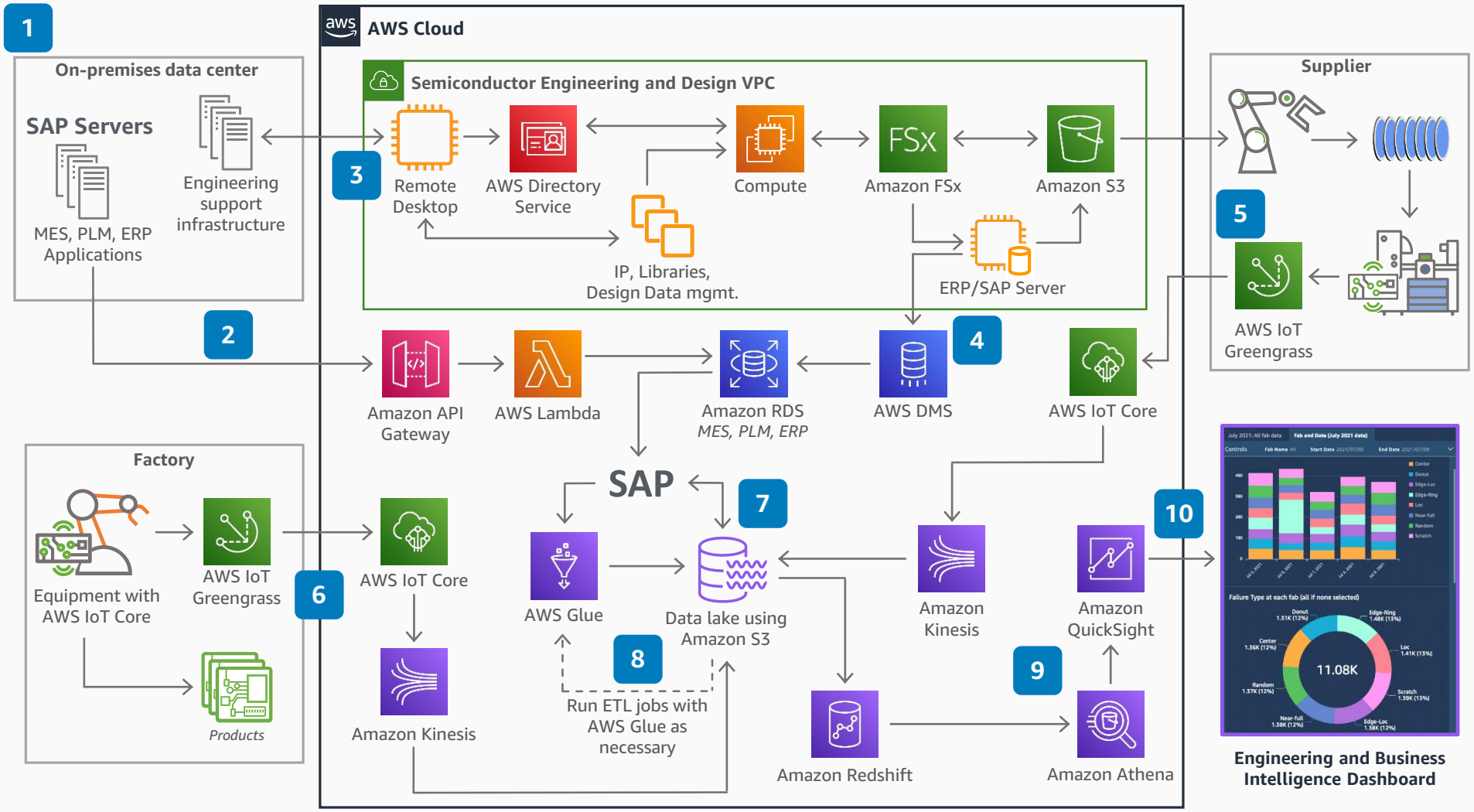
Guidance for Semiconductor Supply Chain Resiliency Using SAP on AWS

Unlock actionable insights for supply chain operations

AWS enables end-to-end visibility for supply chain operations, resulting in actionable insights while mitigating risk.



1. Determine what is needed to integrate engineering, manufacturing execution system (MES), product lifecycle management (PLM), and enterprise resource planning (ERP) data.
2. Transfer existing MES, PLM, and ERP data into AWS through **Amazon API Gateway** and **AWS Lambda**.
3. Data required for engineering workloads is moved into AWS, which will use the necessary AWS infrastructure.
4. Engineering data (such as results and failures) is transferred from the engineering virtual private cloud (VPC) to the data lake in **Amazon Simple Storage Service** (Amazon S3) using **AWS Data Migration Service** (AWS DMS) and **Amazon Relational Database Service** (Amazon RDS).
5. Using **AWS IoT Greengrass**, **AWS IoT Core**, and **Amazon Kinesis**, suppliers and foundries transfer yield and product data into the **Amazon S3** data lake.
6. Using **AWS IoT Greengrass, AWS IoT Core**, and **Kinesis**, manufactures and Outsourced Semiconductor Assembly and Test (OSAT) providers transfer product data into an **Amazon S3** data lake.
7. SAP is used to sort and process the data in the **Amazon S3** data lake.
8. Data is prepared for analytics by running extract, transform, and load (ETL) jobs using **AWS Glue** to discover, prepare, move, and integrate data from multiple sources.
9. **Amazon Redshift**, **Amazon Athena**, and **Amazon QuickSight** can build a business insights dashboard.
10. View data, create complex data models, and take needed actions using combined data from multiple sources.

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AWS Reference Architecture