

Step1:

Kinesis Data Stream Creation:

Amazon Kinesis > Data streams

Data streams (1) Info

Process data in real time

Create a Firehose stream

Actions

Create data stream

Find data streams

< 1 >

	Name	Status	Capacity mode	Provisioned shards	Sharing policy	Data retention period	Encryption	Consumers with enhanced fan-out
<input type="checkbox"/>	RohitKDS	Active	Provisioned	1	No	1 day	Disabled	0

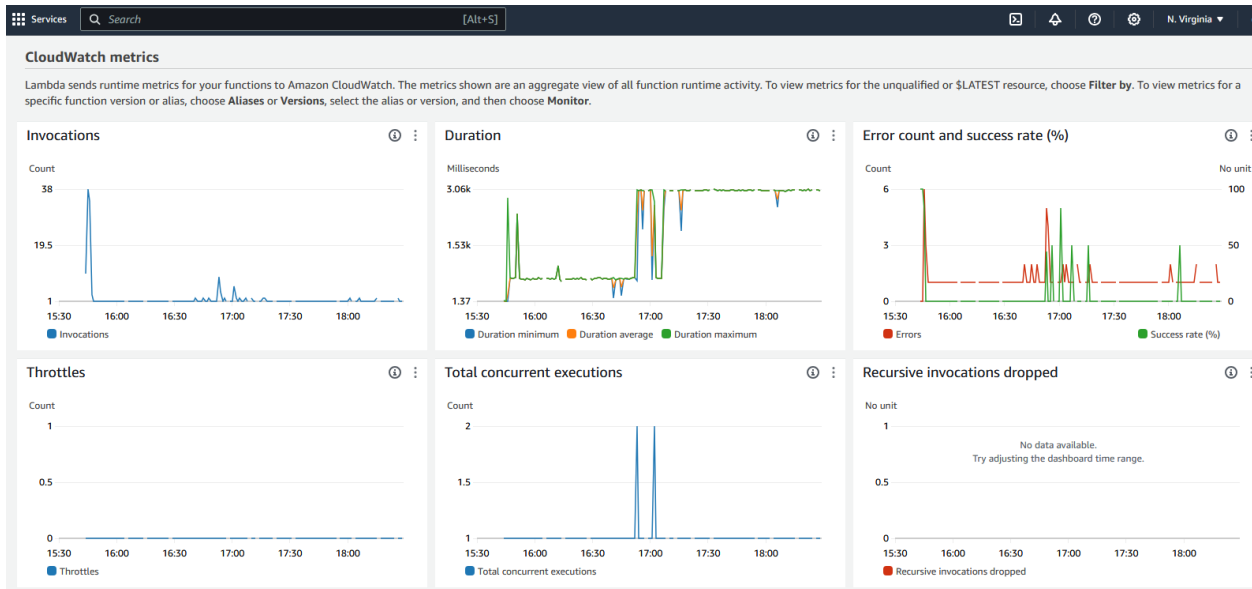
Step 2:

Injecting mock data into the Kinesis stream:

```
mock-datapy X
mock-datapy > _
1 import json
2 import boto3
3 import random
4 import time
5 from faker import Faker
6
7 # Initialize Faker
8 fake = Faker()
9
10 # Initialize Kinesis client
11 kinesis = boto3.client('kinesis', region_name='us-east-1') # replace 'your-region' with your actual region
12
13 # Kinesis stream name
14 stream_name = 'RohitKDS' # replace with your stream name
15
16 def generate_mock_data():
17     """Generate mock data."""
18     return {
19         'Rid': fake.uuid4(),
20         'Rname': fake.name(),
21         'Remail': fake.email(),
22         'Raddress': fake.address(),
23         'Rcreated_at': fake.iso8601()
24     }
25
26 def send_to_kinesis(stream_name, data):
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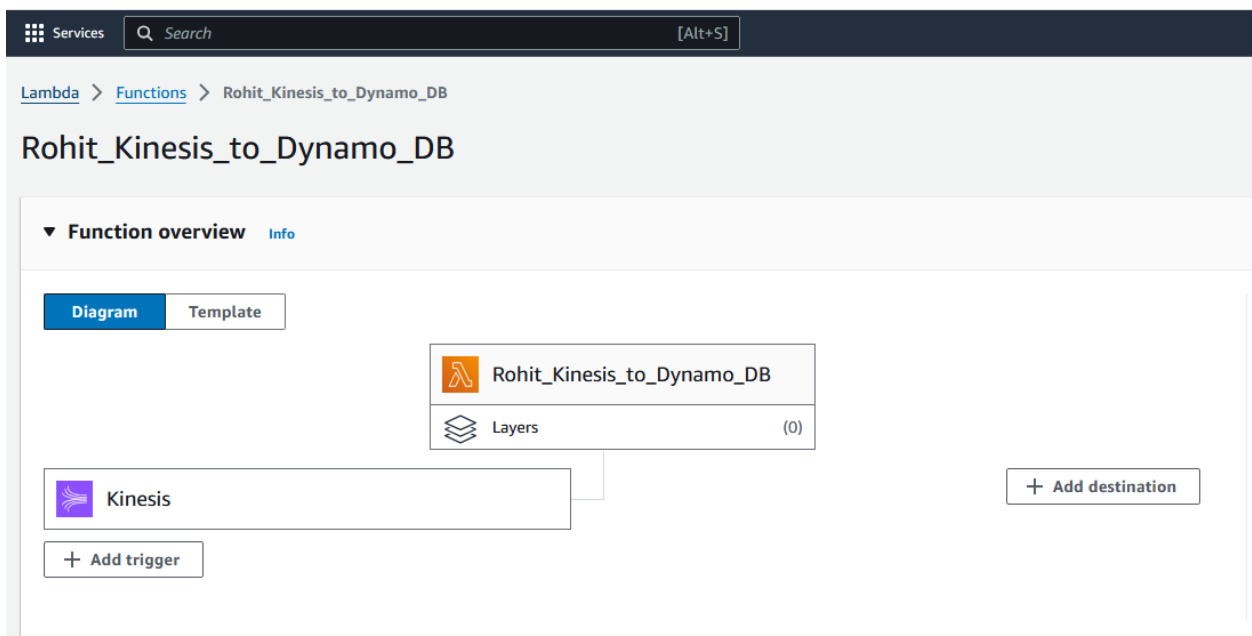
Step 3:

Verifying data availability in the Kinesis stream:



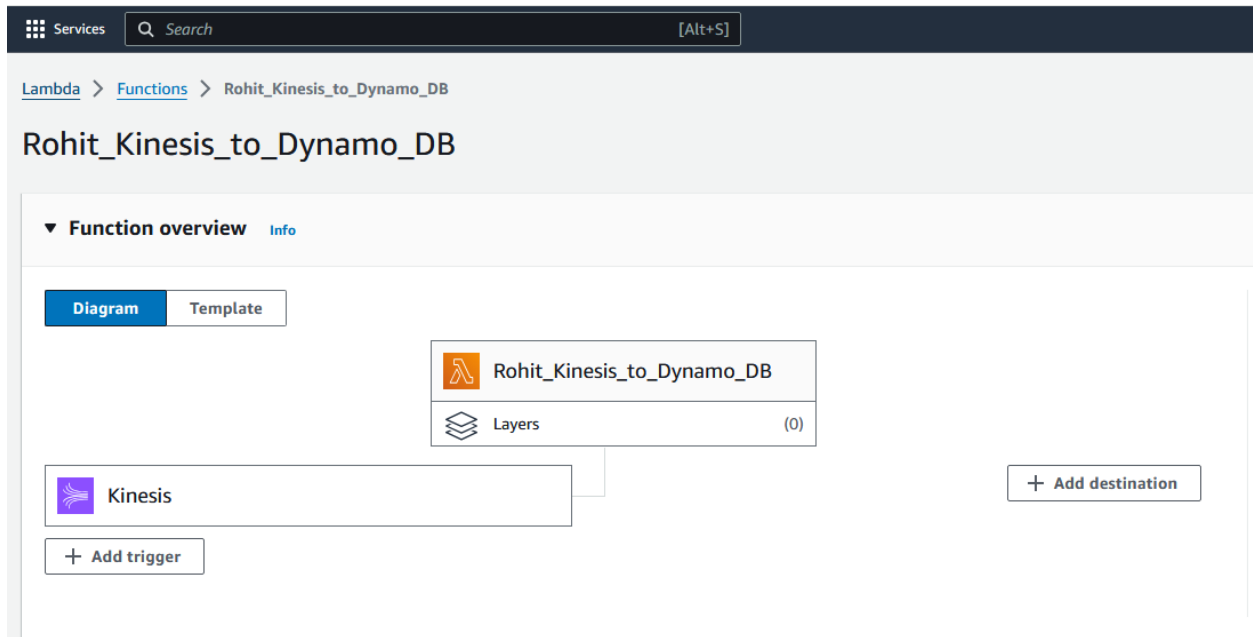
Step 4:

Configuring a Lambda function to fetch and store Kinesis data in DynamoDB, triggered by the Kinesis stream:



Step 5:

Configuring a Lambda function to fetch and store Kinesis data in DynamoDB, triggered by the Kinesis stream:



Step 6:

Testing and validating Lambda function code:

The screenshot shows the AWS Lambda console for the function 'Rohit_Kinesis_to_Dynamo_DB'. The 'Code source' tab is active, and the 'Test' button has been clicked. The 'Execution results' section shows a successful test event named 'test1' with a response indicating successful processing of records. The 'Function Logs' section shows the execution details, including the request ID and duration.

Test Event Name	Response
test1	<pre>{ "statusCode": 200, "body": "\\Successfully processed records.\\\""} </pre>

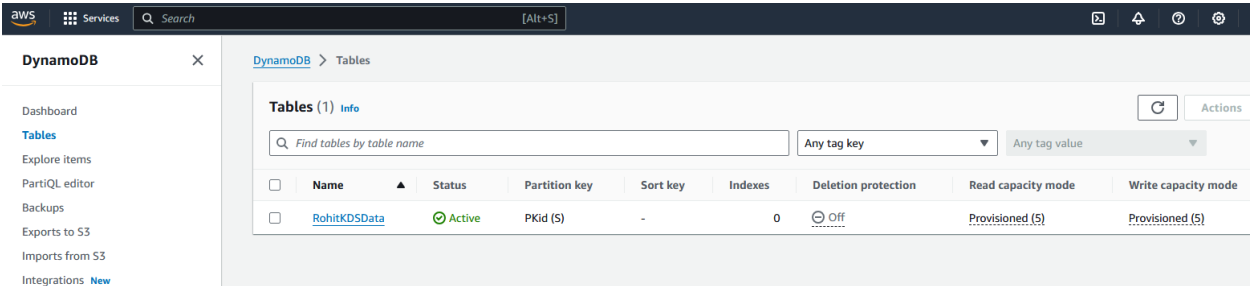
Function Logs

```
START RequestId: fadceef-02f5-4918-8069-d656c1c85f7d Version: $LATEST
END RequestId: fadceef-02f5-4918-8069-d656c1c85f7d
REPORT RequestId: fadceef-02f5-4918-8069-d656c1c85f7d  Duration: 1951.10 ms  Billed Duration: 1952 ms  Memory Size: 128 MB Max Memory Used: 31 MB
```

Request ID
fadceef-02f5-4918-8069-d656c1c85f7d

Step 7:

Setting up DynamoDB instance:



Step 8:

Conducting system tests by sending 100 records to the Kinesis stream:

```
mock-datapy X
mock-datapy > generate_mock_data
1 import json
2 import boto3
3 import random
4 import time
5 from faker import Faker
6
7 # Initialize Faker
8 fake = Faker()
9
10 # Initialize Kinesis client
11 kinesis = boto3.client('kinesis', region_name='us-east-1') # replace 'your-region' with your actual region
12
13 # Kinesis stream name
14 stream_name = 'RohitKDS' # replace with your stream name
15
16 def generate_mock_data():
17     """Generate mock data."""
18     return {
19         'id': fake.uuid4(),
20         'RName': fake.name(),
21         'REmail': fake.email(),
22         'RAddress': fake.address(),
23         'Rcreated_at': fake.iso8601()
24     }
25
26 def send_to_kinesis(stream_name, data):
27     kinesis.put_record(StreamName=stream_name, Data=json.dumps(data), PartitionKey='1')
28
29 # Generate and send 100 records
30 for i in range(100):
31     data = generate_mock_data()
32     send_to_kinesis(stream_name, data)
33     time.sleep(0.1)
34
35 # Print completion message
36 print("100 records sent to Kinesis stream.")
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

KeyboardInterrupt

PS C:\Users\rohitjam\Downloads\rohitkds> "C:/Program Files/Python312/python.exe" c:/Users/rohitjam/Downloads/rohitkds/mock-data.py

Sent data: {'Rid': '08f85bdb-f7b8-4cf1-89f2-caee061bcc4', 'RName': 'Walter Harmon', 'REmail': 'christian30@example.org', 'RAddress': '46618 Olson Meadows\ngreenshire, PW 71808', 'Rcreated_at': '1976-01-09T06:45:46'}

Kinesis response: {'ShardId': 'shardId-000000000000', 'SequenceNumber': '49653797158070387385277665275734963879112098975892635650', 'ResponseMetadata': {'RequestId': 'd8bfd762-2908-81eb-87b7-02279727f6d7', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-amzn-requestid': 'd8bfd762-2908-81eb-87b7-02279727f6d7', 'x-amz-id-2': 'v+TSZd3TV8cCnY6SDfaGjteeB6Z011JK8fp0Xyppgn2AJmVqzn1j2p1Ov0w1sz/dlpo1NC08gt5W3kh2J14vllkRFRFjns6v', 'date': 'Wed, 10 Jul 2024 18:29:25 GMT', 'content-type': 'application/x-amz-json-1.1', 'content-length': '110', 'connection': 'keep-alive', 'RetryAttempts': 0}}

Sent data: {'Rid': 'db31837-db78-4120-a082-feed2eac4a72', 'RName': 'Kimberly Davis', 'REmail': 'margaretlong@example.net', 'RAddress': '6334 Hughes Trail\nSouth Felicia, CT 92140', 'Rcreated_at': '2000-10-08T00:05:22'}

Kinesis response: {'ShardId': 'shardId-000000000000', 'SequenceNumber': '49653797158070387385277665275736172804931713742506295298', 'ResponseMetadata': {'RequestId': 'f550aed2-570f-3afa-aa58-7b94e928866c', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-amzn-requestid': 'f550aed2-570f-3afa-aa58-7b94e928866c', 'x-amz-id-2': 'j1lFk7CX4JKL/K3dm6s/4LzRFPUIBPX8CwqVnHeRzR4K47pQ/Xs15j030eobillEqm09AEK+qVMDaySB5AR7301l4cm5IP', 'date': 'Wed, 10 Jul 2024 18:29:26 GMT', 'content-type': 'application/x-amz-json-1.1', 'content-length': '110', 'connection': 'keep-alive', 'RetryAttempts': 0}}

Sent data: {'Rid': '47bbc9fc-3e01-43b9-becb-dd8486d88236', 'RName': 'Stanley Moreno', 'REmail': 'jsanders@example.org', 'RAddress': 'Unit 3996 Box 5745\nDPO AA 07519', 'Rcreated_at': '2007-12-02T04:41:11'}

Kinesis response: {'ShardId': 'shardId-000000000000', 'SequenceNumber': '496537971580703873852776652757373817387513283716818081474', 'ResponseMetadata': {'RequestId': 'cc75fef9-8cf7-4a2c-937d-2bb1b2d0c6ba', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-amzn-requestid': 'cc75fef9-8cf7-4a2c-937d-2bb1b2d0c6ba', 'x-amz-id-2': '7AnD9Wpq8xftc/XrDoo83i+bQ6jg0zJRdwmstWOfggaN11i5YWC5IXUC7Jtc4v36azsIfc268fT5MXhbell1zlbHDMq6', 'date': 'Wed, 10 Jul 2024 18:29:28 GMT', 'content-type': 'application/x-amz-json-1.1', 'content-length': '110', 'connection': 'keep-alive', 'RetryAttempts': 0}}

Sent data: {'Rid': 'ead0676-4c61-4bdb-b9fd-0ef91747ace', 'RName': 'Stacey Murrillo', 'REmail': 'richardcollier@example.org', 'RAddress': '180 Farmer Isle Apt. 527\nSouth Adamview, IN 98813', 'Rcreated_at': '2020-03-15T23:46:46'}

Kinesis response: {'ShardId': 'shardId-000000000000', 'SequenceNumber': '4965379715807038738527766527573859065670943069575184386', 'ResponseMetadata': {'RequestId': 'c4d17898-3853-059c-9bd9-add18674890a', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-amzn-requestid': 'c4d17898-3853-059c-9bd9-add18674890a', 'x-amz-id-2': 'jur240zgzqmspft91a5jnsVeu8SKV/zuz8PLz3RpsShQwJ1v2B8s2p/gKuYXpr131bwLsd1l0JJOX/H9hOrc4DZHM0Mezo', 'date': 'Wed, 10 Jul 2024 18:29:29 GMT', 'content-type': 'application/x-amz-json-1.1', 'content-length': '110', 'connection': 'keep-alive', 'RetryAttempts': 0}}

Sent data: {'Rid': 'b1dac958-3fe4-4c51-b8c7-57721953368e', 'RName': 'Allison Phillips', 'REmail': 'johnsonchase@example.com', 'RAddress': '47220 Wilkinson Parkway Suite 876\nLindaton, NM 22581', 'Rcreated_at': '2020-03-15T23:46:46'}

Step 9:

Executing a DynamoDB scan operation to retrieve stored data:

DynamoDB

Dashboard

Tables

Explore Items

PariQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

DAX

Clusters

Subnet groups

Parameter groups

Events

Items returned (50)

Actions

Create item

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<input type="checkbox"/>	PKId (String)	RJaddress	RJcreated_at	RJemail	RJid	RJname
<input type="checkbox"/>	3b197f57-6e95-4ee2-89f1-140e4cc7692a	016 Castro Burgs Apt. 289 Kimberlymo...	2009-10-25T06:57:50	kharris@example.net	dc8379ab-9851-4a4d-a449-b5f7...	Jessica Mccoy
<input type="checkbox"/>	d4b5ba20-4892-4efb-98de-6396d6b210fe	3341 Samuel Neck Ellisburgh, MA 65683	2005-11-06T10:50:49	vjones@example.net	922145bd-5ea8-4b67-90dd-49c...	Bonnie Watkins
<input type="checkbox"/>	ad49f127-ce33-44b6-9bde-6efc2caf34a	614 Kristina Cliff Apt. 698 Heatherbury,...	2012-11-13T21:00:50	jennifer97@example.com	16417c34-709c-4ece-9705-e62d...	Gloria Mcdaniel
<input type="checkbox"/>	24b09922-11cf-443e-8e01-2fe96f09e688	7516 Kimberly Estate Suite 372 South J...	1983-09-21T22:24:22	vwarner@example.com	7af20161-4815-4248-95b2-93be...	David Henry
<input type="checkbox"/>	310df591-73a3-4c07-ac73-b0729304e1bf	75034 Joe Walk Suite 074 Zacharyshire,...	2018-07-25T07:23:02	thompsonjames@examp...	d5fbd693-2026-40d4-ac3b-9773...	Rodney Velez
<input type="checkbox"/>	48c13726-ad49-4aa9-931b-9387b0f7a68b	0449 Matthew Islands North Mariaton, ...	1970-11-08T19:03:41	mthomas@example.com	23a7cccd-c9d2-427b-b40e-dc4b...	Laura Smith
<input type="checkbox"/>	54c93299-2107-4ab1-9676-4cda675f9b9e	0449 Matthew Islands North Mariaton, ...	1970-11-08T19:03:41	mthomas@example.com	23a7cccd-c9d2-427b-b40e-dc4b...	Laura Smith
<input type="checkbox"/>	7a166856-0161-4034-a4c8-18c3d36a55ec	122 Ramos Villages Suite 208 Lake Davi...	2023-03-18T09:35:48	justinashley@example.com	01fe106b-9f72-479e-a97b-6430...	Jacqueline Gray
<input type="checkbox"/>	7a12dfbf-146a-408c-a355-7e72198be52	USCGC Gray FPO AP 55688	1980-12-07T18:18:39	xpark@example.com	1802cbf2-7082-48ae-bbf5-235a...	Brittany Davis
<input type="checkbox"/>	3f21ef0d-e3a5-4458-907a-61f99bcf7524	528 Fox Islands Suite 692 Jameston, ID ...	2023-06-01T05:43:54	davilarobert@example.c...	3b14f040-9cdf-433b-a98b-3ddb...	Allison Harrison
<input type="checkbox"/>	16a19c20-24af-4be5-8792-8c177a21cdf5	614 Kristina Cliff Apt. 698 Heatherbury,...	2012-11-13T21:00:50	jennifer97@example.com	16417c34-709c-4ece-9705-e62d...	Gloria Mcdaniel
<input type="checkbox"/>	2f58f057-0b0d-4e6a-a848-92dc516ba5f3	398 Rachel Locks Cartenshire, MA 04882	1995-09-21T09:03:52	conleyshawn@example....	6e326b16-93ec-4c63-b12f-2e5ff...	Steven Lewis
<input type="checkbox"/>	ec83186f-7a24-41fe-bfec-6ea734dc64a9	52449 Amy Course Suite 659 East Davi...	2021-09-19T23:19:57	jessica44@example.com	04e4ab8c-3a39-4fc5-9030-b6bf...	Ronald Oliver
<input type="checkbox"/>	9b9c56f1-46be-40ac-b2fb-b35fb64f6d4d	07936 Hebert Terrace Suite 405 Port A...	2001-03-18T08:04:47	andersenjon@example....	0615bcb0-4c1c-4bd6-99b5-5651...	Jessica Nunez
<input type="checkbox"/>	b76c4cc2-e873-4b86-b9fb-61ed4fd044a6	3325 Jonathan Flat Petersonsburgh, MA ...	2013-07-24T02:25:49	jeffrey24@example.com	379c71fb-d5c1-447a-8f9a-0c8a7...	Leonard Little
<input type="checkbox"/>	5b81af43-1c53-48cc-9c97-70bb79c548c9	74174 Hopkins Underpass Suite 315 No...	1975-12-16T14:21:21	parkerdanielle@example...	b29984cc-8943-43f5-93b2-4098...	Andrew Gill
<input type="checkbox"/>	cf9184b2-54ca-4813-98e3-0c64bde44df1	65709 Boyle Island Lake James, HI 94201	1986-11-24T07:45:21	maureenstewart@exam...	5d3872e9-afb0-4ed0-8caf-6ac75...	Christopher Dunn
<input type="checkbox"/>	c0998828-dab9-490d-bcb6-3907762359ef	342 Williams Crest Suite 633 Morrisonv...	2001-06-20T07:50:12	nschmidt@example.com	0e0595f7-40a6-4e61-bc3d-acf63...	Hunter Stevenson
<input type="checkbox"/>	068a3391-8775-4b25-0b4f-551a4b8918bc	342 Williams Crest Suite 633 Morrisonv...	2001-06-20T07:50:12	nschmidt@example.com	0e0595f7-40a6-4e61-bc3d-acf63...	Hunter Stevenson