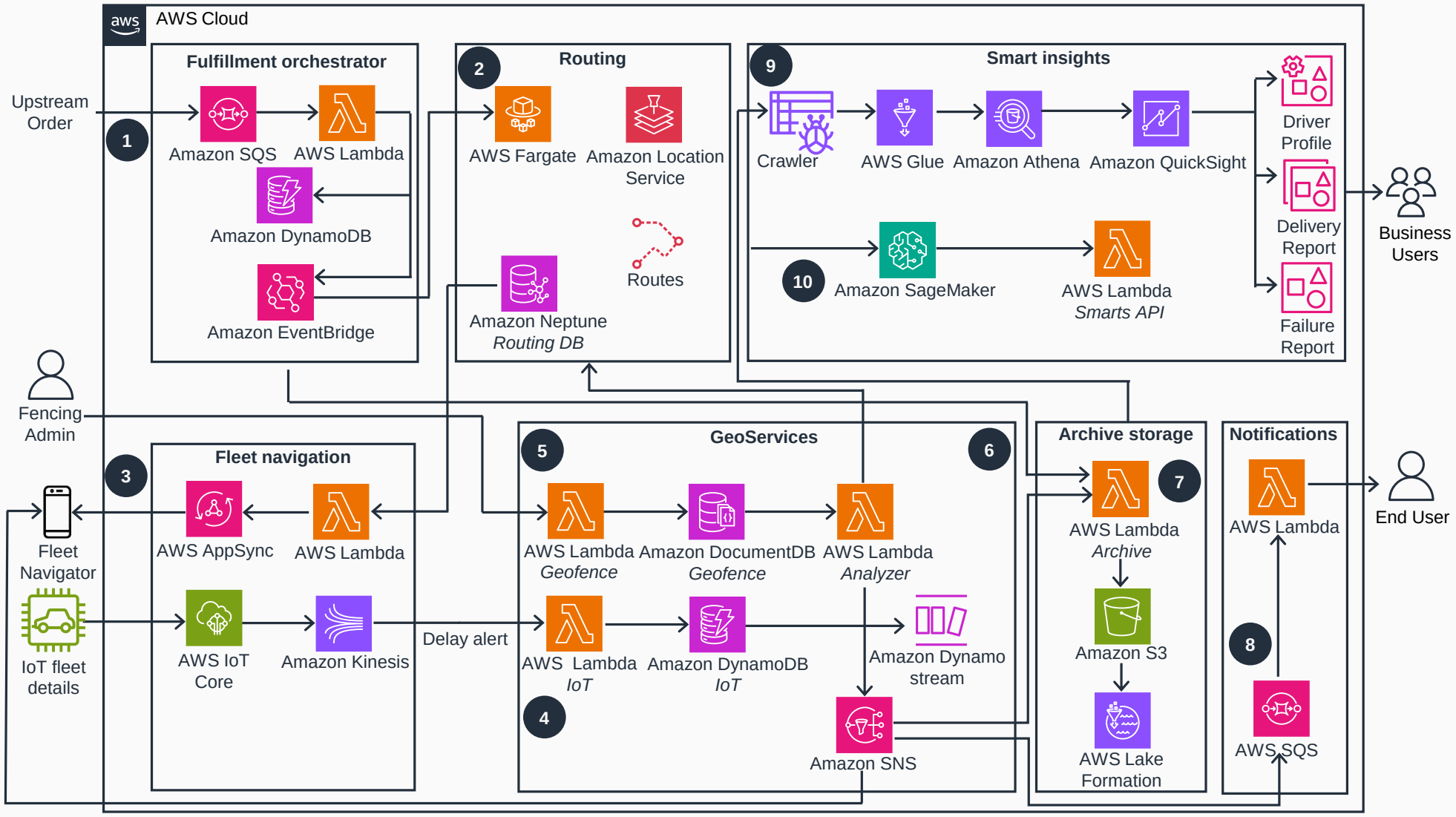
Guidance for Perfect Order on AWS

This architecture diagram shows how you can deliver orders to your consumers on time and with confidence.
Steps 1-5 are outlined below. For details on steps 6-10, refer to the next slide.



1. Upstream systems, which can be an ecommerce website or mobile app, produce the order. These orders are pushed to **Amazon Simple Queue Service (Amazon SQS)** which invokes an **AWS Lambda** function. These orders are pushed to **Amazon DynamoDB**, which then invokes an event by **Amazon EventBridge**.

2. Order and customer details are pulled by **AWS Fargate** into the routing block. This data is used for planning an optimized fleet route using **Amazon Location Service**. Data is persisted in **Amazon Neptune**, a graph analytics database (DB).

3. **Lambda,** in the fleet navigation block, extracts the route information and publishes to the fleet driver using **AWS AppSync**. **AWS IoT Core** receives the driver's location and sends it to GeoServices for analysis using **Amazon Kinesis**.

4. Vehicle data is pushed to GeoServices where it is persisted in **DynamoDB Streams**. **Lambda** is invoked for analysis.

5. A geofencing application is core for the analysis of a vehicle's state. A geofencing admin sets geofences for the route. **Lambda** uses the geofence to locate the vehicle.

Reviewed for technical accuracy February 15, 2024

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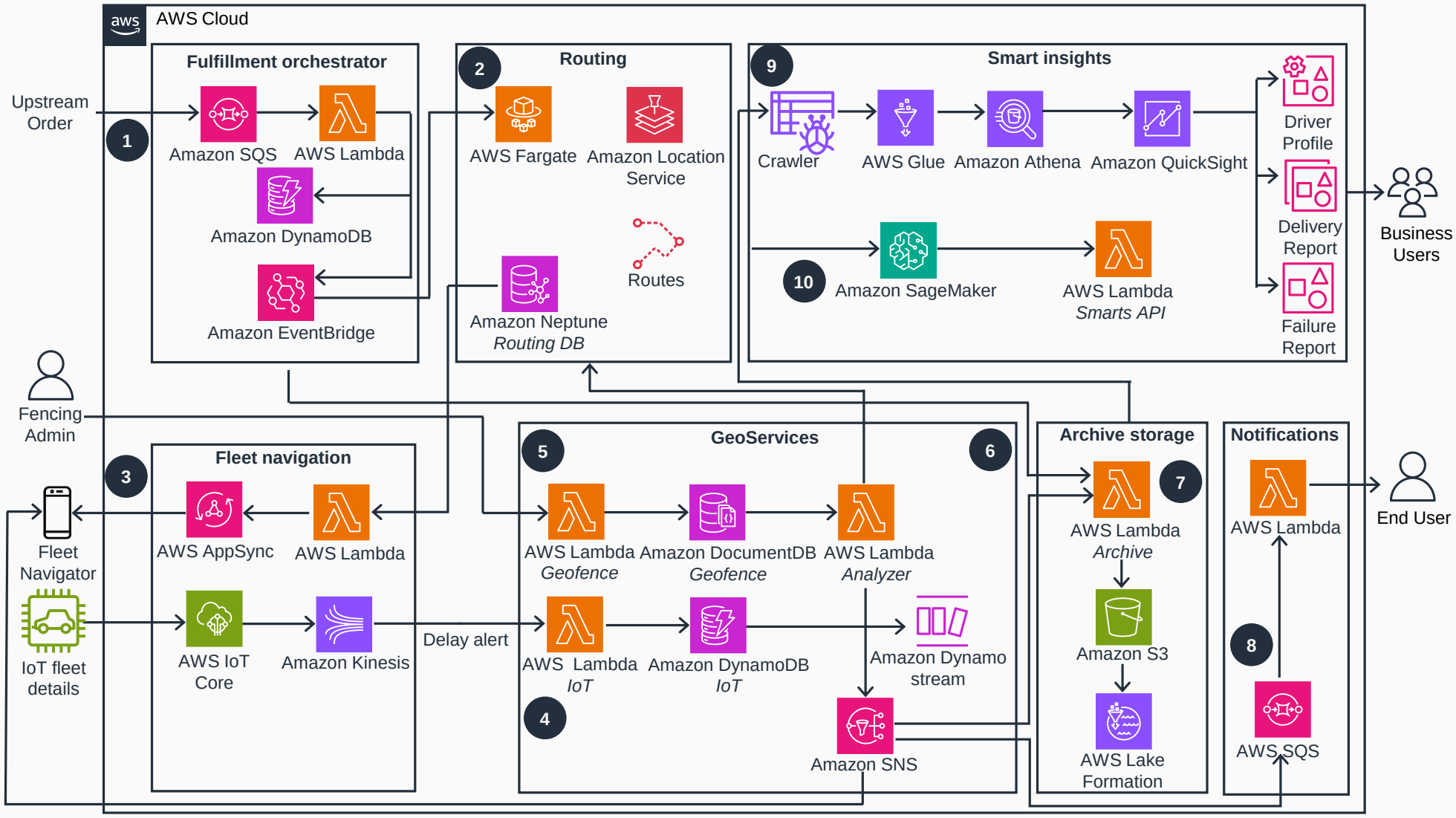
Steps 6-10



6 A **Lambda** function checks the **Amazon Location Service** for the estimated time of arrival (ETA) and predicts the scheduled delivery. Analyzed data is pushed by **Amazon Simple Notification Service (Amazon SNS)** alerts to both the driver and the end user for any delays and archives storage.

7 Using **AWS Lake Formation**, the analytics outcome, along with other fleet data, are archived using **Lambda** into **Amazon Simple Storage Service (Amazon S3)** and a data lake.

8 The data from the delivery status (outlined in step 6) is received in **Amazon SQS**. The data is pulled by **Lambda** to send proactive notifications to the consumer about the delivery status.

9 Data managed by **Lake Formation** is used to build smart insights and reports using **AWS Glue**, **Amazon Athena**, and **Amazon QuickSight**.

10 The data lake can be used for delivery predictions, driver profiling, and route profiling using **Amazon SageMaker**. The outcomes can be exposed using the **Lambda** API.

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