CASE STUDY

Secure and Efficient:
Transforming Oil
& Gas Operations
with Databricks

Client

The client is an upstream oil and gas company with operations across the United States, primarily focused on extracting hydrocarbons from wells.

Challenges

- To reduce end-to-end data processing time, which was nine hours when the client approached us.

- To access the data through reporting tools and spreadsheets for downstream consumption.

- Accessibility to all the end users who receive access at appropriate security levels.

- Data models to create 58 self-service reports.

LTIMindtree Solution

- Created data model in line with the benchmark set by Databricks and PBI for Azure cloud migration with scalable design.

- Automated end-to-end ETL flow with detailed audit log and parallel execution to reduce overall execution time.

- Reduction of fact table size from 18gb to 6gb by vertically partitioning into fact and lookup tables for faster load to insert full form (PBI).

- Laid the foundation for strategic financial system making it scalable for future on-prem systems onboarded to cloud.

- Created reconciliation script, which generates automated report of all the KPIs on report validation.

- More accuracy of data as compared to on-prem system. Additionally, more data issues were identified and fixed.

- Simplified and enhanced security model to provide row level security basis Azure AD.

Business Benefits

Overall processing time: **300%** reduction from 9 hours to less than 3 hours for a full load and <1.5 hours for an incremental load.

Fact table size: **300%** reduction from 18GB to 6GB by vertical partitioning.

Security
No dependency on script to grant/revoke use access. It can be done through a simple CSV mapping sheet.

Connectivity: **58**-self-service spreadsheet reports and 2 PBI dashboards are connected seamlessly.

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