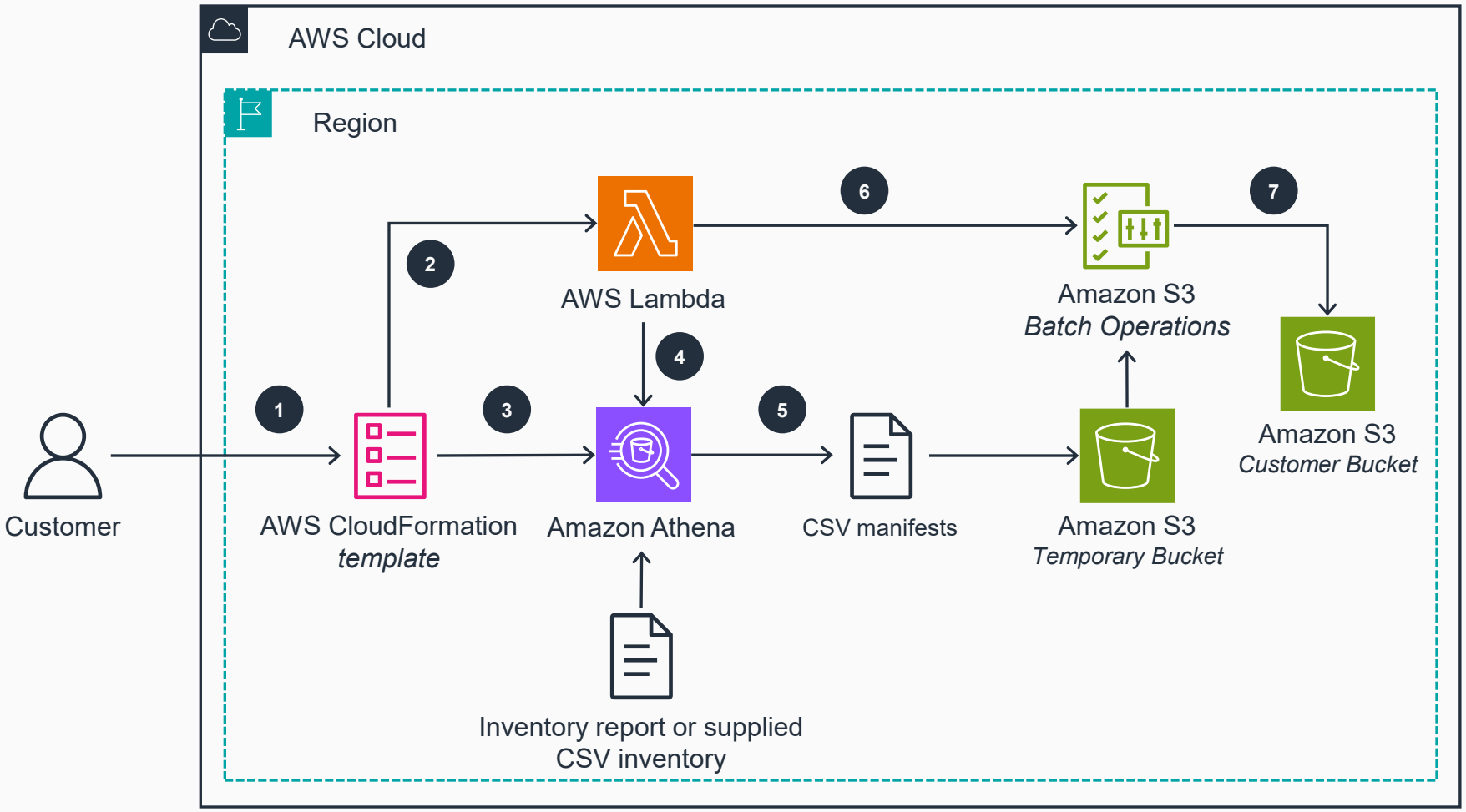
Guidance for Rolling Back Changes to Datasets Using Amazon S3

This architecture diagram shows how Amazon S3 rollback manifests are generated using Amazon Athena and executed by S3 Batch Operations, orchestrated by AWS Lambda.



1. Deploy **Amazon Simple Storage Service (Amazon S3)** Rollback **AWS CloudFormation** template, specifying bucket to restore, and the desired point in time to restore to.
2. **AWS Lambda** functions check compatibility and pre-requisites for the tool.
3. **AWS CloudFormation** creates **Amazon Athena** queries.
4. **AWS Lambda** function orchestrates execution of the **Amazon Athena** queries that identify what actions need to be taken on objects.
5. **Amazon Athena** delivers results of queries as CSV manifests to temporary **Amazon S3** bucket.
6. **AWS Lambda *function*** creates **Amazon S3** Batch Operations using newly created CSV manifests.
7. **Amazon S3** Batch Operations runs jobs to return bucket to state at a specified point in time, which might invoke **AWS Lambda** functions.

   Amazon S3 Rollback can detect and revert 1 million changes, in a bucket containing 10 billion objects, in under 1 hour, or 100 million changes in under 15 hours.

   It can also revert a few thousand changes in a smaller bucket (up to millions of objects) in under 15 minutes end-to-end, including near real-time inventory creation.

Reviewed for technical accuracy October 29, 2025

AWS Reference Architecture