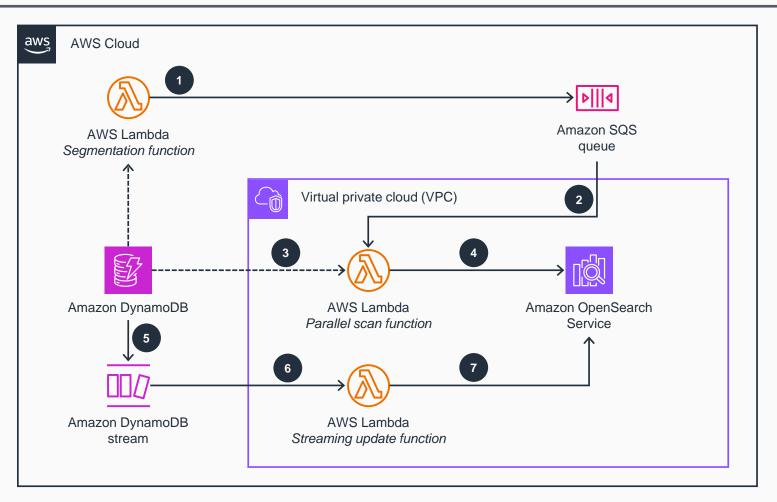# Guidance for Real-Time Text Search Using Amazon OpenSearch Service

This architecture diagram shows how to load and stream data from an Amazon DynamoDB table to Amazon OpenSearch Service to support real-time, open-ended searching and filtering.

Initial Load

1 To process existing data, an **AWS Lambda** function is invoked to describe the **Amazon DynamoDB** table and split it into a number of segments based on the returned item count. The function writes one message to an **Amazon Simple Queue Service (Amazon SQS)** queue for each segment number.

2 **Amazon SQS** acts as an event source for **Lambda**. **Lambda** will invoke functions from messages in the queue and process segments of the **DynamoDB** table in parallel.

3 The **Lambda** function uses a parallel scan to read the segment of the **DynamoDB** table listed in the source event from **Amazon SQS**.

4 The function then writes the data retrieved from **DynamoDB** into **Amazon OpenSearch Service** in batches through the bulk-create operation.

Streaming Changes

5 Insert or update items in **DynamoDB** to invoke capture by **DynamoDB** streams.

6 **DynamoDB** streams send item-level modifications captured from **DynamoDB** to the **Lambda** streaming update function.

7 The **Lambda** function writes that data in batches to **OpenSearch Service** through the bulk index operation. Track ingested documents with the *SearchableDocuments* metric in **Amazon CloudWatch**.

AWS Reference Architecture