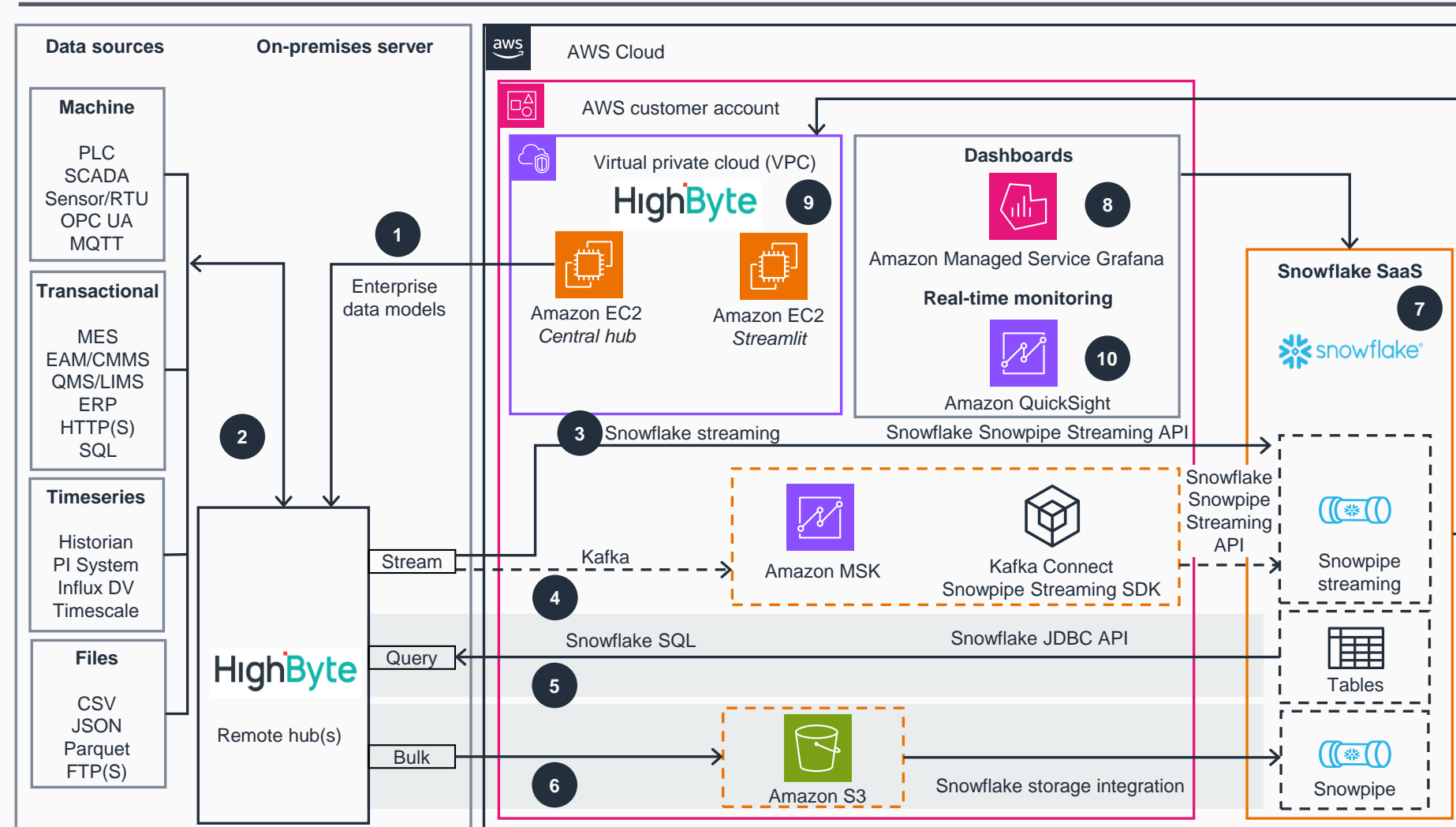


Guidance for Industrial Data Fabric with Snowflake and HighByte on AWS

This architecture diagram demonstrates how to create an enterprise-governed model in HighByte that ingests real-time, historical and transactional data at scale from edge and cloud data sources into Snowflake.



- 1 Define enterprise-standardized and contextualized data models using Central HighByte Intelligence Hub, and push the models to on-premises remote hubs.
- 2 Ingest operational technology (OT) data using HighByte from industrial data sources, including machine data sources such as programmable logic controller (PLC), supervisory control and data acquisition (SCADA), and message queuing telemetry transport (MQTT). This may also include other sources, such as manufacturing execution system (MES), enterprise asset management (EAM), quality management system (QMS), historians, databases, files, and more.
- 3 A direct, low-latency connection from HighByte to Snowpipe Streaming then connects to Snowflake tables to efficiently insert data.
- 4 Publish to Snowpipe Streaming through **Amazon Managed Streaming for Apache Kafka (Amazon MSK)**. Host a Kafka connector for Snowpipe Streaming on **Amazon MSK Connect**.
- 5 Query data from Snowflake using direct table access with HighByte Intelligence Hub and the Snowflake SQL connector.
- 6 Connect to **Amazon Simple Storage Service (Amazon S3)** using a HighByte S3 connector. Move large or historical datasets into S3 buckets for Snowflake Snowpipe services to automatically retrieve.
- 7 Transform data using Snowpark to leverage the power of Java or Python. Data can then be aggregated and prepared using SQL for analytics.
- 8 Create real-time dashboards in **Amazon Managed Grafana** using a native connector for Snowflake.
- 9 Create Streamlit apps running on **Amazon Elastic Compute Cloud (Amazon EC2)** to display real-time dashboards from the raw data zone and historical analysis from the analytics zone in Snowflake using the Python or Snowpark connector.
- 10 Analyze and visualize data using **Amazon QuickSight** with a native connector to Snowflake.

