



CASE STUDY

Power Generation company improves operational efficiency with AWS and Mactores

A power generation company partnered with Mactores and AWS to improve operational efficiency. They migrated to Amazon Timestream for real-time data analysis, implemented machine learning models using Amazon SageMaker, and used Amazon Forecast for load forecasting. Resulted in reduced costs, improved reliability, and increased revenue.

Case Study Summary

- A power generation company partnered with Mactores and AWS to optimize their data processing and analytics capabilities.
- Traditional data storage and analysis methods were not scalable to handle large volumes of time-series data, which made it difficult to gain real-time insights into equipment performance.
- Mactores migrated the data to Amazon Timestream, enabling real-time data analysis and insights.
- Machine learning models were implemented using Amazon SageMaker to predict equipment failures and optimize energy production.
- Amazon Forecast was used to create load forecasting models, resulting in reduced operational costs by 40% and increased revenue by 30%

About The Customer



Adani Power primarily focuses on producing and distributing energy in the global markets. Adani Energy is committed to sustainable business practices and reducing its carbon footprint. The company is investing in renewable energy sources, such as solar and wind power, and it has implemented several initiatives to promote energy conservation and efficiency.



Customer Situation

Adani Power had been using traditional data storage and analysis methods, but they found that these methods were not scalable enough to handle the large volume of time-series data generated by their equipment. They were also unable to gain real-time insights into equipment performance, which made it difficult to identify issues before they resulted in downtime or equipment failure.

A large volume of data was collected from various sensors and equipment installed at different locations, such as power generation plants, transmission lines, and substations. This data needs to be analyzed in real-time to monitor power generation, transmission, and distribution, ensure safety and reliability, and optimize the performance of the power system.



"I am impressed with the time series database solution provided by Mactores Consulting and AWS. The solution enables the power company to manage time series data effectively, ensuring safety and reliability while optimizing performance. The platform provides a secure and scalable solution for collecting, processing, analyzing, and visualizing data.

- Ashtad Engineer, CTO @ Adani Power

Our Approach

The solution consisted of Amazon Timestream, AWS IoT Core, AWS Lambda, and Amazon QuickSight. Mactores helped the client set up Amazon Timestream as the central repository for their time series data.

We integrated AWS IoT Core with their SCADA systems and other equipment to securely collect and transmit time series data to Amazon Timestream.

With AWS Lambda, the client was able to automate data processing and analysis. With Amazon QuickSight, the client was able to create custom dashboards and reports to monitor power generation and transmission, identify trends and anomalies, and optimize the performance of their power system.

Business Outcomes

Centralized and efficient management of time series data from various sources, resulting in improved data quality and reliability.

Real-time monitoring of power generation and transmission enabling the company to quickly identify and address issues, ensure safety, and optimize the performance of the power system.

Automation of data processing and analysis, resulting in increased efficiency, reduced manual effort, and improved accuracy of data analysis.

Creation of custom dashboards and reports using Amazon QuickSight, enabling the company to gain insights and make informed decisions based on real-time data.

Technical Outcomes

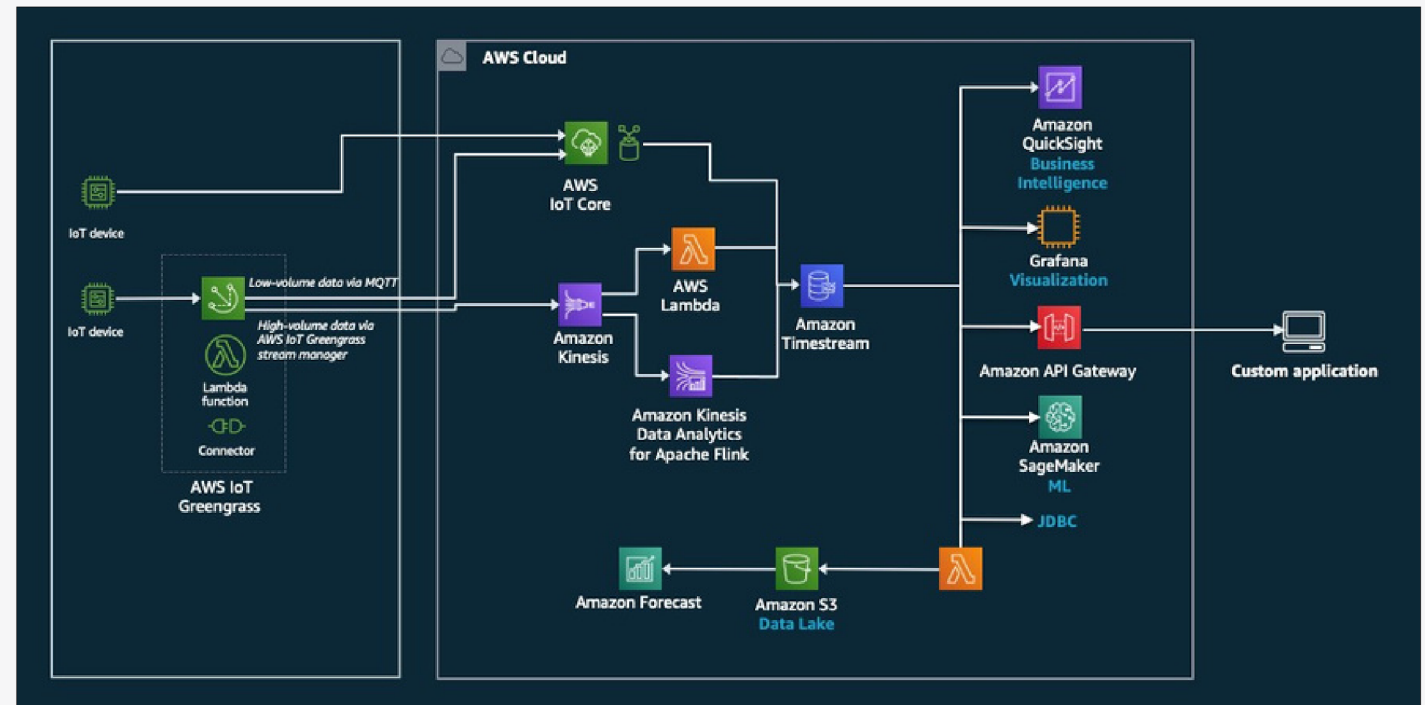
Real-time data processing: The integration of AWS IoT Core with the SCADA systems and other equipment allowed the client to securely collect and transmit real-time data to Amazon Timestream for processing and analysis.

Analytics: The built-in analytics functions in Amazon Timestream and the use of Amazon QuickSight enabled the client to perform complex analysis and create custom dashboards and reports to monitor power generation and transmission, identify trends and anomalies, and optimize the performance of their power system.

Security: AWS provides a highly secure platform for data storage, processing and analysis, which helped to ensure the confidentiality, integrity and availability of the client's time series data.

Reference Architecture

- Ingesting data from AWS IoT Greengrass
- Using the Timestream AWS IoT rule action to ingest data
- Consuming data via APIs
- Visualizing data via Grafana
- Storing data in Amazon Simple Storage Service (Amazon S3) in CSV format for use with Amazon Forecast or other downstream analytics



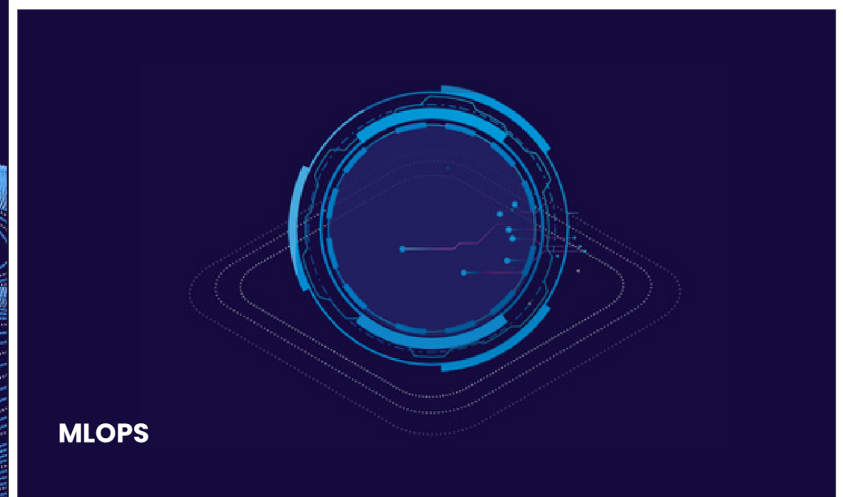
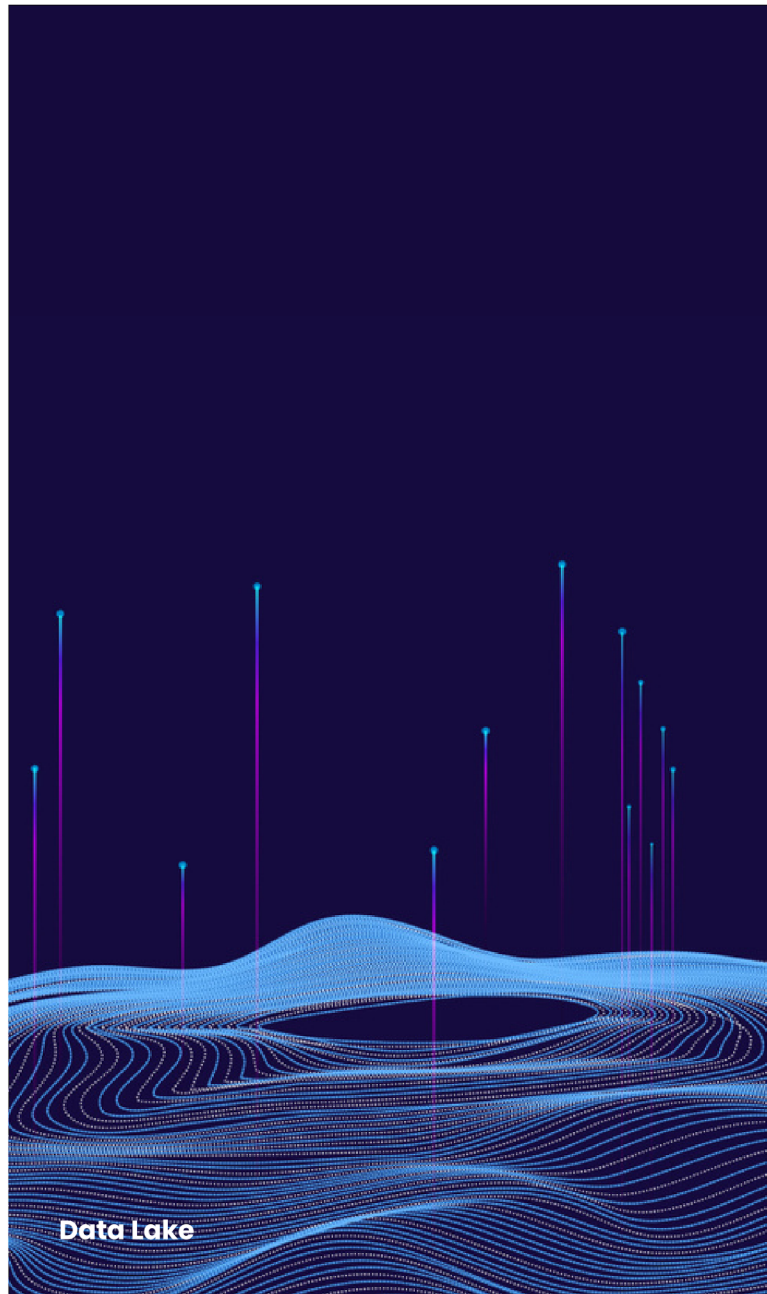


Getting Started

Mactores conducted an immersive workshop, providing the key stakeholders a dive deep into their current state. Once the Adani Power team was aligned, the Mactores data team worked on an ideation session, helping Adani Power see their path forward.

This workshop led to a Proof of Concept, lasting just 4-weeks, allowing the team to experience quick wins by seeing the new solution applied to their environment, creating the buy-in for all the key stakeholders. With a clear path forward, the Mactores team partnered with Adani Power to begin their transformation.

Our Solutions



Our Process

Digital transformation via assessments, migration or modernization

We work alongside your tech team to assess and strategize what you need and how to implement the right data solutions on time, on budget and with c-suite buy in.



Assess

- Discovery Automation
- Future State Assessment
- GAP Analysis
- End State
- Road Map
- TCO



Migrate

- Strategy
- Execution
- Migrate
- Migration Acceleration



Modernize

- StrategyFuture State
- Design
- Build
- Automate

AWS Validated Competencies



AWS Validated Service Deliveries



www.mactores.com/lets-talk

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