A FirstEigen White Paper

Operationalizing Data Trust at BigQuery Scale

How DataBuck, Dataplex, and Gemini Enable Enterprise-Grade, Context-Aware Data Management

Gartner Cool Vendor

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Executive Summary

Large enterprises are rapidly standardizing on Google BigQuery as the analytical backbone for enterprise reporting, advanced analytics, and AI initiatives. While BigQuery delivers unmatched scale and performance, data management leaders are discovering that **speed without trust is a liability**.

This white paper examines how enterprises—exemplified by Verizon—are operationalizing data trust at scale by combining FirstEigen DataBuck, Dataplex, and Gemini to create a closed-loop, intelligent data management fabric.

The Enterprise Reality: BigQuery at Massive Scale

For many global enterprises, BigQuery is no longer just a data warehouse. It is the system of record for analytics and AI. Typical BigQuery estates include tens of thousands of tables, high-velocity pipelines, and hybrid integration with platforms such as Cloudera and Teradata.

Why Traditional Data Quality and Governance Break Down

Static rule explosion, performance trade-offs, siloed governance, limited root cause insight, and AI without context undermine data trust at scale.

Static Rule Explosion

Traditional data quality tools require manual rule creation that cannot keep pace with enterprise scale

Performance Trade-offs

Quality checks compete with production workloads, forcing compromises between trust and speed

Siloed Governance

Governance metadata lives separately from operational systems, creating blind spots

Limited Root Cause Insight

Quality tools detect issues but lack the context to diagnose underlying causes

AI Without Context

AI initiatives fail when models consume data without understanding its trustworthiness

Verizon: A Reference Model for Data Trust at Scale

Verizon operates one of the most complex data ecosystems in the world. Using DataBuck, Verizon established monitoring for 20,000+ tables in under 6 weeks, reduced business errors from 75/day to 5/day, eliminated finance errors, and cut false alerts from 4,000+/day to ~280/day.

20K+	93%	100%	93%
Tables Monitored	Error Reduction	Finance Errors Eliminated	False Alert Reduction
Established in under 6 weeks	Business errors dropped from 75/day to 5/day	Zero finance errors achieved	Cut from 4,000+/day to ~280/day

The DataBuck Approach

DataBuck executes context-aware data quality directly inside BigQuery. It processes 100M+ records in under 90 seconds with no performance impact and delivers ~90% reduction in false alerts.

Context-Aware Quality

DataBuck executes context-aware data quality directly inside BigQuery, eliminating the need for data movement or external processing engines.

Performance at Scale

It processes 100M+ records in under 90 seconds with no performance impact and delivers ~90% reduction in false alerts.

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Strategic Implications for Data Leaders

Data trust becomes a platform capability, governance becomes operational, AI demands explainable data, and hybrid is the norm.

Data Trust as Platform Capability

Trust is no longer a separate initiative but an embedded platform capability that scales with your data

Governance Becomes Operational

Governance metadata drives operational decisions in real-time, not just compliance reporting

AI Demands Explainable Data

AI initiatives require transparent, trustworthy data with clear lineage and quality signals

Hybrid is the Norm

Modern enterprises operate across cloud and on-premises platforms requiring unified trust frameworks

Dataplex Integration

DataBuck publishes real-time trust scores into Dataplex, making trust discoverable, measurable, and actionable at the point of data consumption.

Gemini Integration

Gemini provides contextual AI for intelligent discovery, guided diagnostics, and assisted remediation using metadata from Dataplex and quality signals from DataBuck.

Root Cause Intelligence

By correlating lineage, job logs, and quality results, DataBuck accelerates root cause analysis and reduces MTTR.

Conclusion

Enterprises that succeed with BigQuery are those that scale with confidence. DataBuck, Dataplex, and Gemini together enable trustworthy analytics and AI.

> **About FirstEigen DataBuck:** FirstEigen DataBuck is an enterprise data quality and trust platform for modern cloud and hybrid data ecosystems, supporting BigQuery, Dataplex, Databricks, Snowflake, Cloudera, and Teradata.