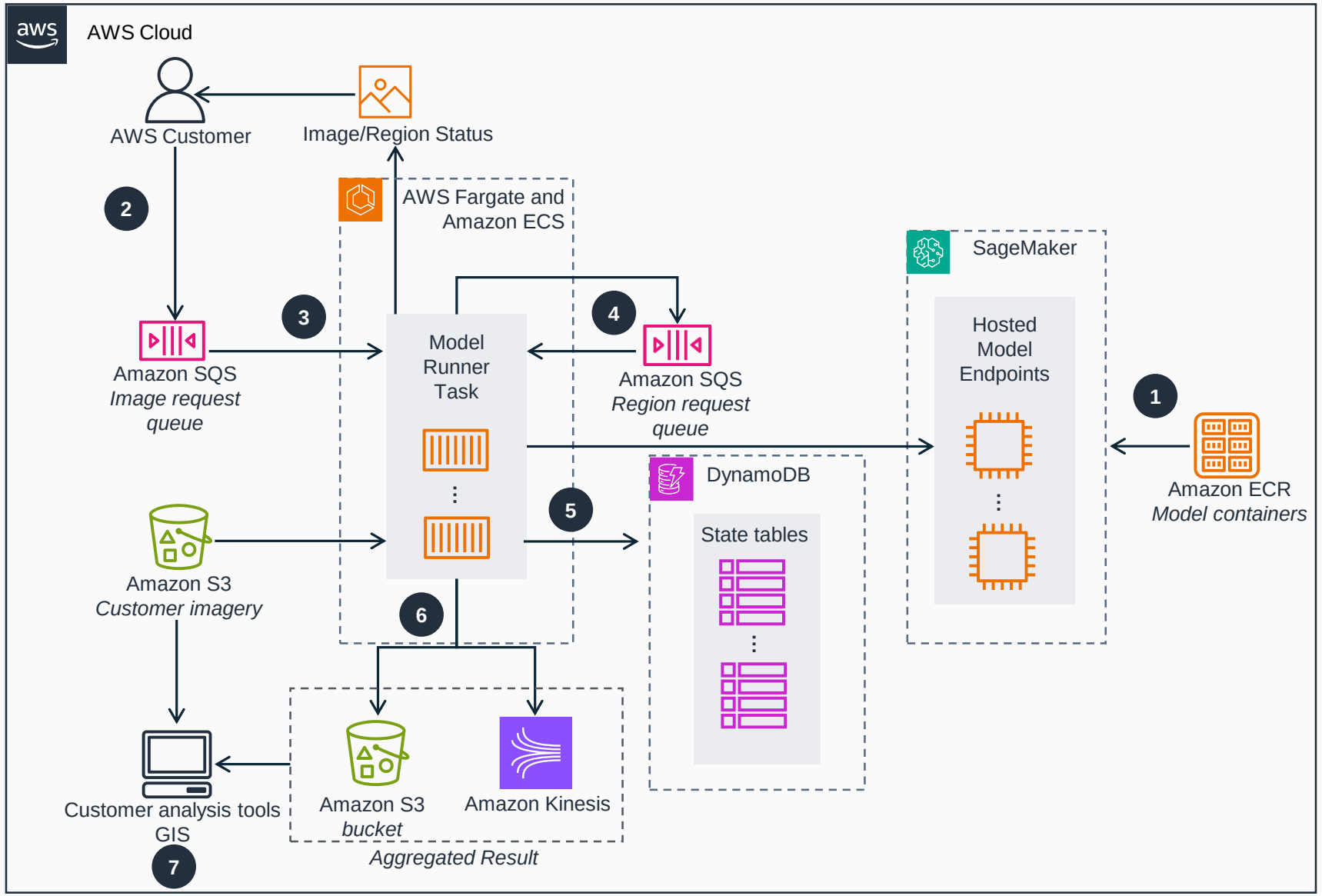
Guidance for Processing Overhead Imagery on AWS

This architecture diagram shows how to implement scalable image processing and object detection using machine learning for analysis of remote sensing imagery.



1. The **AWS Cloud Development Kit** (AWS CDK) enables the deployment and management of custom models into AWS customer environments through **Amazon SageMaker** hosted model endpoints.
2. The AWS customer submits an image request to the *image request queue* with **Amazon Simple Queue Service** (Amazon SQS).
3. The *model runner task* retrieves the image request from the *image request queue*.
4. The *model runner task* queues image Regions into the *Region request queue.*
5. The *model runner task* generates tiles, invokes models, and stores results in *state tables* in **Amazon DynamoDB**.
6. The *model runner task* aggregates, encodes, and outputs results to **Amazon Simple Storage Service** (Amazon S3) and **Amazon Kinesis**.
7. The AWS customer or data analysts can access and review the aggregated results, including those from Geographic Information Systems (GIS).

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AWS Reference Architecture