Data Lakehouse Architecture for Unified Analytics

Design and implementation of a data lakehouse architecture that combines the reliability of data warehouses with the flexibility of data lakes, providing a single platform for BI, reporting, and advanced analytics.

PRACTICE

Applied AI and Data

CLIENT PROFILE

Federal agency consolidating disparate data warehouses and data lakes into a unified analytics platform that supports both structured reporting and unstructured AI/ML workloads

Challenge

- Data siloed across multiple warehouses, lakes, and departmental databases
- Duplicate and inconsistent data across systems undermining trust in analytics
- Separate platforms required for BI/reporting and data science workloads

Approach

- Design lakehouse architecture with schema enforcement, ACID transactions, and open table formats
- Implement medallion architecture (bronze/silver/gold) for progressive data refinement
- Build automated ingestion pipelines with data quality validation and lineage tracking
- Enable self-service analytics with governed access to curated gold-layer datasets

Typical Outcomes

- Single platform supporting BI dashboards, ad-hoc queries, and ML workloads
- Improved data quality and trust through automated validation and lineage
- Reduced total cost of ownership by eliminating redundant data platforms

Procurement Paths

- NASA SEWP V and SEWP VI for data platform infrastructure
- GSA MAS for data architecture and engineering services
- CIO-CS (NITAAC) for enterprise data solutions

Compare vehicles and ordering steps on **How to buy**.

Partner Technology Examples

- Elastic
- AWS GovCloud
- Microsoft Azure
- Dell Technologies

This is a representative use case. To request a briefing or a quote, contact Norseman Defense Technologies at 410.579.8600 or sales@norseman.com.