



DTE Uses Databricks to Optimize the Grid and Enhance Service to 2.2 Million Power Customers

Confidential – not to be shared externally



Challenge

Scalability, performance, shortened development cycles, and manageable costs were promises of DTE’s early move to Cloudera - the centralized data lake platform that would propel DTE’s Operate for the Future initiative. But the story unfolded very differently. DTE needed a more modern, flexible data platform that required less maintenance and overhead, other challenges included:

- Hadoop infrastructure proved to be complex, cumbersome, and costly to scale. This legacy system also struggled with performance.
- Slow time to value - 50% longer lead times getting data to business users
- High cost - 30% higher for expanded Cloudera licensing, with missing features
- Lack of skillsets- No internal Cloudera resources
- DTE was faced with increasing data volumes from its AMI smart metering system and new demands for predictive ML capabilities to optimize critical operational and customer experience

Solution

Neudesic was called in to assess DTE’s existing Cloudera instance and to form recommendations on how to improve performance. Through briefings and design sessions, Neudesic painted a vision for migrating off Cloudera to an Azure PaaS and Databricks platform. Neudesic’s Data & AI Platform Accelerator was leveraged to migrate to Microsoft Azure Databricks when its existing data platform (Hadoop) failed to meet expectations for actionable insights.

- Fully migrate AMI data from Hadoop to Azure Databricks in 4 days, setting the course for data classification, tagging and exploration
 - Neudesic migrated all data (> 20 sources) and workloads to the new environment with no downtime - fully sunseting Hadoop
- Deploy a structured data lake store, and implement machine learning capabilities- including a full-scale Databricks deployment
- CI/CD was integrated into the architecture using infrastructure as code and power shell scripts to ensure proper governance and security in the cloud

Current State & Next Steps

DTE benefited from the acceleration properties of Neudesic’s Azure Databricks framework which:

- Accelerated insight delivery by as much as 60% allowing for more innovation and use-cases supported by a new data science team.
- Achieved a 60X reduction in latency when running- real time stream processing from IoT data source
- Identified with 99% accuracy anomalies tied to tampered or unlinked meters.

Positive Business Outcomes from the New Azure Data Platform:

- Lower Costs - Saved 30% in licensing, overhead and scaling costs (leaving Hadoop)
- Self-Service Enablement - 7 new business units onboarded to Databricks enabling citizen data scientist development
- Improved Performance -10X speed increase from data engineering and data science

The Key Players



Partner	Neudesic
Partner Reps	Michael Brown, David Bess, Mike Cantrell, Matt Couzens
Databricks Team	Rocky Regan, John Howey Matt Jackson, Steve Sprout, Michael Lumb

About



Client: DTE Energy
Industry: Utilities
Region: Desert Lakes
MSFT Program: Azure: Hadoop to Azure Databricks
Neudesic IP: Data & AI Platform Accelerator - Databricks

Project Highlights



\$340k **300+**

In commit, future growth Databricks users in just 12 months