

A Vertically Integrated Utility Company Journey with New Math Data

Executive Summary

The case study outlines a Vertically Integrated Utility Company's migration of critical data systems to AWS with New Math Data (NMD) at the helm. NMD leads the design and implementation of a shared data lake, a new executive-level business application, and the AWS migration of a crucial application for power distribution efficiency. Additionally, NMD advises on migration processes, ensuring compliance with security protocols. Leveraging architects and engineers, NMD delivers innovative solutions, including multi-account AWS architectures and reusable Terraform modules. While a portion of applications has been migrated successfully, ongoing collaboration between NMD and the utility focuses on executing the AWS roadmap efficiently.

Customer Description

Customer (undisclosed) is a Vertically Integrated Utility company, with operations in generation, transmission, and distribution throughout the United States.



Description of Service

The customer has a large existing on-prem Hadoop cluster and a significant software investment in Spark and PySpark applications.

They are currently undergoing a massive migration of multiple critical data systems to AWS. New Math Data is involved in multiple leadership and engineering roles. These include: leading the design and implementation of a shared data lake that acts as a secure centralized data repository, leading the design and implementation of a new business application with executive-level visibility, and leading the AWS migration of an existing business application that is critical for streamlining power distribution efficiency and reducing maintenance and upgrade costs.

New Math Data (NMD) is also heavily involved in advising on processes and procedures to aid Customer migration to AWS; processes and procedures to enable multiple project and data teams to work efficiently and effectively in the cloud, while maintaining strict security protocols required for their regulated industry.

Description of Solution

Multiple NMD architects and engineers are engaged to identify solutions and drive best practices given the particular business problem.

Architects and engineers are deeply integrated with their respective Customer teams, and are responsible for design and implementation of target systems.

This includes:

- Designing and implementing multi-account AWS architectures and core security and engineering practices.
- Design and implementation of reusable Terraform modules for creating data-based applications in the cloud.
- Designing and implementing a mechanism of securely sharing data to consumer accounts from a centralized data governance account.
- Designing/implementing ETL pipelines for processing myriad datasets.
- Designing and implementing a highly scalable serverless processing architecture for infrequent processing of critical workloads.
- Working with business stakeholders to discover technical requirements for user applications and supporting data processing and infrastructure.

Description of Outcome

A portion of the portfolio of applications has been successfully migrated to AWS, the project is ongoing. NMD continues to work very closely with Customer on their AWS roadmap, providing technical expertise, guidance, and hands-on work to migrate their data systems and applications.

Lessons Learned

Creation of software modules to support similar architectural designs is essential early in the project.

Current Relationship

NMD continues to work closely with Customer on ongoing projects, staffing the projects regularly.