

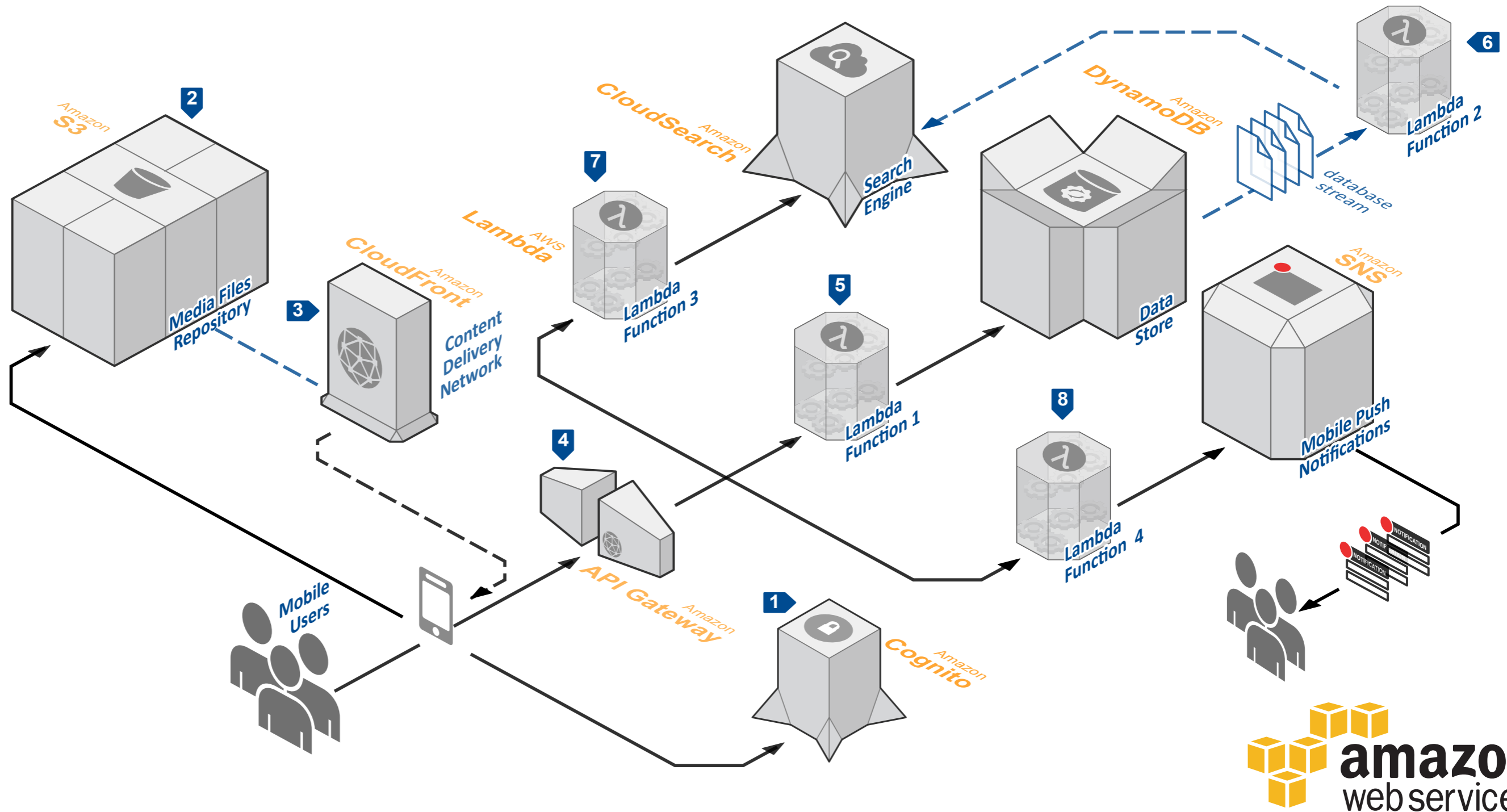
AWS LAMBDA: MOBILE BACKEND

Mobile application backend infrastructures require scalability, elasticity, and low latency to support a dynamic user base. Unpredictable peak usage and a global footprint of mobile users requires mobile backends to be fast and flexible.

The growing demand from mobile users means applications need a rich set of mobile services that work together seamlessly without sacrificing control and flexibility of the backend infrastructure.

With AWS Lambda, you can build applications that automatically scale without provisioning or managing servers. Since many mobile applications today have a limited budget for upfront infrastructure, a cost-effective, event-driven mobile architecture allows you to pay only for what you use.

This reference architecture shows an example of a highly available and scalable mobile backend featuring microservices, storage, and API endpoints requiring zero administration.



System Overview

- 1 Mobile users retrieve an identity from **Amazon Cognito**, which offers mobile identity management and data synchronization across mobile devices. Once a mobile user has received an identity, the user is granted access to other AWS services.
- 2 User-generated media files are stored in **Amazon Simple Storage Service (Amazon S3)**, a highly available and durable storage service.
- 3 Mobile users can access their uploaded digital assets stored in **Amazon S3** through **Amazon CloudFront**, a low latency, content delivery network.
- 4 Mobile users send requests to **Amazon API Gateway** to access application logic and dynamic data. API Gateway acts as an entry point for mobile applications to access functionality from code running on AWS Lambda.
- 5 Mobile applications require a highly scalable backend infrastructure to support the variable usage created by mobile users. **AWS Lambda** runs code in response to requests and automatically manages and scales the underlying resources. Lambda Function 1 provides a synchronous endpoint for users to store and retrieve unstructured data from Amazon DynamoDB.
- 6 Lambda Function 2 uses **Amazon DynamoDB Streams** to retrieve changes made by users, creates a searchable document, and inserts it into **Amazon CloudSearch**.
- 7 Lambda Function 3 provides a synchronous interface for users to search for data from **CloudSearch**. CloudSearch manages and scales the search solution for the mobile backend.
- 8 Lambda Function 4 provides an asynchronous endpoint for mobile users to communicate with each other within a mobile application. The function formats each communication request and sends a push notification to specific users with **Amazon SNS**.

