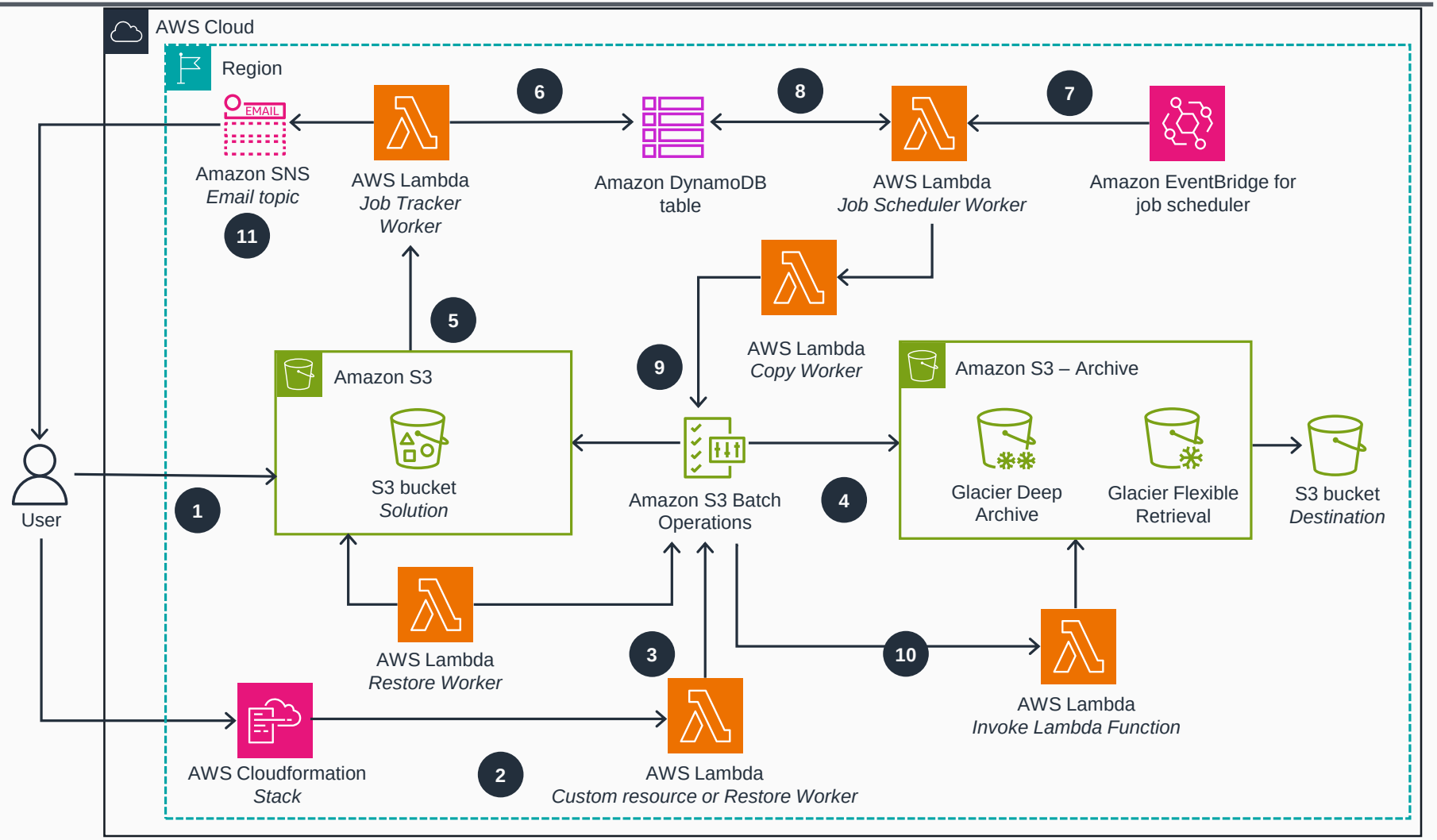
Guidance for Automated Restore and Copy for Amazon S3 Glacier Objects

Amazon S3 Batch Operations copy

This architecture diagram shows the automated archive restore workflow when Amazon S3 Batch Operations is used to drive objects.



1. Allow the **AWS CloudFormation** stack to automate manifest generation or upload a manifest of archived objects to the **Amazon Simple Storage Service (Amazon S3)** bucket.
2. The Stack or CSV upload invokes the *Custom Resource* or *Restore Worker* **AWS Lambda** function.
3. The *Restore Worker* **Lambda** function submits a Restore Operation job to **Amazon S3 Batch Operations**.
4. **Amazon S3 Batch Operations** initiates object restore in the **S3** bucket containing the archived objects.
5. The **Amazon S3 Batch Operations** completion report invokes the *Job Tracker Worker* **Lambda** function.
6. The *Job Tracker Worker* **Lambda** function creates an entry in the **Amazon DynamoDB** table with the restore details.
7. **Amazon EventBridge** invokes the *Job Scheduler Worker* **Lambda** function on a schedule.
8. The *Job Scheduler Worker* **Lambda** function queries the state table to determine the status of each restore job and when it is eligible for a copy job.
9. The *Job Scheduler Worker* **Lambda** function invokes the *Copy Worker* **Lambda** function to submit **Amazon S3 Batch Operations** and invoke the **Lambda** function job.
10. **Amazon S3 Batch Operations** invokes a **Lambda** function that performs the actual copy operation to the destination **S3** bucket.
11. The **Amazon S3 Batch Operations** report invokes the *Job Tracker Worker* **Lambda** function to send an **Amazon Simple Notification Service (Amazon SNS)** message to the user stating that the **Amazon S3 Batch Operations** Copy Job is completed.

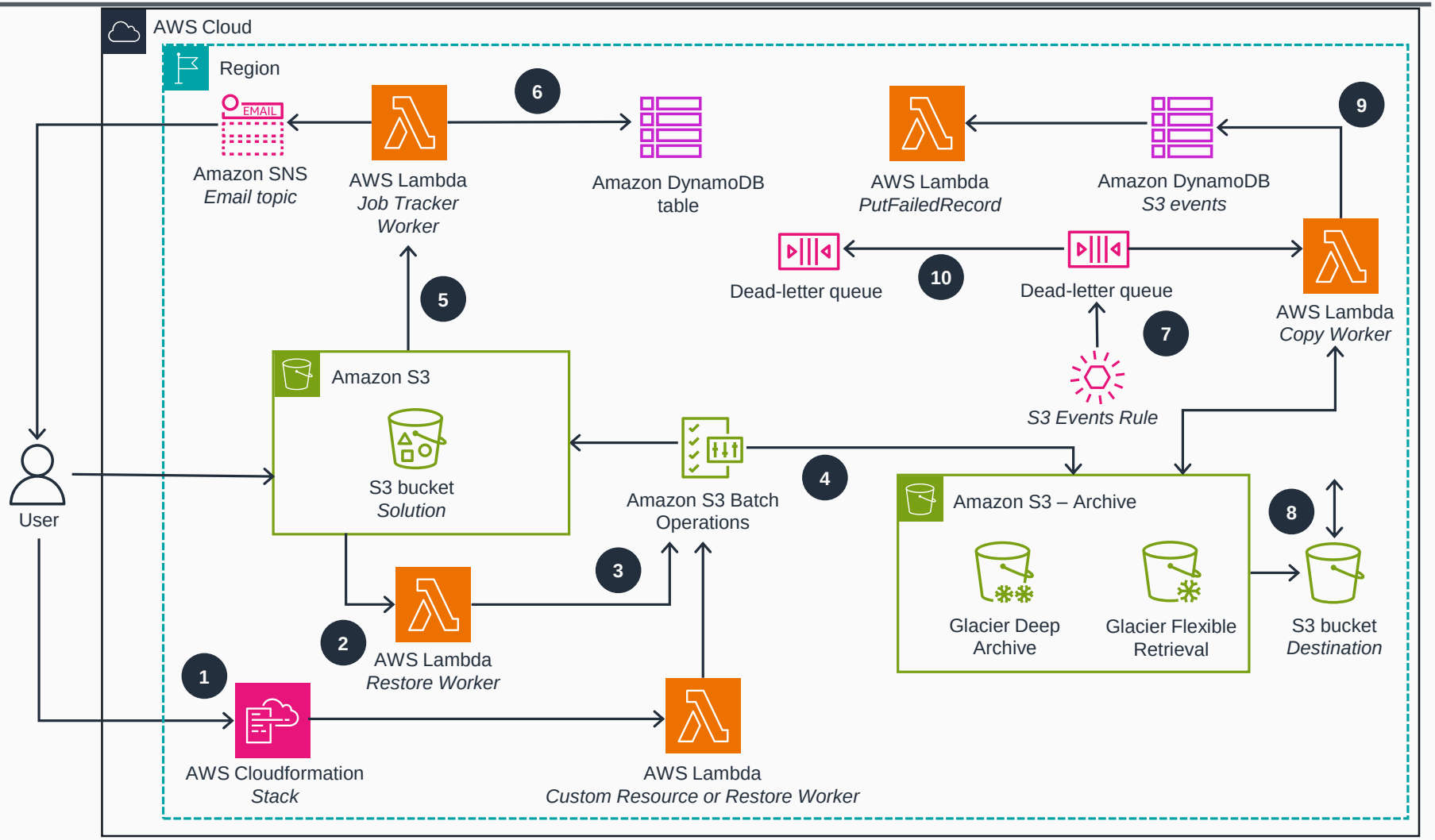
Reviewed for technical accuracy June 5, 2025

AWS Reference Architecture

Guidance for Automated Restore and Copy for Amazon S3 Glacier Objects

Event-driven copy

This architecture diagram shows the automated archive restore workflow when Amazon S3 event notifications are used to drive object copy.



1. Allow the **CloudFormation** stack to automate manifest generation or upload a manifest of archived objects to the **S3** bucket.
2. The Stack or CSV upload invokes the *Custom Resource* or *Restore Worker* **Lambda** function.
3. The *Restore Worker* **Lambda** function submits a Restore Operation job to **Amazon S3 Batch Operations**.
4. **Amazon S3 Batch Operations** initiates object restore in the **S3** bucket containing the archived objects.
5. The **Amazon S3 Batch Operations** completion report invokes the *Job Tracker Worker* **Lambda** function.
6. The *Job Tracker Worker* **Lambda** function creates an entry in the **DynamoDB** table with the restore details.
7. **EventBridge** sends *ObjectRestoreComplete* **Amazon S3** events to the **Amazon Simple Queue Service (Amazon SQS)** queue.
8. The queue triggers a *Copy* **Lambda** function that performs object copy between the archive **S3** bucket and the destination **S3** buckets.
9. The *Copy* **Lambda** function inserts a copy status record for each invocation in the *Events* **DynamoDB table**. The records include objects successfully copied or objects that fail to copy due to **Amazon S3** Client errors, such as access denied
10. Restore event records with failed function invocations, such as **Lambda** timeout or throttling, are sent to the dead-letter queue. The *PutFailedRecord* **Lambda** function inserts the records in the *Events* **DynamoDB** table.

Reviewed for technical accuracy June 5, 2025

AWS Reference Architecture