

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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