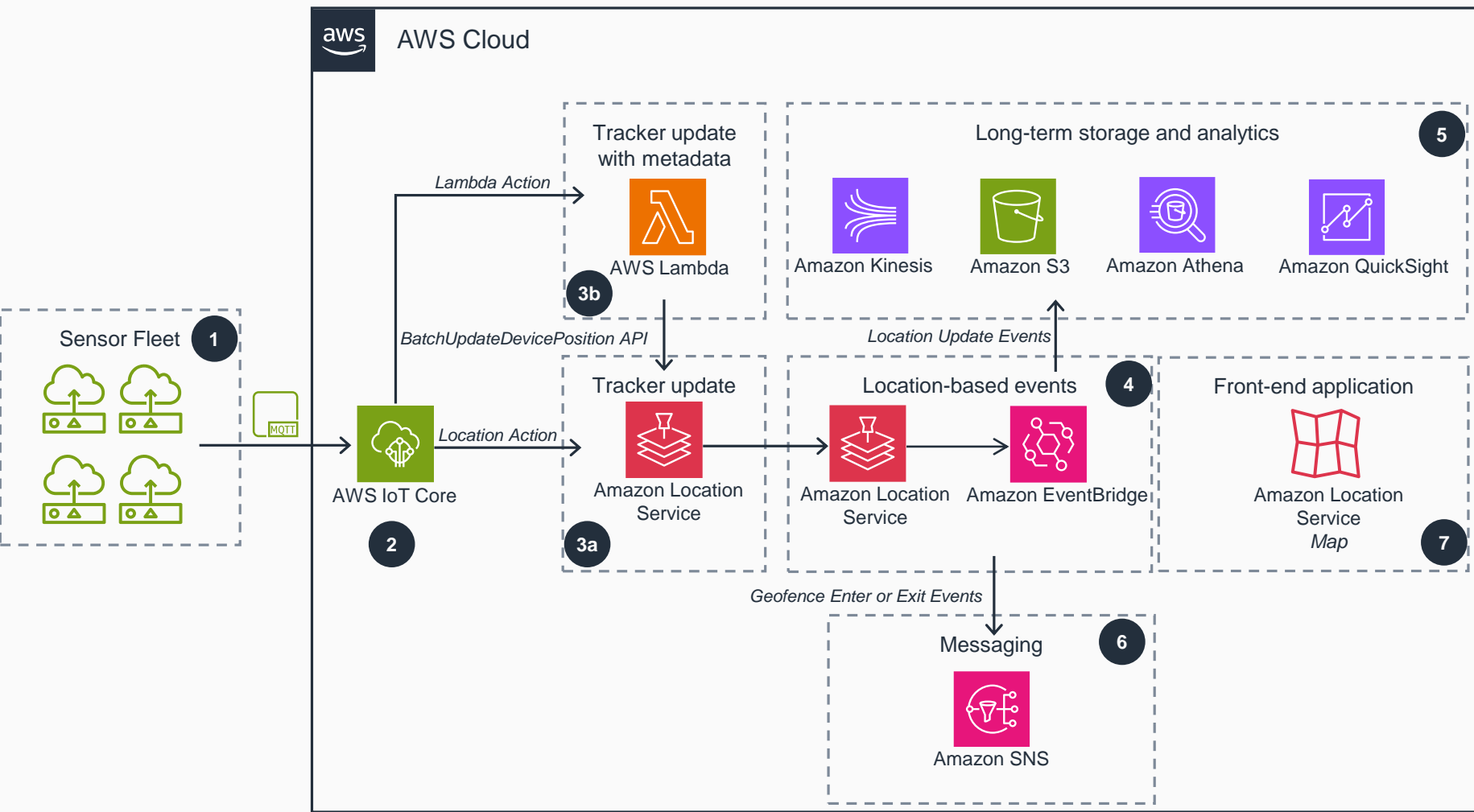


# Guidance for Tracking Assets & Locating Devices Using AWS IoT

This architecture diagram demonstrates how to stream location data from assets and devices and display that data on an interactive web application.



- 1 A fleet of sensors is deployed in the field that provides location data and sends the data over the Message Queuing Telemetry Transport (MQTT) protocol to **AWS IoT Core**.
- 2 Each sensor is represented by a 'thing' in **AWS IoT Core**. The messages from each sensor are sent to a topic. Optionally, if the sensor does not use GPS, **AWS IoT Core Device Location** can be used to resolve location based on Wi-Fi, cellular, global navigation satellite system (GNSS), or IP information. Rules are invoked on the messages and sent to actions, which invoke downstream AWS services.
- 3a Using the Location Action in **AWS IoT Core**, latitude and longitude updates are sent to **Amazon Location Service** tracker resources.
- 3b If metadata and accuracy are required in your application, an **AWS Lambda** function is required to send that data to **Location Service**. This **Lambda** function is invoked by an **AWS IoT Core Lambda** action.
- 4 Geofence enter or exit events and location update events are sent to **Amazon EventBridge**.
- 5 **EventBridge** sends location update events to **Amazon Kinesis**, and the events are stored in **Amazon Simple Storage Service (Amazon S3)**. The events can be analyzed by **Amazon Athena** and visualized by **Amazon QuickSight**.
- 6 **EventBridge** sends geofence enter or exit events to **Amazon Simple Notification Service (Amazon SNS)** for notifications.
- 7 A frontend application utilizing **Amazon Location Service Maps** visualizes the asset positions and allows for viewing of geofences and events.