

## TASK - 2

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Location : Chennai

Real-time data processing pipeline for an e-commerce application :

The screenshot shows the AWS DynamoDB console with the 'Tables' section selected. Under the 'Orders' table, the 'DynamoDB stream details' section is displayed. It shows the Stream status as 'On', Resource-based policy as 'Not active', and the Latest stream ARN as 'arn:aws:dynamodb:ap-south-1:811572528734:table/Order\$stream/2025-11-04T16:10:41.297'. There is also a 'Trigger (0)' section with a 'Create trigger' button.

The screenshot shows the AWS Lambda console with the 'Functions' section selected. Under the 'StandardOrderProcessor' function, the 'Code source' tab is active, displaying the 'lambda\_function.py' file content:

```
1 import json
2
3 def lambda_handler(event, context):
4     # EventBridge Pipes sends a list of records
5     if isinstance(event, list):
6         records = event
7     else:
8         records = [event]
9
10    for record in records:
11        new_image = record.get('dynamodb', {}).get('NewImage', {})
12
13        order_id = new_image.get('orderId', {}).get('S')
14        status = new_image.get('status', {}).get('S')
```

The right side of the screen features a 'Tutorials' sidebar with a 'Create a simple web app' section and a 'Start tutorial' button.

PremiumOrderProcessor | Function

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/lambda/home?region=ap-south-1#functions/PremiumOrderProcessor?tab=code

Lambda > Functions > PremiumOrderProcessor

Code Test Monitor Configuration Aliases Versions

Code source Info

Open in Visual Studio Code Upload from

EXPLORER PREMIUMORDERPROCESSOR lambda\_function.py

DEPLOY Deploy (Ctrl+Shift+U) Test (Ctrl+Shift+I)

lambda\_function.py

```
import json

def lambda_handler(event, context):
    premium_orders = []
    if isinstance(event, list):
        records = event
    else:
        records = [event]

    for record in records:
        dynamodb = record.get('dynamodb', {})
        new = dynamodb.get('NewImage', {})
        old = dynamodb.get('OldImage', {})
```

Learn how to implement common use cases in AWS Lambda.

Create a simple web app

In this tutorial you will learn how to:

- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

Learn more Start tutorial

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Items | Amazon DynamoDB Manager

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/dynamodbv2/home?region=ap-south-1#item-explorer?maximize=true&table=Orders

DynamoDB Explore items Orders

Completed - Items returned: 5 - Items scanned: 5 - Efficiency: 100% - RCU's consumed: 2

Table: Orders - Items returned (5)

Scan started on November 06, 2025, 14:03:16

orderId (String)	amount	createdAt	customerEmail
ORDER101	1500	2025-11-0...	new@example.c...
ORDER301	2000	2025-11-0...	vip@example.com
ORDER201	250	2025-11-0...	user@example.c...
ORDER103	250	2025-11-0...	qa@test.com
ORDER102	75	2025-11-0...	low@example.c...

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Amazon EventBridge | ap-south-1

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/events/home?region=ap-south-1#/pipe/OrdersStandardPipe

aws Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

Amazon EventBridge > Pipes > OrdersStandardPipe

**OrdersStandardPipe**

**Details** Info

Name: OrdersStandardPipe Status: Running Created on: Nov 5, 2025, 11:43 AM GMT+5:30

Description: No records processed Status reason: Last modified on: Nov 5, 2025, 11:43 AM GMT+5:30

ARN: arn:aws:pipes:ap-south-1:811572528734:pipe/OrdersStandardPipe

**Pipe Components** Info

```
graph LR; Source[Source: DynamoDB Stream] --> Filtering[Filtering: Lambda]; Filtering --> Target[Target: Lambda function]
```

Source: Required DynamoDB Stream → Filtering: Optional Added → Target: Required Lambda function

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Amazon EventBridge | ap-south-1

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/events/home?region=ap-south-1#/pipe/OrdersStandardPipe

aws Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

Amazon EventBridge > Pipes > OrdersStandardPipe

**Execution Role**: service-role/Amazon\_EventBridge\_Pipe\_Execution\_5e43548e

**Retry policy and Dead-letter queue (DLQ)**

Dead-Letter Queue: orders-standard-dlq SQS Queue

SQS Queue ARN: arn:aws:sqs:ap-south-1:811572528734:orders-standard-dlq

Retry Policy: Retry attempts: -1 attempts Maximum Age of Event: 59m

**CloudWatch logs** Info

Log destination: CloudWatch logs CloudWatch log group: /aws/vendedlogs/pipes/OrdersStandardPipe

Log level: ERROR ARN: arn:aws:logs:ap-south-1:811572528734:log-group:/aws/vendedlogs/pipes/OrdersStandardPipe

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Amazon EventBridge | ap-south-1 | Log Groups | CloudWatch | ap-south-1 | +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/events/home?region=ap-south-1#/pipe/OrdersPremiumPipe

AWS Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

Amazon EventBridge > Pipes > OrdersPremiumPipe

OrdersPremiumPipe

Details Info

Name: OrdersPremiumPipe Status: Running Created on: Nov 5, 2025, 11:51 AM GMT+5:30

Description: No records processed Last modified on: Nov 5, 2025, 11:55 AM GMT+5:30

ARN: arn:aws:pipes:ap-south-1:811572528734:pipe/OrdersPremiumPipe

Pipe Components Info

Source Required DynamoDB Stream → Filtering Optional Added → Target Required Lambda function

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Amazon EventBridge | ap-south-1 | Log Groups | CloudWatch | ap-south-1 | +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/events/home?region=ap-south-1#/pipe/OrdersPremiumPipe

AWS Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

Amazon EventBridge > Pipes > OrdersPremiumPipe

Settings Encryption Monitoring Tags

Permissions

Execution Role: service-role/Amazon\_EventBridge\_Pipe\_Execution\_f466cabd

Retry policy and Dead-letter queue (DLQ)

Dead-Letter Queue: orders-premium-dlq

SQS Queue: arn:aws:sqs:ap-south-1:811572528734:orders-premium-dlq

Retry Policy: Retry attempts: -1 attempts Maximum Age of Event: 59m

CloudWatch logs Info

Log destination: CloudWatch log group

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Queue details | Simple Queue Service | Log Groups | CloudWatch | ap-south-1 | +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/sqs/v3/home?region=ap-south-1#/queues/https%3A%2F%2Fsqs.ap-south-1.amazonaws.com%2F811572528734%2Forders-standard-dlq

AWS Account ID: 8115-7252-8734 root

Amazon SQS > Queues > orders-standard-dlq

## orders-standard-dlq

Edit Delete Purge Send and receive messages Start DLQ redrive

**Details** Info

Name orders-standard-dlq	Type Standard	ARN arn:aws:sqs:ap-south-1:811572528734:orders-standard-dlq
Encryption Amazon SQS key (SSE-SQS)	URL <a href="https://sqs.ap-south-1.amazonaws.com/811572528734/orders-standard-dlq">https://sqs.ap-south-1.amazonaws.com/811572528734/orders-standard-dlq</a>	Dead-letter queue -

More

Queue policies Monitoring SNS subscriptions Lambda triggers EventBridge Pipes Dead-letter queue Tagging Encryption

Access policy Edit

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Queue details | Simple Queue Service | Log Groups | CloudWatch | ap-south-1 | +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/sqs/v3/home?region=ap-south-1#/queues/https%3A%2F%2Fsqs.ap-south-1.amazonaws.com%2F811572528734%2Forders-premium-dlq

AWS Account ID: 8115-7252-8734 root

Amazon SQS > Queues > orders-premium-dlq

## orders-premium-dlq

Edit Delete Purge Send and receive messages Start DLQ redrive

**Details** Info

Name orders-premium-dlq	Type Standard	ARN arn:aws:sqs:ap-south-1:811572528734:orders-premium-dlq
Encryption Amazon SQS key (SSE-SQS)	URL <a href="https://sqs.ap-south-1.amazonaws.com/811572528734/orders-premium-dlq">https://sqs.ap-south-1.amazonaws.com/811572528734/orders-premium-dlq</a>	Dead-letter queue -

More

Queue policies Monitoring SNS subscriptions Lambda triggers EventBridge Pipes Dead-letter queue Tagging Encryption

Access policy Edit

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Queue details | Simple Queue Set X CloudWatch | ap-south-1 X +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/cloudwatch/home?region=ap-south-1#logsV2:log-groups/log-group/\$252Faws\$252Fla...

aws Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

CloudWatch > Log groups /aws/lambda/StandardOrderProcessor

**CloudWatch**

Creation time 1 day ago

Retention Never expire

Stored bytes 1.32 KB

KMS key ID -

Anomaly detection Configure

Transformer Configure

Log streams Tags Anomaly detection Metric filters Subscription filters Contributor Insights Data

**Log streams (1)**

By default, we only load the most recent log streams.

Filter log streams or try prefix search Exact match Show expired Info

Log stream Last event time

2025/11/05/[\$LATEST]e8b5d4ad2f9f4df0ac47045f4cec8f55 2025-11-05 06:32:06 (UTC)

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Queue details | Simple Queue Set X CloudWatch | ap-south-1 X +

https://811572528734-24owxvph.ap-south-1.console.aws.amazon.com/cloudwatch/home?region=ap-south-1#logsV2:log-groups/log-group/\$252Faws\$252Fla...

aws Search [Alt+S] Account ID: 8115-7252-8734 root Asia Pacific (Mumbai)

CloudWatch > Log groups /aws/lambda/StandardOrderProcessor > 2025/11/05/[\$LATEST]e8b5d4ad2f9f4df0ac47045f4cec8f55

**CloudWatch**

Favorites and recents

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

Filter events - press enter to search Actions Start tailing Create metric filter

Display

Timestamp Message

2025-11-05T06:30:11.313Z INIT\_START Runtime Version: python:3.12.v80 Runtime Version ARN: arn:aws:lambda:ap-south-1::runtime:644f...

2025-11-05T06:30:11.409Z START RequestId: efdba8a3-2b5f-4c54-ac32-4713f2f7c949 Version: \$LATEST

2025-11-05T06:30:11.410Z Processing order ORDER201 | Status=pending | Amount=250.0 | Email=user@example.com

2025-11-05T06:30:11.411Z END RequestId: efdba8a3-2b5f-4c54-ac32-4713f2f7c949

2025-11-05T06:30:11.411Z REPORT RequestId: efdba8a3-2b5f-4c54-ac32-4713f2f7c949 Duration: 2.07 ms Billed Duration: 95 ms Memory S...

2025-11-05T06:30:51.100Z START RequestId: 86cd2504-b27e-4a5d-ac97-b3184e73e6f4 Version: \$LATEST

2025-11-05T06:30:51.101Z Processing order ORDER301 | Status=pending | Amount=2000.0 | Email=vip@example.com

2025-11-05T06:30:51.102Z END RequestId: 86cd2504-b27e-4a5d-ac97-b3184e73e6f4

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Queue details | Simple Queue Service | CloudWatch | ap-south-1

https://811572528734-24owvxph.ap-south-1.console.aws.amazon.com/cloudwatch/home?region=ap-south-1#logsV2:log-groups/log-group/\$252Faws\$252Fla...

CloudWatch Log groups /aws/lambda/PremiumOrderProcessor

**CloudWatch**

- Favorites and recents
- Dashboards
- AI Operations
- Alarms
- Logs
- Log groups
- Log Anomalies
- Live Tail
- Logs Insights
- Contributor Insights
- Metrics
- Application Signals

**Log streams**

Creation time: 1 day ago

Retention: Never expire

Stored bytes: 541.bytes

KMS key ID: -

Anomaly detection: Configure

Transformer: Configure

Log streams (1)

Default, we only load the most recent log streams.

Filter log streams or try prefix search

Exact match Show expired Info

Last event time: 2025-11-05 06:32:07 (UTC)

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Queue details | Simple Queue Service | CloudWatch | ap-south-1

https://811572528734-24owvxph.ap-south-1.console.aws.amazon.com/cloudwatch/home?region=ap-south-1#logsV2:log-groups/log-group/\$252Faws\$252Fla...

CloudWatch Log groups /aws/lambda/PremiumOrderProcessor > 2025/11/05/[\$LATEST]fd98addf93424abf9e1b3c922ea56a49

**CloudWatch**

- Favorites and recents
- Dashboards
- AI Operations
- Alarms
- Logs
- Log groups
- Log Anomalies
- Live Tail
- Logs Insights
- Contributor Insights
- Metrics
- Application Signals

**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

Filter events - press enter to search

1m 1h UTC timezone

Display

Timestamp	Message
2025-11-05T06:32:07.285Z	INIT_START Runtime Version: python:3.12.v89 Runtime Version ARN: arn:aws:lambda:ap-south-1::runtime:644f99...
2025-11-05T06:32:07.375Z	START RequestId: a3711b97-42b9-456b-8071-edb04cc59c74 Version: \$LATEST
2025-11-05T06:32:07.376Z	Premium order shipped! Order ID: ORDER301   Amount=2000.0
2025-11-05T06:32:07.381Z	END RequestId: a3711b97-42b9-456b-8071-edb04cc59c74
2025-11-05T06:32:07.381Z	REPORT RequestId: a3711b97-42b9-456b-8071-edb04cc59c74 Duration: 2.38 ms Billed Duration: 89 ms Memory Siz...

No newer events at this moment. Auto retry paused. Resume

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