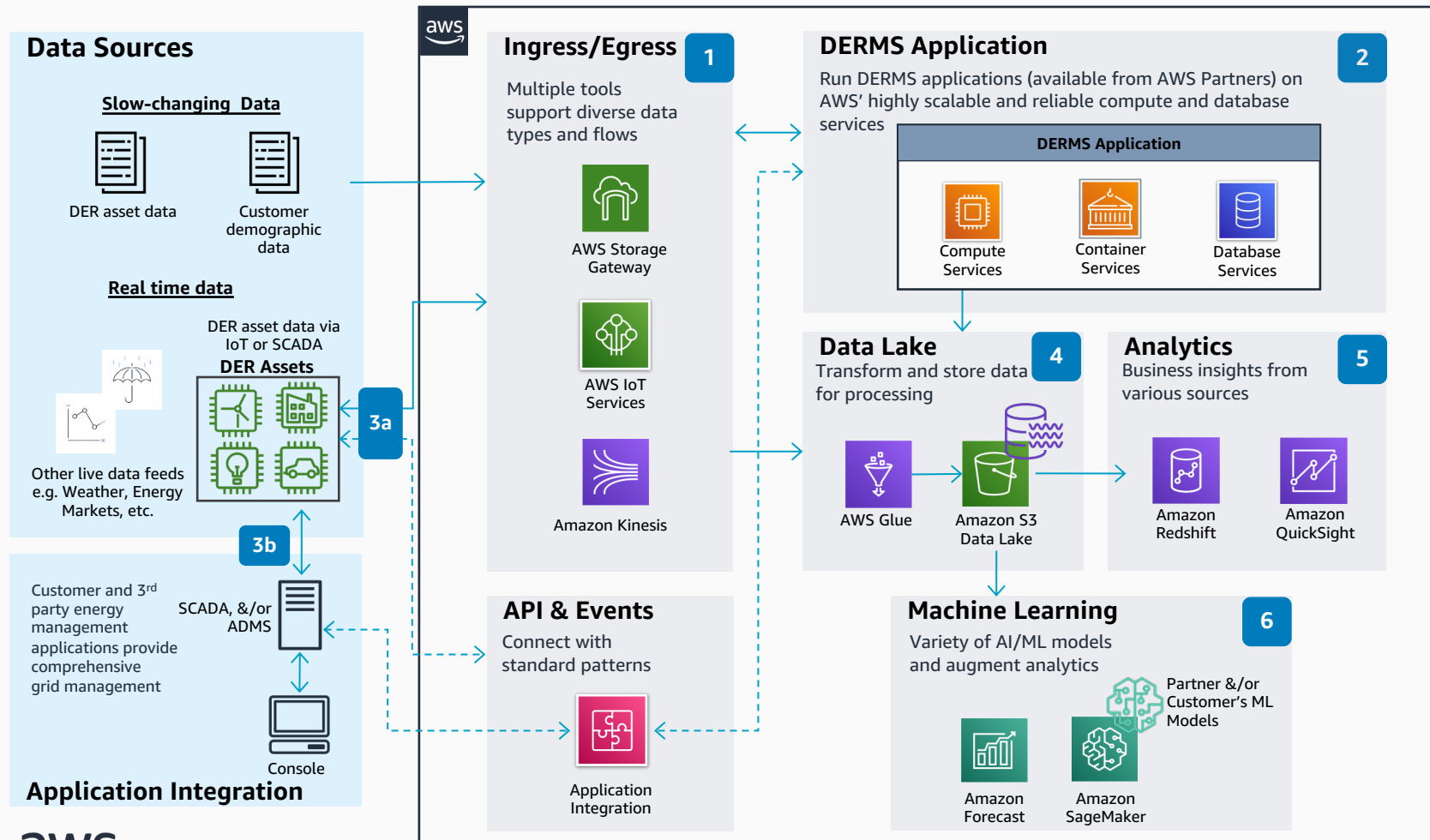


# DERMS on AWS for Utilities

Run your **Distributed Energy Resource Management Systems (DERMS)** on AWS to meet increasing demand to monitor, forecast, and control your wind, solar, battery, and emerging “green” DERs. Deploy a scalable solution to effectively match generation with load, improve grid resiliency and reliability. Use the right compute, data store, and analytics tools to gain operational and customer insights, and run proactive and meaningful analytics using machine learning (ML).



- Streaming and batch data is collected from various data sources, such as customer and grid data, meter data, DER measurements, market prices, and weather. Integration to DERMS is via one or more of AWS File Transfer, IoT, streaming, or API services.
- Vendor DERMS applications can be deployed using different compute services, such as **Amazon EC2**, **AWS Lambda**, or AWS container services. Their associated transactional and operational data sets can be optimally stored in purpose-built AWS databases based on their data structure and access patterns.
- A DERMS may control DER assets directly, via IoT or APIs (3a) or make recommendations to the ADMS/SCADA, and let it execute the actual control (3b). ADMS and other systems integrate with DERMS to ensure a balanced grid using application integration services such as **Amazon API Gateway**, **Amazon SNS**, **Amazon SQS** or **Amazon EventBridge**.
- Automate ETL processes such as transform and deduplication with **AWS Glue**. Use **Amazon S3** as low cost storage for raw and curated data, with archival copies for retention and compliance. Your **Data Lake** serves as the *single source of truth* for downstream analytics and ML work. **AWS Glue** can also automate the process of data schema discovery and metadata tagging to create a metadata catalog that makes all data visible and searchable.
- Query petabytes of structured and semi-structured data across your data warehouse and your data lake using standard SQL with **Amazon Redshift**. Create and publish interactive dashboards with **Amazon QuickSight**, which can be accessed from any device, and embedded into your apps and websites.
- Harness the power of pre-trained AI models, such as **Amazon Forecast**, to detect grid anomalies, forecast energy usage, and predict equipment failures. Build, train and deploy your own ML model quickly with **Amazon SageMaker**.

