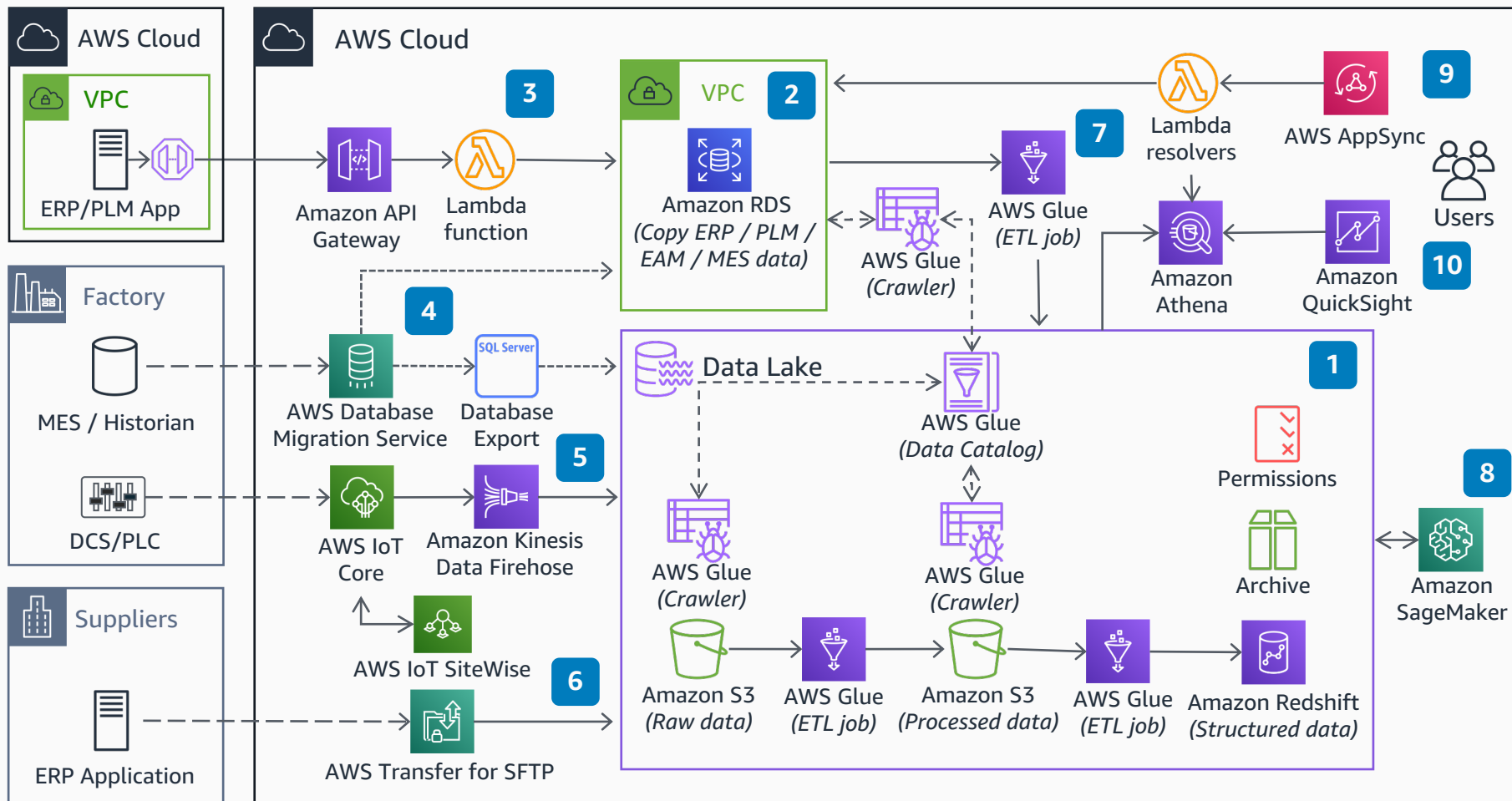


Manufacturing Data Lake

Build a manufacturing data lake that includes operational technology data (Industrial Internet of Things [IIoT] and factory applications) with enterprise application data for manufacturing analytical use cases and predictions with machine learning (ML) models.



- 1 Create a data lake structure using **AWS Lake Formation** or **Amazon S3** and **Amazon Redshift**.
- 2 For structured relational data, create an **Amazon RDS** instance within a VPC.
- 3 For compatible enterprise applications, use **Amazon API Gateway** and **Lambda** functions to create an interface into the RDS instance.
- 4 For compatible databases, use **AWS Database Migration Service** to create copies or export structured data sets.
- 5 For industrial IoT (IIoT) and automation equipment, use **AWS IoT Core** and **Amazon Kinesis Data Firehose** to stream data into the Data Lake.
- 6 For external or batch interfaces, use **AWS Transfer for SFTP** to put data into the Data Lake.
- 7 Once data ingest paths are set up, use **AWS Glue** to build the data catalog and to create the ETL jobs for data processing.
- 8 Use **Amazon SageMaker** to train and deploy machine learning models from the data sets.
- 9 Use **AWS AppSync** to build a GraphQL endpoint with **AWS Lambda** resolvers to provide an application interface to the data.
- 10 Build visualizations and dashboards using **Amazon QuickSight** with **Amazon Athena** and **Amazon Redshift**.

