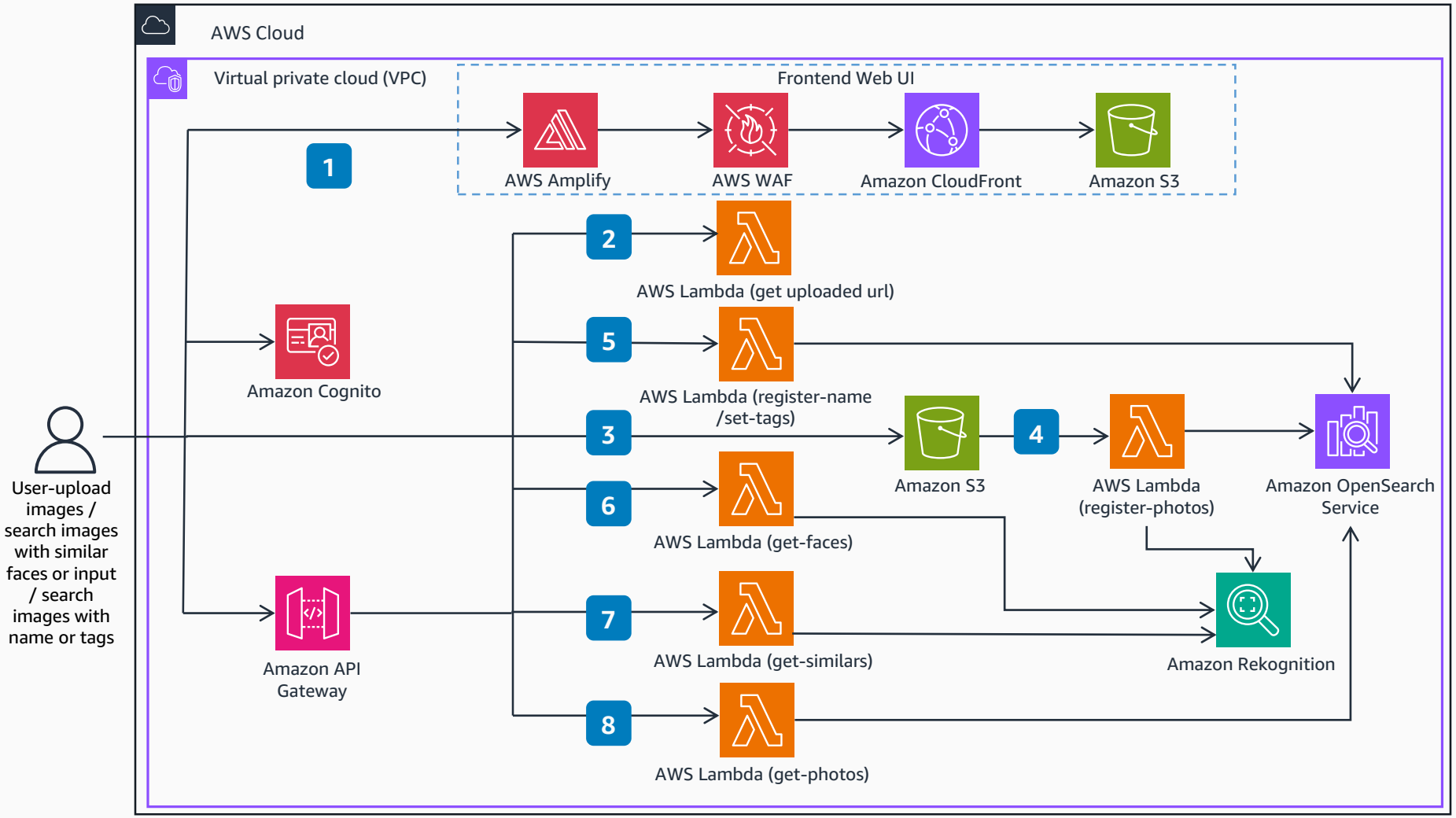
Guidance for Photo Search on AWS

This architecture shows a robust automated registration method that catalogs millions of photos and implements search capabilities. This method can help you identify photos containing distinctive human faces.



1. An **Amazon CloudFront** distribution with a web console is hosted in **Amazon Simple Storage Service (Amazon S3)** along with **AWS Amplify** to provide the architecture's front-end web user interface (UI). **AWS WAF** is used for source IP restriction.
2. An **AWS Lambda** function called through the **Amazon API Gateway** returns pre-signed URLs. All following requests to the **API Gateway** are authorized by **Amazon Cognito**.
3. An **S3** bucket stores your image library. Use the pre-signed URLs to upload images to the library.
4. Uploading an image to **Amazon S3** invokes a **Lambda** function. The **Lambda** function stores the metadata in **Amazon OpenSearch Service** and registers the image to **Amazon Rekognition** using the IndexFaces API.
5. The register-name **Lambda** function assigns names to images. The set-tags **Lambda** function adds tags to images.
6. The get-faces **Lambda** function searches the catalog of images against similar faces. It returns dimensions of faces detected in the image using the DetectFaces API.
7. The get-similars **Lambda** function calls the SearchFacesByImage API to find images with faces similar to the one in the image the user specified. The function returns the images' URLs on **Amazon S3**.
8. The get-photos **Lambda** function searches for images using names or tags. The function returns the images' URLs on **Amazon S3** after it searches the URLs using **OpenSearch Service**.

Reviewed for technical accuracy May 19, 2023

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

AWS Reference Architecture