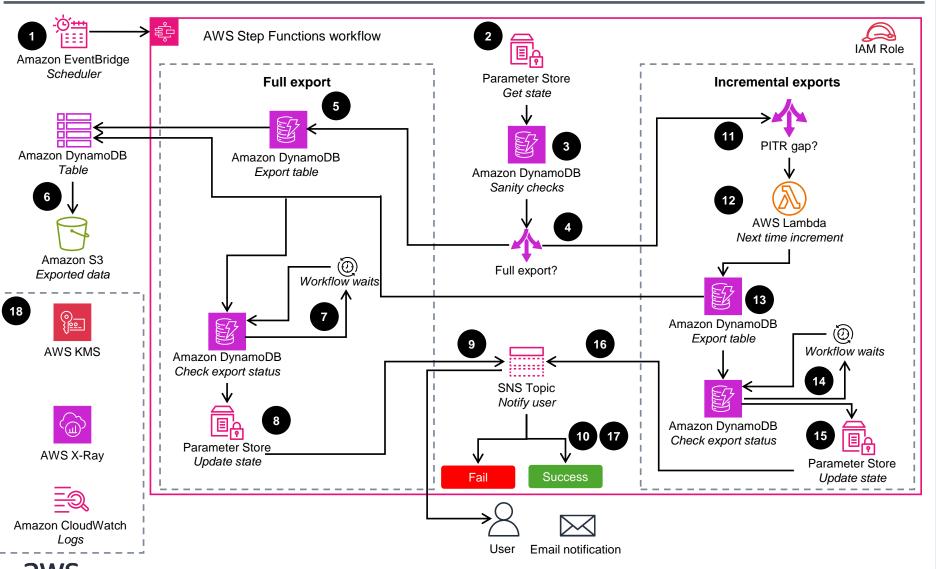
Guidance for Incremental Data Exports from Amazon DynamoDB to Amazon S3

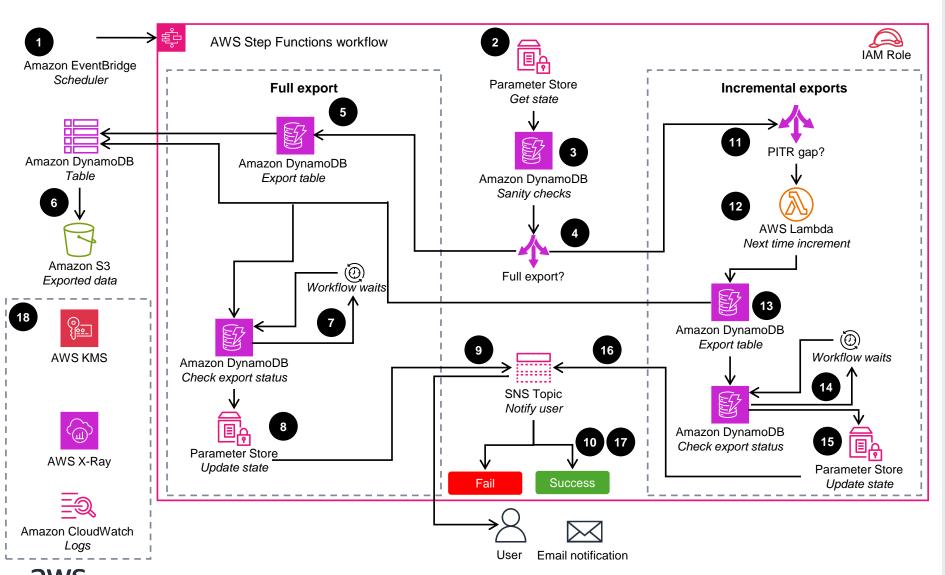
This architecture diagram demonstrates a serverless workflow to achieve continuous data exports from Amazon DynamoDB to Amazon Simple Storage Service (Amazon S3) using the DynamoDB incremental exports feature. It consists of 18 steps, with 1-10 shown here and 11-18 on the next slide.



- The Amazon EventBridge Scheduler is configured to execute at a frequency exceeding the required export window with the capability to catch up on any missed exports if necessary.
- The AWS Step Functions workflow is initialized by retrieving the current state information from the AWS Systems Manager Parameter Store. This allows for the execution of state-specific actions, such as handling a paused workflow scenario.
- Perform any necessary sanity checks, such as verifying the existence of the table and confirming that point-in-time recovery (PITR) is enabled.
- The state information is evaluated to determine if a full export is required for the capture of the complete dataset from the table as the initial step.
- To initiate the export of the table, the workflow invokes the **Amazon DynamoDB** API.
- The export operation starts writing the data, along with the associated manifest and summary, to the specified **Amazon Simple Storage Service** (Amazon S3) bucket and prefix.
- The workflow pauses execution and waits for the full export operation to complete before proceeding to the next step. Additional validation checks can be performed at this stage to confirm whether the full export was successfully executed.
- State information is written to the Parameter Store to record the outcome.
- A notification is sent to the end user through an Amazon Simple Notification Service (Amazon SNS) topic.
- The workflow execution concludes, terminating in either a successful or failed state.

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Steps 11-18



- The incremental export operation first verifies that PITR has remained continuously enabled since the completion of the full export. If PITR is disabled at any point, the PITR history is wiped, resulting in a gap in the data.
- The incremental export operation requires two time values. The start time value is passed as input to an **AWS Lambda** function, along with the desired export window. The **Lambda** function then returns the end time value, as well as any other necessary information.
- The workflow invokes the **DynamoDB** API to export the table with extra parameters as required by the incremental export API. This is then followed by a similar flow as before: the exported data is written to the **Amazon S3** bucket.
- The workflow waits for the incremental export to finish before moving to the next step. More checks can be executed here to check whether the incremental export completed successfully or not.
- State information is written to the Parameter Store to record the outcome of the operation.
- A notification is sent to the end user through an **Amazon SNS** topic.
- The workflow execution concludes, terminating in either a successful or failed state.
- AWS Key Management Service (AWS KMS), AWS X-Ray, and Amazon CloudWatch Logs are used to provide encryption keys, traceability, and logging capabilities, respectively.