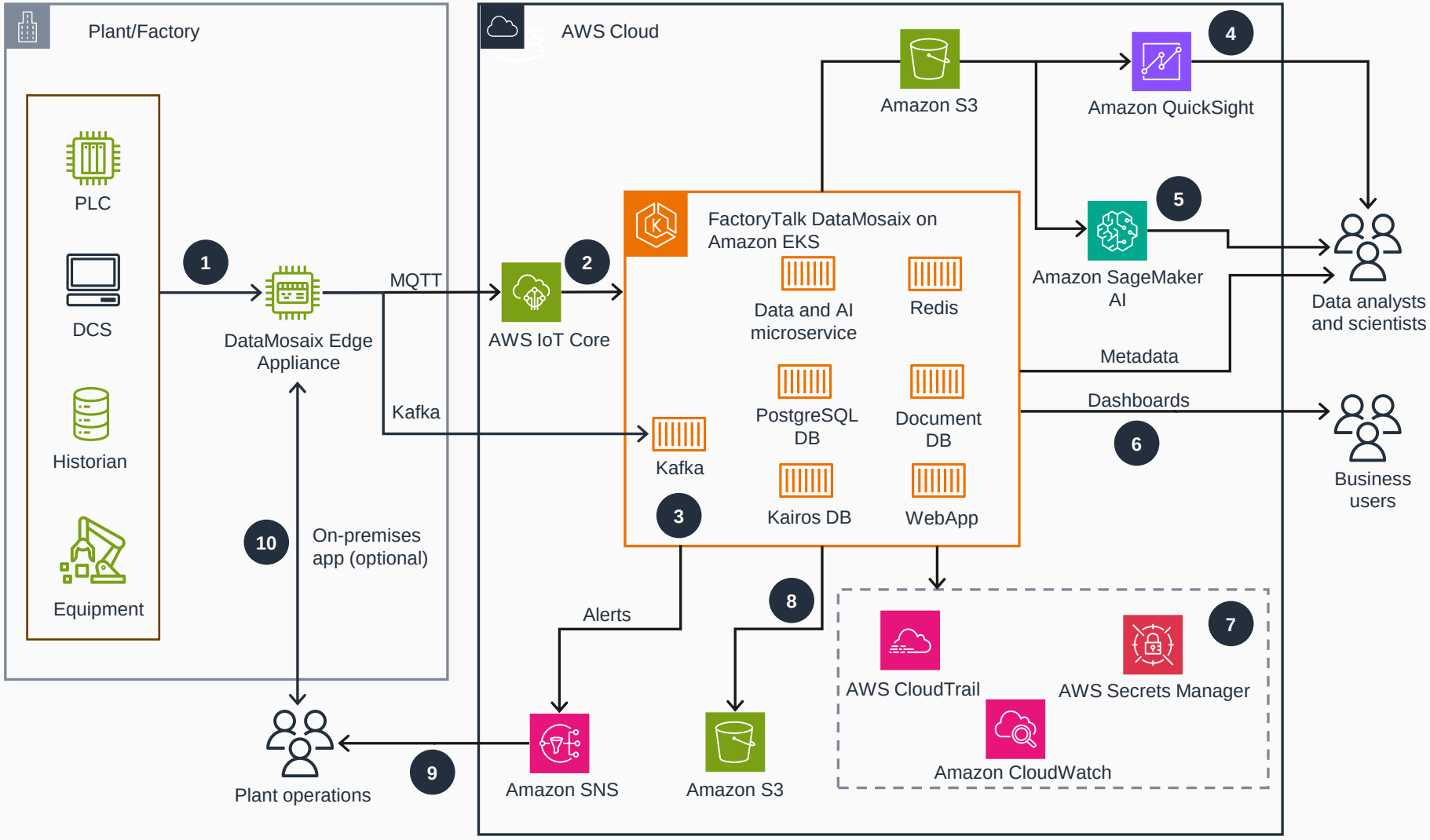
# Guidance for Industrial Data Fabric with FactoryTalk DataMosaix Private Cloud

This architecture diagram illustrates FactoryTalk DataMosaix Private Cloud on AWS, which provide capabilities to contextualize human and machine data to create an industrial knowledge base, catering to manufacturing business outcomes.




1. DataMosaix Edge Appliance serves as a gateway with support for common industrial protocols, such as open platform communication (OPC), Modbus, PROFINET, CanBus, and EtherNet IP among others, connecting to programmable logic controllers (PLCs), human machine interfaces (HMIs), distributed control systems (DCS), site historians, smart sensors, and equipment on the factory floor.
2. The appliance sends data to the cloud through either Kafka or AWS IoT Core protocols (MQTT). Users can configure both the size of each message and the data points included.
3. FactoryTalk DataMosaix runs on **Amazon Elastic Kubernetes Service (Amazon EKS)** with Kafka for streaming events and data, data, and AI services for handling data transformations. Additionally, KairosDB stores timeseries data, PostgreSQL and DocumentDB store metadata and events, Redis caches data, and WebApp runs application services.
4. Data analysts use **Amazon QuickSight** to build business intelligence (BI) dashboards.
5. Data scientists leverage **Amazon SageMaker AI** to build MLFlow or Kubeflow models using the industrial knowledge base in FactoryTalk DataMosaix and deploy the models to the edge using pipelines.
6. The web applications running on **Amazon EKS** serve dashboards and apps to cater to critical business outcomes.
7. **AWS CloudTrail** and **Amazon CloudWatch** monitor application events and logs. **AWS Secrets Manager** stores application credentials.
8. **Amazon Simple Storage Service (Amazon S3)** stores data backups.
9. **Amazon Simple Notification Service (Amazon SNS)** sends critical alerts and insights directly to plant operators on the factory floor.
10. Plant operators and edge applications consume the alerts to perform actions on plan equipment.

*Reviewed for technical accuracy June 20, 2025*



**AWS Reference Architecture**