billed Durati...
	2023-06-20T15:13:32.891-04:00	START RequestId: 71da51fb-89c4-4833-adb7-c0051c62f29c Version: \$LATEST
	2023-06-20T15:13:32.891-04:00	MyEvent:
	2023-06-20T15:13:32.891-04:00	{'body-json': {'InvoiceNo': 536365, 'StockCode': '71053', 'Description': 'WHITE METAL LAN...