

COMPLIANCE CASE STUDY

Meeting Compliance Demands While Reducing Costs and Improving Operational Efficiency

Background

The commercial finance division of a diversified Fortune 10 company developed an affinity credit card data warehouse to serve their marketing and risk departments. The system rapidly grew into a mission-critical application supporting both internal groups and external customers who receive analyses from the data warehouse as part of their service contract.

Issues

PCI Auditing and Compliance Demands

Company auditors required documentation that Federal Payment Card Industry (PCI) regulations for protecting personal data such as credit card number and social security number were being followed. That is, the company needed to audit and report on all access and use of this data in the affinity card data warehouse. In addition the company needed to actively enforce the compliance policies in place to protect the data.

Slow Performance Reduced Service and Productivity

At the same time, growing numbers of users ran reports against the data warehouse that degraded performance, which reduced user productivity and delayed customer reports. The data warehouse extract, transform, load (ETL) processes were suffering from performance problems, reducing availability for business analysts. The company decided to assess capacity requirements to ensure the system could support both current and future demands of this business-critical application.

However the company had no way of analyzing actual user query behavior or assessing its impact on system performance and availability. The company also had no way of controlling inefficient query behavior. Without these capabilities a capacity planning process would be ineffective.

Capabilities Needed

- Audit and control access to sensitive data to meet PCI compliance
- Identify performance impacting data warehouse reports and queries
- Performance tune the database based on actual query usage
- Control user queries and change inefficient user behavior

Teleran Solution

- **Delivering Compliance Auditing and Access Control**
iSight usage auditing was deployed to capture all access to sensitive customer data covered by PCI compliance regulations. Standard iSight reports were provided to auditors to confirm that data usage was in compliance with PCI. iGuard data access policies were deployed to prevent unauthorized access to PCI covered data, providing the company with explicit and provable controls required by auditors.

Key Challenges

- Auditing & enforcing PCI Compliance
- Improving query performance
- Increasing service levels

Requirements

- Compliance auditing and enforcement
- Performance monitoring
- Query & user management

Teleran Solution

- Delivered compliance auditing and reporting
- Protected sensitive data in real-time
- Prevented runaway queries that impeded performance
- Improved service levels

Teleran ROI

- Reduced cost of compliance: saving \$800,000
- Improved query performance by 45%
- Improved capacity by 25%

- **Eliminating Performance Problems**

Actual usage patterns were identified by iSight that impeded query throughput and performance. iSight usage metrics highlighted database design improvements that increased performance, such as building indexes and forcing constraints to be used. iSight also highlighted inefficient user querying that degraded overall performance. A number of queries pulled down over four gigabytes of data, reducing performance and wasting system resources. One poorly structured query ran for 20 hours while some users were running unconstrained queries against a multi-billion row transaction fact table. To address these and other usage issues uncovered by iSight, iGuard usage policies were used to improve performance and productivity by eliminating:

- Execution of unconstrained "select *" queries
- Queries that did not include "where clauses" or did not use a partition key
- Queries that executed Cartesian products (cross-product joins)
- Queries that executed too many joins or included too many "in" values

Teleran Benefits

PCI Compliance + Faster Problem Resolution + Improved Performance

iSight reports met the standards for PCI compliance auditing and reporting without any additional report creation or programming, while iGuard delivered the access controls necessary for compliance. iSight usage monitoring also provided the facts to quickly identify problem users, queries and applications which had negatively impacted data loading, production query performance, user productivity, and customer service. iSight reporting enabled staff to isolate performance issues and directed remedial action including application and database tuning. In addition iGuard policies prevented performance degrading user behavior and guided users in real-time to more efficiently and responsibly interact with their application and the data warehouse. In addition,

Teleran ROI

- PCI compliance requirements were addressed saving \$800,000 by avoiding the purchase of compliance-only software solutions.
- The use of Teleran controls and usage analysis generated 25% more capacity in current environment.
- On average query response times were improved by 45%.
- End-user behavior was better controlled, improving query performance, business productivity, and customer service.
- Data maintenance processes were streamlined, improving availability.



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