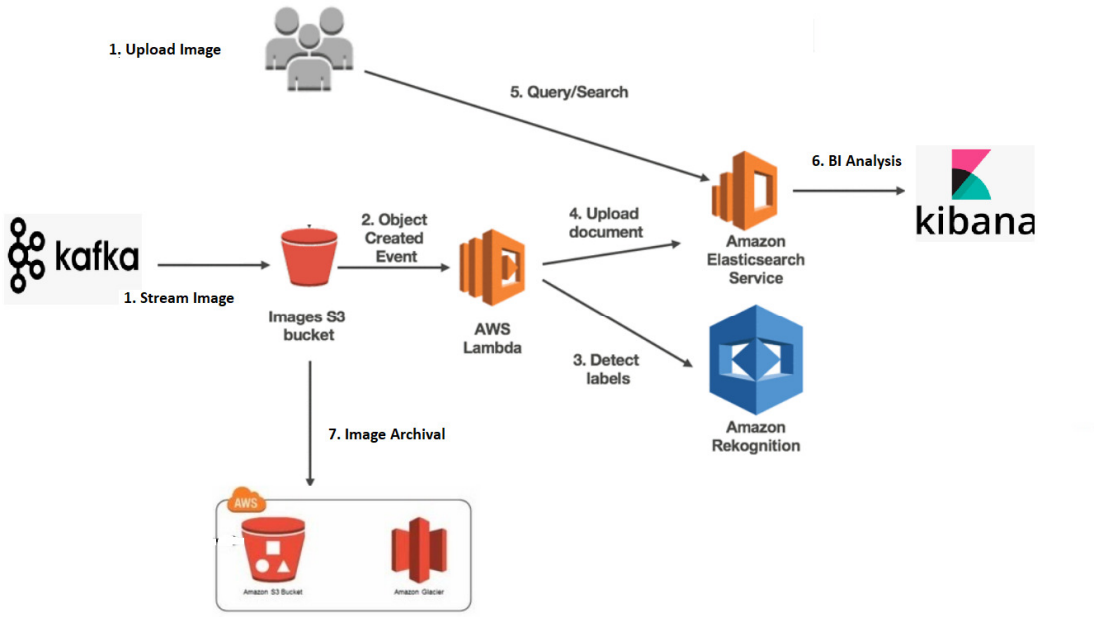
Architecture Diagram for Image Processing



Assumptions :

a) AWS is used because is widely adopted and also the team have the skillset
b) All the cloud services running on private network setup
c) POC and load testing are done and can meet the project budget
d) The proposed solution can meet project timeline
e) Architecture design can meet the business use cases or end user requirements
f) Kibana is the only BI tool use by the company so that we don't introduce additional BI tool and there will be challenge to maintain additional BI tools

This is how it works:

1. The user uploads an image to the images bucket via web application. After uploading the images, Kafka will stream the images to AWS S3 bucket.
2. The images bucket is configured to invoke a Lambda function when a new image is uploaded or deleted.
3. The Lambda function calls Rekognition to detect the labels for the image.
4. The Lambda function saves the Rekognition labels to an Amazon ES domain index. If the image already exists, the function updates the labels in the Amazon ES domain index. If the image was deleted from the images bucket then the Lambda function removes all entries for that image in the Amazon ES domain index.
5. Users can look up the labels for the uploaded image in the OpenSearch index via web application.
6. The company would also want to be able to have some Business Intelligence (BI) on key statistics including number and type of images processed, and by which customers.
7. The company would like to save processed images for a minimum of 7 days for archival purposes.