

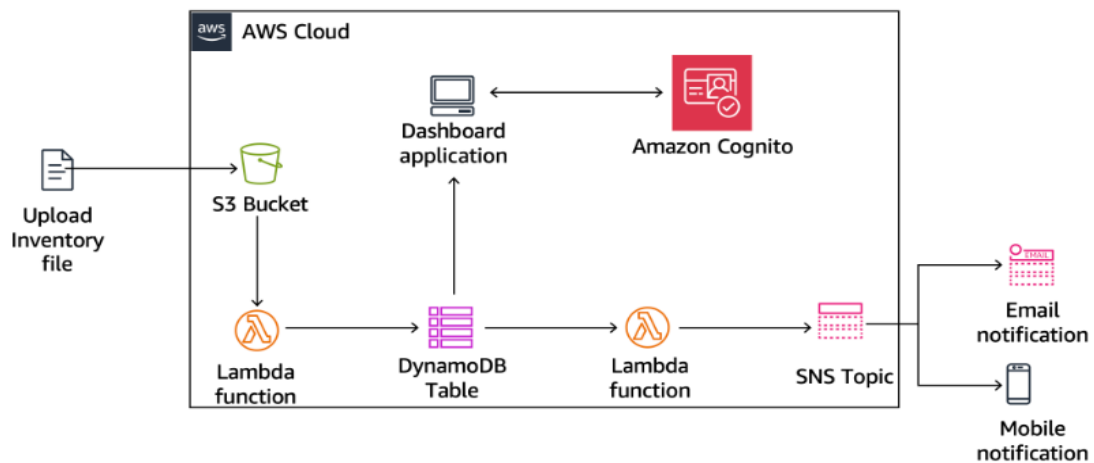
1- Architecture Overview

step 1 : Upload an inventory file to an S3 bucket.

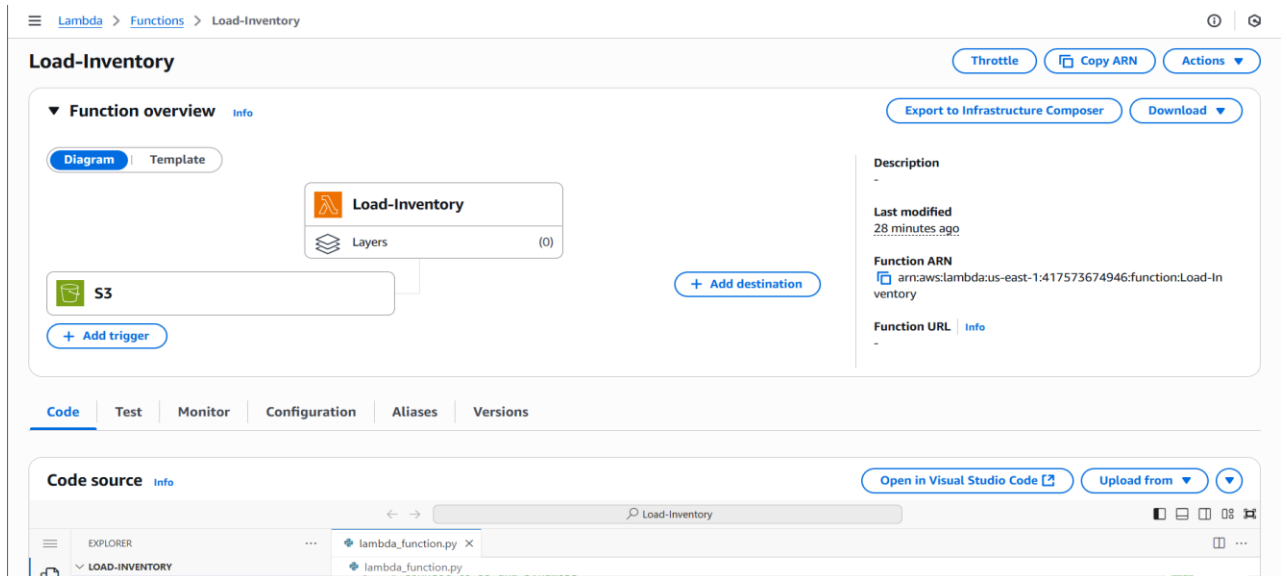
step 2 : An Amazon S3 upload event calls the Lambda function.

step 3 : The Lambda function insert items into the DynamoDB table.

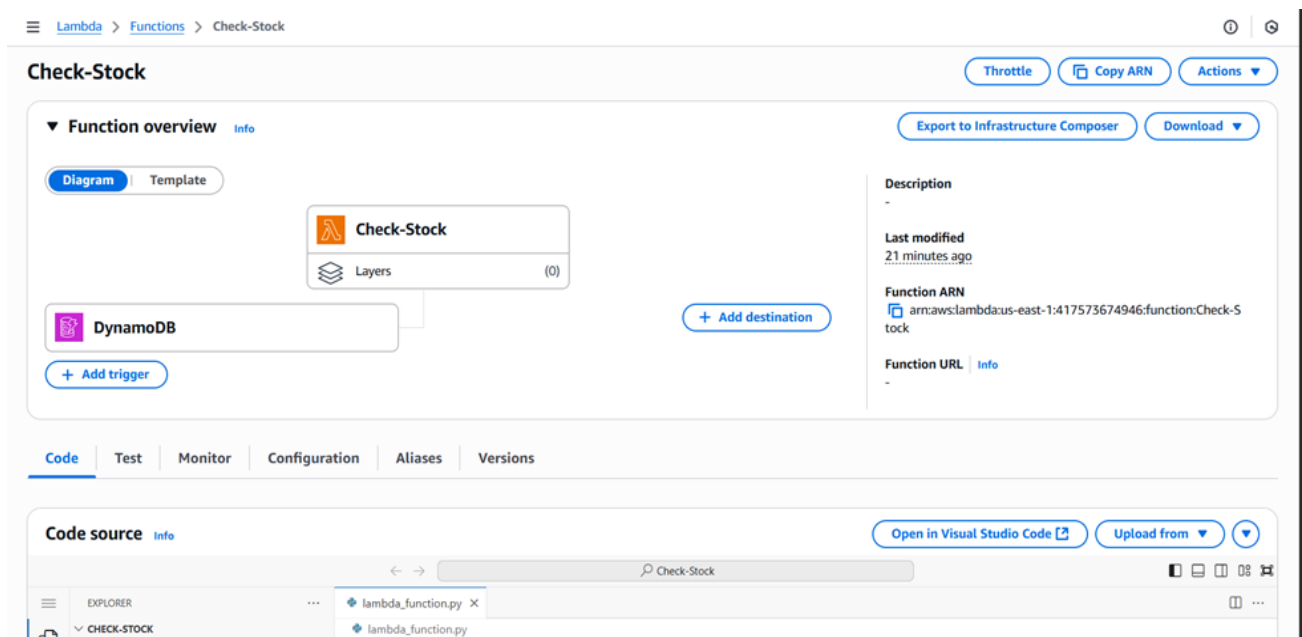
step 4 : The next Lambda function is invoked through Amazon DynamoDB Streams when the record is inserted. If no inventory is found, a notification is sent to an SNS topic.



2-Create lambda function that reads the file and inserts information into a DynamoDB table and give it IAM role This role gives the Lambda function permission to access Amazon S3 and DynamoDB.



3- Create another Lambda function that looks at inventory while it is loaded into the DynamoDB table. If the Lambda function notices that an item is out of stock, it sends a notification through the SNS topic that you created earlier.



4- create SNS Topic and subscribe to the topic .

The screenshot displays the Amazon SNS console interface. On the left, the navigation menu includes 'Amazon SNS', 'Topics', 'Subscriptions', and 'Mobile'. The main content area shows the details for a topic named 'NoStock'. A blue banner at the top indicates a new feature: 'Amazon SNS now supports High Throughput FIFO topics. Learn more'. Below this, the 'Details' section shows the topic's name, ARN, type (Standard), and owner. The 'Subscriptions' tab is active, showing a single subscription with ID 'a4f96bf8-b704-4632-844a-4fc5...', endpoint 'omar07alaaa@gmail.com', status 'Confirmed', and protocol 'EMAIL'. Buttons for 'Edit', 'Delete', 'Request confirmation', 'Confirm subscription', and 'Create subscription' are visible.

Amazon SNS > **Topics** > **NoStock**

New Feature
Amazon SNS now supports High Throughput FIFO topics. [Learn more](#)

NoStock [Edit] [Delete] [Publish message]

Details

Name NoStock	Display name -
ARN arn:aws:sns:us-east-1:417573674946:NoStock	Topic owner 417573674946
Type Standard	

Subscriptions | Access policy | Data protection policy | Delivery policy (HTTP/S) | Delivery status logging | Encryption

Subscriptions (1) [Edit] [Delete] [Request confirmation] [Confirm subscription] [Create subscription]

Search

ID	Endpoint	Status	Protocol
a4f96bf8-b704-4632-844a-4fc5...	omar07alaaa@gmail.com	Confirmed	EMAIL

5- After uploading an inventory file to Amazon S3, which invokes the original Load-Inventory function. This function loads data into DynamoDB, which then invokes the new Check-Stock Lambda function. If the Lambda function detects an item with zero inventory, it sends a message to Amazon SNS. Then, Amazon SNS notifies you through SMS or email.

- upload an inventory file

Amazon S3 > Buckets > inventory-010933

inventory-010933 Info

Objects (1/1)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix

<input checked="" type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input checked="" type="checkbox"/>	inventory-calcutta.csv	csv	August 21, 2025, 19:27:00 (UTC+03:00)	150.0 B	Standard

- data loaded into dynamdb table

DynamoDB > Explore items > Inventory

DynamoDB

- Dashboard
- Tables
- Explore items
- PartiQL editor
- Backups
- Exports to S3
- Imports from S3
- Integrations
- Reserved capacity
- Settings

▼ DAX

- Clusters
- Subnet groups
- Parameter groups
- Events

Filters - optional

Run Reset

Completed · Items returned: 6 · Items scanned: 6 · Efficiency: 100% · RCUs consumed: 0.5

Table: Inventory - Items returned (6)

Scan started on August 21, 2025, 19:33:04

<input type="checkbox"/>	Store (String)	Item (String)	Count
<input type="checkbox"/>	Calcutta	Amazon Tap	15
<input type="checkbox"/>	Calcutta	Echo (2nd Gen)	0
<input type="checkbox"/>	Calcutta	Echo Dot	7
<input type="checkbox"/>	Calcutta	Echo Look	3
<input type="checkbox"/>	Calcutta	Echo Plus	16
<input type="checkbox"/>	Calcutta	Echo Show	14

- Amazon SNS sends notification through email notifies you that item out of stock .

