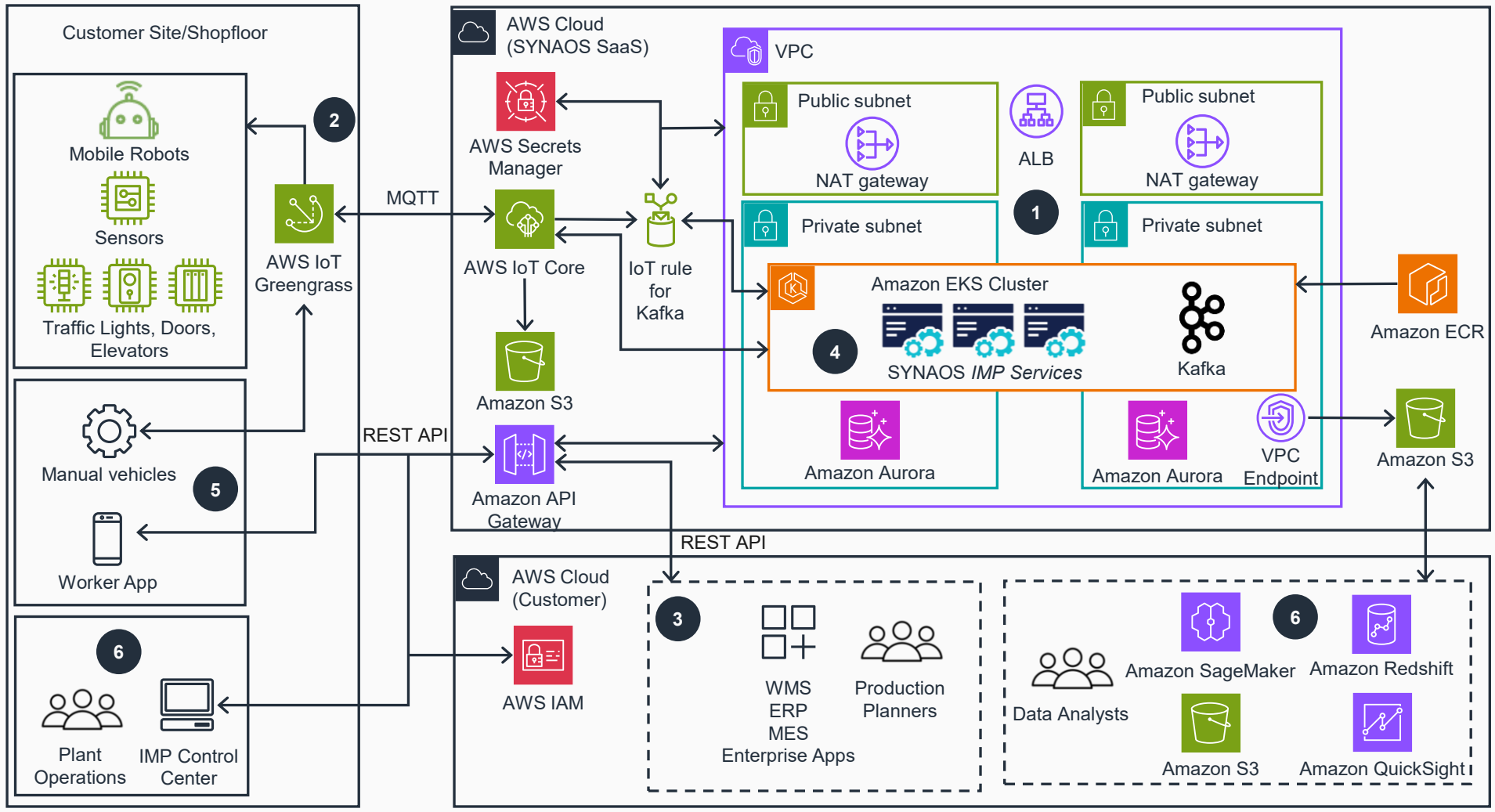
Guidance for SYNAOS Intralogistics Management Platform on AWS

This architecture diagram illustrates the data flow and AWS services integration for SYNAOS Intralogistics Management Platform (IMP) on AWS. SYNAOS IMP is offered as software-as-a-service (SaaS) on AWS.



1. The SYNAOS Intralogistics Management Platform (IMP) core services run in **Amazon Elastic Kubernetes Service (Amazon EKS)** across multiple availability zones with **Amazon Aurora** database for high availability. Self-managed Apache Kafka handles real-time event streaming and message distribution between services. **AWS Secrets Manager** stores credentials, IoT certificates, and API keys securely.

2. **AWS IoT Greengrass** on the shopfloor connects local MQTT devices to **AWS IoT Core** in the cloud. Devices and assets communicate through MQTT.

3. IMP receives transport demands from Manufacturing Execution Systems (MES), Warehouse Management Systems (WMS), or Enterprise Resource Planning (ERP) systems via **Amazon API Gateway**. Sensors and push buttons on the shopfloor also trigger transport demands.

4. IMP core services process messages from mobile robots (AGVs, AMRs), handling stations, and traffic lights to determine optimal transport solutions. IMP sends commands to vehicles to execute transport jobs based on near real-time demands and shopfloor status.

5. SYNAOS real-time localization system tracks manually operated forklifts and transport vehicles. Drivers receive transport jobs via the mobile SYNAOS Worker App.

5. Plant operations staff monitor all transport processes through the SYNAOS IMP Control Center. The Control Center provides manual intervention capabilities to resolve shopfloor issues.

6. Data analysts analyze historical intralogistics data from **Amazon Simple Storage Service (Amazon S3)** using **Amazon SageMaker** for ML insights, **Amazon Redshift** for complex queries, and **Amazon QuickSight** for efficiency reports and optimization opportunities.

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AWS Reference Architecture