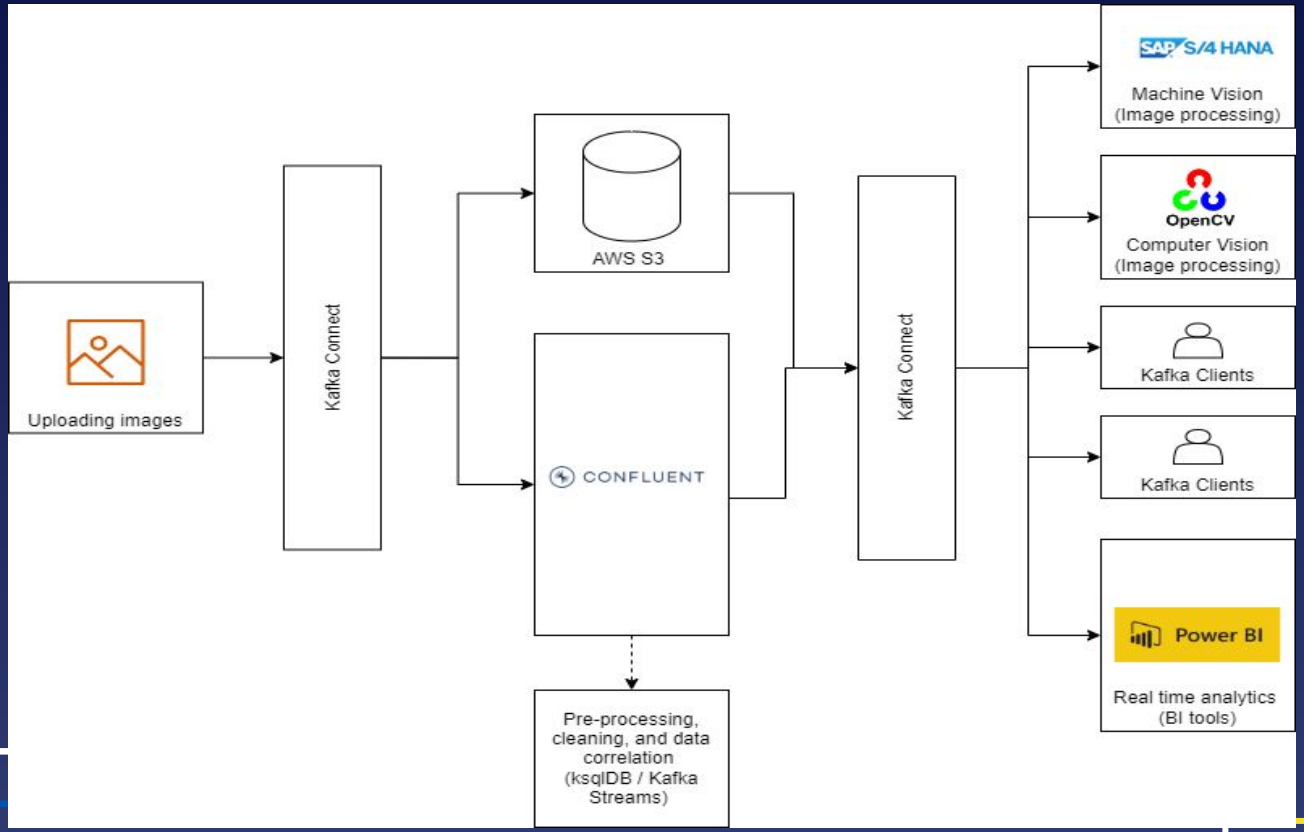
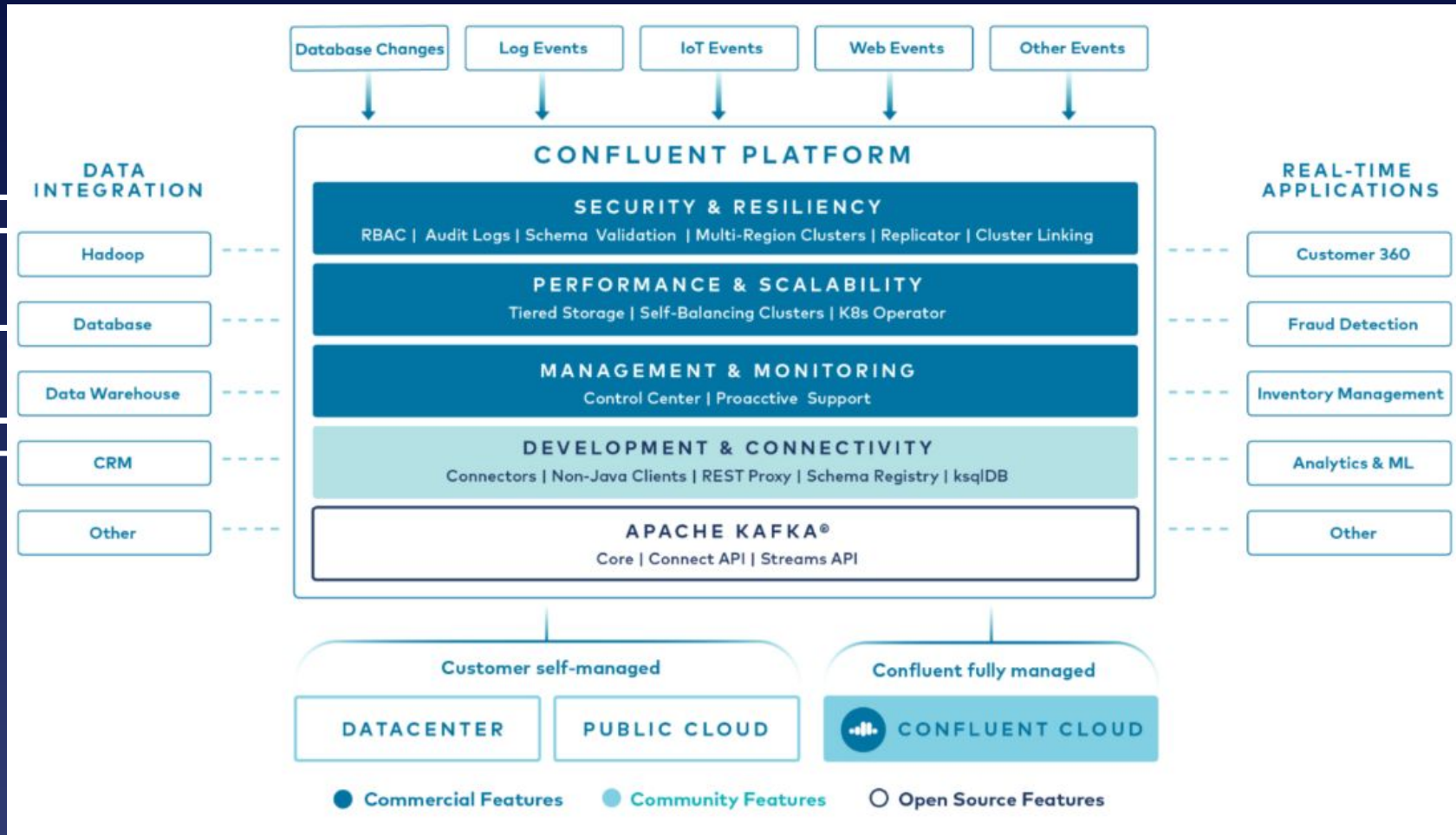
Kafka Architecture

System Architecture Design



Confluent Architecture



Architecture

Description:
This architecture supports large message processing using **Confluent** as the data streaming platform. Business Intelligence and Analytics tools are connected via **Kafka Connect**, where PowerBi will display the insights from **OpenCV** and **SAP 4 HANA**'s image processing capabilities, reflected on a dashboard

Utilizing **Tiered Storage** to separate concerns of data storage and data processing, supported by **AWS S3** as the external database

Pros:

- **Confluent** integrates historical and real-time data into a single, central source of truth.
  - Suitable for reliability, performance, and full scalability (from open sourced to commercial use)
  - With **Tiered Storage**, send data to cost-effective object storage, and scale accordingly when more resources are needed for computation.
- Low latency

Cons:

- The same **S3** bucket must be used within a **Tiered Storage** enabled cluster.
- Large limitations of AWS connectors for **Confluent cloud**