

performance MANAGEMENT
a white paper



Performance Management for Enterprise Applications

Improving Performance, Compliance and Cost Savings

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Performance Management for Enterprise Applications

In today's economic environment it is vital for companies to ensure that their enterprise and Web applications serve and satisfy their customers. Managing these applications presents the challenge of ensuring availability and performance while delivering business value. Managing the interdependencies of application performance, revenue growth, and customer satisfaction is critical to delivering a rapid return on investment from these business-critical applications.

Effective application performance management focuses on keeping applications optimally running, minimizing downtime and meeting service level agreements. These are not simple tasks in today's complex computing environments. Vast arrays of application and Web servers, sophisticated global networks, ever larger and more complex databases, and increasing numbers of compliance regulations all serve to make the modern application environment increasingly complicated to manage and protect. An underlying challenge for application managers is to gain a comprehensive view of this complex application environment enabling them to ensure that performance issues are immediately identified and remediated, compliance regulations are addressed and operating costs are minimized.

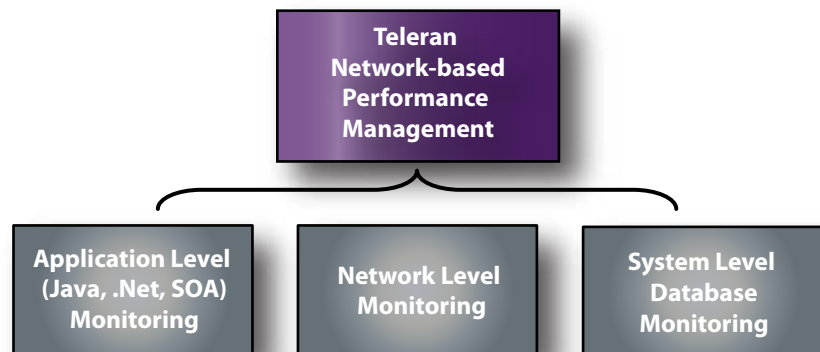
Key Teleran iSight for Enterprise Application Usage Management Benefits

- Reduces TCO, by reducing Total Cost of Maintenance (TCM)
- Minimizes TCM by reducing time to identify, diagnose, and correct complex performance problems
- Provides real-time performance analytics for application performance monitoring and diagnostics
- Reduces compliance risks by delivering detailed user, application and data usage patterns
- Minimizes risk of down time and application failure with proactive diagnostics and alerts
- Justifies ongoing investment in applications based on tracking business use of applications
- Improves application usability by detecting application errors encountered at the database
- Delivers management dashboards and detailed analyses that provide value to the entire application support team

Network-based Performance Management of the Application Environment

Teleran offers a proven solution for delivering comprehensive visibility and performance management across the entire application environment: the business users, the applications and the back-end databases. Teleran's solution fills a gap in the performance management spectrum of tools. While the monitoring of specific application, network and database components is important, organizations need a broader perspective to be able to view and tie together activity across these components to truly manage and address performance problems when they arise. Teleran's solution delivers insight into how the components are interacting with each other, pinpointing where problems really are occurring, and saving time and money in solving issues before they impact the business. By virtue of its network-based architecture, Teleran's solution installs quickly and delivers its holistic and continuous view of the health of your applications.

Teleran Ties It All Together

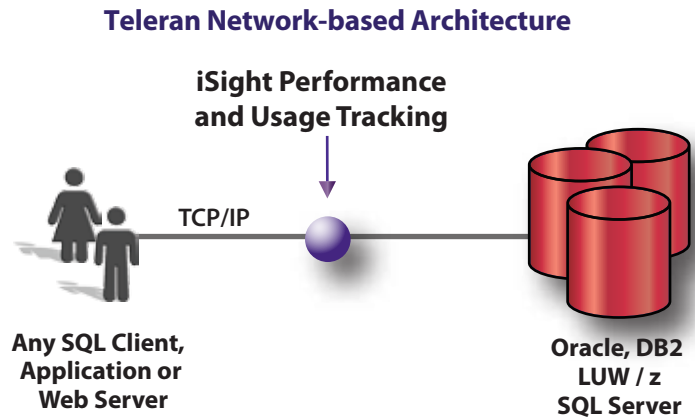


Teleran, a leader in application usage management software, delivers a patented product suite that provides comprehensive awareness of the user, application, and database activity. Teleran's performance monitoring and real-time analysis capabilities enable IT to improve performance and manageability across enterprise applications while reducing support and system costs. The Teleran product suite includes:

iSight™ continuously captures usage activity, providing a "top down" performance perspective of the entire application environment. iSight captures granular performance and usage information across key dimensions of the application environment: named business users and their organizational context, application activity, SQL transactions and data usage, as well as performance, errors and result set metrics.

iSight Analytics delivers real-time comprehensive visibility and insight into all application activity and performance. It transforms the granular level of data captured by iSight monitoring into actionable performance management information as well as compliance auditing and reporting. With performance management dashboards and detailed forensic analyses, iSight Analytics provides an easy-to-use performance management solution that requires minimal training and yields immediate value.

Teleran's network-based architecture enables Teleran's solution to operate transparently and continuously on the network without degrading database or application performance. Unlike "snap-shot" system and database performance monitors, Teleran's iSight requires no resource-consuming "in the database" agents, traces or monitors or programming changes to applications.



Key Product Features and Differentiators

- Light-weight, non-invasive and network-based, requiring no database agents or processes that degrade performance
Continuous monitoring without any overhead on the database or application latency
- Granular database protocol packet analysis combined with user, application and database activity delivers deep insight across entire application environment
- Real-time analysis pinpoints issues and immediately alerts IT staff
- Easy to install requiring no complicated instrumentation on every application server
- Comprehensively captures 100% of network traffic from all applications to the database
- Provides 360° visibility and business value context by combining and analyzing the business context, user, application and database activity
- Compliance auditing and reporting delivers additional value and protection
- Complements and extends the value delivered by application monitors as well as database level monitors such as DB2 Work Load Manager or Oracle Enterprise Manager

Teleran Case Study

Fortune 100 Company Experiences Performance Problems with Key Customer Facing Application

Background

A major Fortune 100 company, a leader in Six Sigma and TQM manufacturing, was experiencing intermittent performance problems with one of their largest global customer facing applications. This highly visible system was responsible for booking a large percentage of their sales by internal sales, field sales, independent sales reps and customers. Outages and brownouts meant lost revenue, lower profits, and customer dissatisfaction.

Challenge

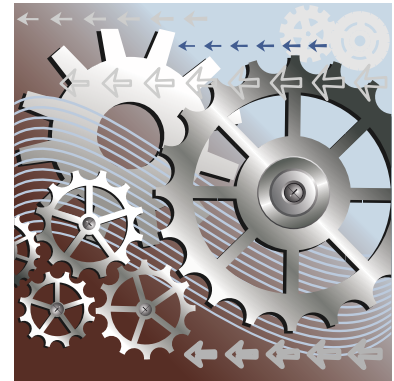
The problems seemed to be related to the massive number of transactions, over 300 million, processed every day. Unfortunately, the existing tools that the customer used to diagnose situations like this were not helpful. Either they summarized activity at too high a level or they consumed too much database resource causing additional performance problems.

Solution

They needed a solution that would be very lightweight, non-invasive, able to collect comprehensive and granular performance data at the millisecond level, and able to produce appropriate analytics in real time. Based on successful experiences in their data warehouse environment with Teleran, the company turned to iSight for help. iSight met their critical requirements:

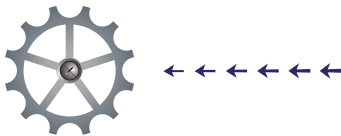
- It could not negatively impact performance within the production environment.
- It had to provide continuous reporting, especially through the periods of problematic performance.
- It had to provide performance and usage data that was sufficiently fine grained to be able to see all of the individual transactions and their respective metrics.

The system was installed in hours, and was providing immediate analytic insight into the situation. Together Teleran's and the company's analysts quickly eliminated the database as the cause, digging deeper they discovered that as the load increased a key component of the application server could not scale up to respond quickly to the transactional demand. With this information, the company's systems engineers were able to quickly remediate the problem.



Results

The company estimated that Teleran's iSight solution reduced the time to correcting this problem by two weeks. Between the staff cost of meeting, reporting, repairing, and the lost revenue, the company estimated that iSight saved approximately \$1.6M for this one occurrence. Teleran's solution is now fully integrated into the company's environment and is part of their reference architecture for new and legacy mission-critical applications.



Conclusion

The cost of application downtime is measured in tens of thousands of dollars per hour for mission-critical applications. This measure takes into account lost productivity, lost revenue, and customer dissatisfaction among other things. Today, application owners and their support teams need tools that can provide visibility into the complex behavior of their systems to detect and avoid the conditions that adversely affect performance and cause outages. They need tools that can guide them to the problem hot spots for immediate remediation and resolution.

With the total cost of a major outage easily growing to six or seven figures and the fallout causing a, "you bet your job" event, these tools are not a luxury, but have become a necessity. The Teleran Application Usage Management Solution is uniquely positioned to provide the needed power, functionality and agility to meet the needs of the most complex applications environment, providing concrete and actionable information to solve problems quickly and more importantly, to avoid them in the first place.

Description of Teleran Performance Management Solution

What follows are more detailed descriptions of Teleran's product suite: iSight and iSight Analytics.

iSight: Network-based Application Performance and Usage Tracking

Revealing Performance Issues Across the Application Environment

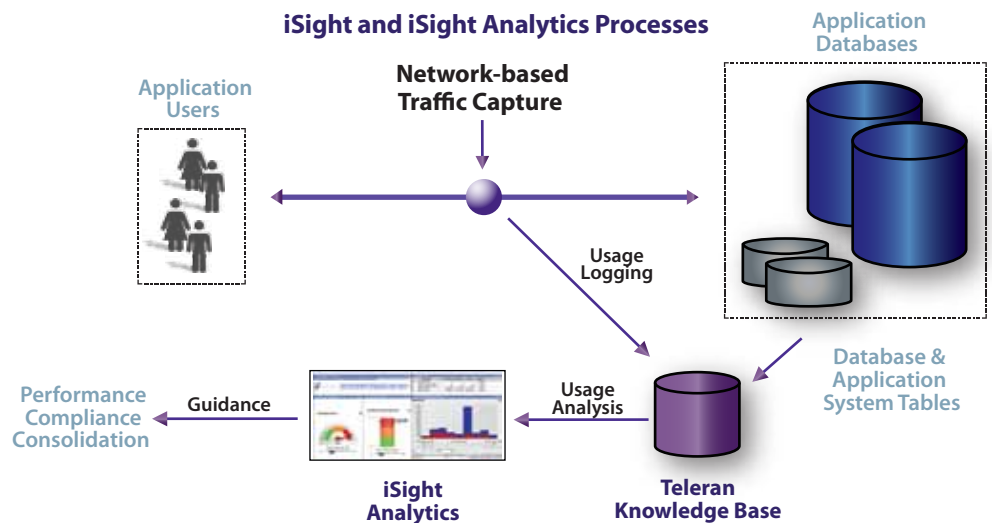
Teleran's iSight continuously captures performance and usage activity, providing a "top down" perspective of business user behavior and application and data usage trends over time. iSight captures performance and usage information across key dimensions of the application environment: named business users and their organizational context, application activity, and data usage, as well as performance, errors and result set metrics. Because iSight focuses on users and applications, it highlights problems in the environment not visible via database-only oriented utilities and application level monitors. iSight network-based usage capture method does not put any overhead on the database or introduce transaction latency.

iSight Analytics Performance Solution

iSight's Identity Persistence™ and Business Context™ features associate the named business user and his or her specific business context (ex. business unit, location, department, and role) with the actual query that gets processed by the database. Most applications log into the database with a generic or proxy ID, masking the business user identity to any database monitoring facility. Teleran's Identity Persistence ensures that the user's identity is not lost as the transaction is processed at the database. This enables Teleran's products to monitor users and transactions based on who the named business user actually is and their place in the business organization. Connecting the application user and his or her business context to application data usage is a critical element to ensuring that business needs are understood and met by IT as well as ensuring that performance fixes are appropriately prioritized.

Logging and Analysis of Usage Data

iSight automatically creates, configures, and maintains its usage database or Knowledge Base of performance and usage metrics. At installation and then periodically, iSight models the system catalogue tables of the database(s) and applications to which it is profiling access. This enables iSight to maintain a current understanding of users, applications and database objects, and their relationships including tables, columns, views, joins, indexes, stored procedures, and others.



iSight Analytics – Comprehensive Usage Analysis and Reporting

Delivering Performance and Usage Management Insight

iSight Analytics delivers comprehensive visibility and insight into application activity. It transforms the granular level of data captured by iSight auditing into actionable information. iSight Analytics analyzes activity across four key dimensions of your application environment: users, applications, SQL, and the data model. Using a fast, intuitive, business intelligence interface, iSight Analytics facilitates decision-making with three solution modules that address key management areas:

- Performance
- Compliance
- Database and Application Consolidation

iSight Analytics brings a holistic visibility of application usage within a business context by associating user, application and data usage activity with specific business unit, geographies, roles and other organizational attributes. This enables application management to see the big picture and ensure that all resources are aligned to address the business needs and deliver the highest ROI to the business.

Key iSight Analytics Capabilities

- Delivers real-time performance monitoring, alerting and analysis
- Provides dashboards and key performance indicators (KPIs) for IT and business stakeholders
- Combines user and application level activity with detailed SQL analysis and database usage metrics
- Enables intuitive associative analysis with easy-to-use dashboards and diagnostics

What follows are more detailed descriptions of the iSight Analytics Solution Modules.

iSight Analytics Performance Solution

Managing a large high-performance enterprise or Web application environment is a complex undertaking. Meeting agreed upon SLAs is an even more daunting task, especially if you lack holistic visibility across the entire application ecosystem. The iSight Analytics Performance Solution delivers the needed visibility and insight into the most complex environments, allowing you to “see the forest”, isolate problems, and drill down “into the trees” for root cause analysis and remediation.

Key Benefits

- Identifies and resolves performance problems by analyzing usage activity across the entire ecosystem: users, applications, SQL statements and database objects
- Delivers top down exception reporting and analysis
- Ensures business objectives are met by providing both business and IT views of application performance

iSight Analytics Performance starts with a management-level dashboard that highlights overall performance indicators compared to SLA baselines and thresholds.

To address performance inhibitors, iSight Analytics Performance immediately pinpoints poor performing activities and anomalies, whether they are transactions or maintenance processes.

iSight Analytics Performance Dashboard



iSight Analytics Performance brings a business context to application performance management by correlating user, application and data usage with your organization’s business structure. This enables IT staff to identify and address performance issues by department, line of business, geography, or user and ensures that each user community’s objectives are met.

iSight Analytics Compliance Solution

Today, more than ever, application managers must vigilantly protect their organization’s information assets. Both external compliance regulations such as PCI and SOX and internal governance requirements mandate that companies ensure their data is appropriately used and protected. iSight Analytics Compliance Solution cost effectively delivers a comprehensive compliance monitoring, analysis and reporting facility for application environments.

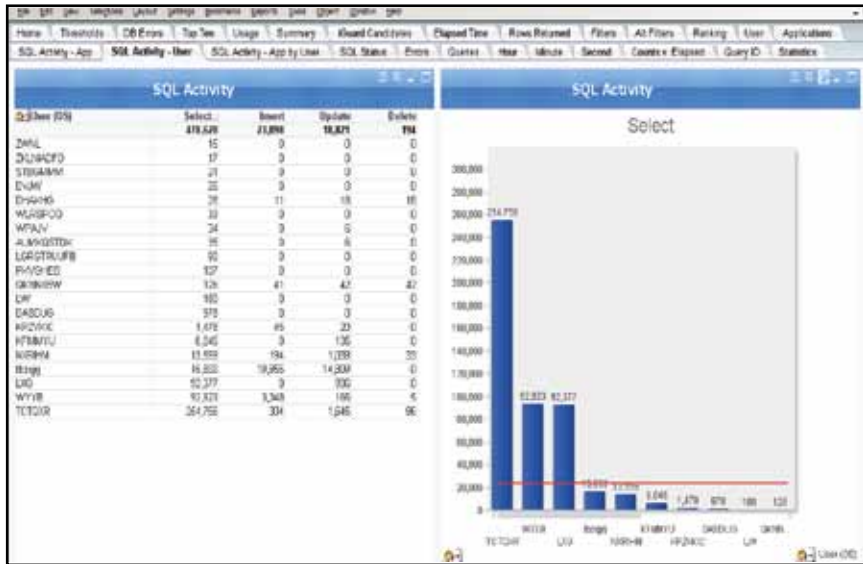
Key Benefits

- Ensures data is used appropriately by providing forensic analysis on who is accessing what sensitive data with what application and when
- Reduces risk by identifying and alerting management to suspicious activities and anomalies, ensuring immediate and appropriate response
- Delivers audit reports that address key regulatory and governance reporting requirements and lower the risk and cost of audits

iSight Analytics Compliance monitors access to sensitive data residing in tables and columns across key dimensions: user, application, SQL statements, data model, and time.

It also tracks data manipulation activity including inserts, updates, deletes, and database activities such as granting permissions, and adding and deleting tables also across key dimensions. Alerts are delivered via a wide range of media including email, pager, and SMS text messaging.

Sample iSight Analytics Compliance Report



iSight Analytics Database and Application Consolidation Solution

Whether due to mergers and acquisitions or business units resisting migration to a corporate standard, applications and databases have proliferated across companies. IT organizations recognize database and application consolidations as a means of significantly reducing IT costs and management complexity. iSight Analytics Consolidation Solution delivers unique insight into how applications and databases are used in the legacy environments in order to: identify what applications and databases should be consolidated, develop the best performing and most cost efficient combined data models, and guide capacity planning.

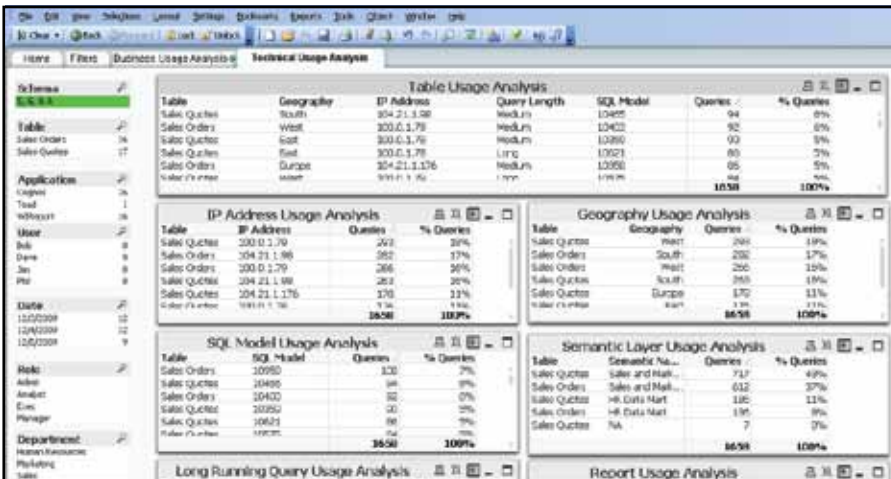
Key Benefits

- Speeds consolidation time to market while reducing overall project costs, risks and effort
- Captures baseline application and data usage metrics to guide consolidation projects
- Guides projection of system resources required by analyzing resource demands in the legacy environments
- Ensures consolidated environments meet the needs of business and result in lower costs

iSight Analytics Consolidation provides data usage information down to the column level as well as identifying query patterns, including summarization, grouping and join patterns that provide critical input into designing optimal consolidated database models.

iSight Analytics also baselines database workload characteristics that provide critical input into projecting system resource requirements in the consolidated environment.

Sample iSight Analytics Consolidation Analysis



iSight Analytics Cost-Effectively Delivers Value to Both IT and Business

iSight Analytics provides essential, easily distributable BI management information for key organizational roles including analysts, application managers, DBAs, systems staff, IT management as well as business unit managers. Here are examples of how iSight and iSight Analytics are used and valued in one of the world's leading financial services firms:

Application / Data Warehouse Managers

Application managers receive summarized performance, resource use, and exception reports that guide the allocation and management of system and staff resources as well as assist in budgeting and capacity planning.

IT Management

Managers receive summarized iSight Analytics service level reports to monitor commitments to the business and compliance audit reports confirming data compliance policies are enforced.

Business Unit Managers

Business unit managers use iSight Analytics to identify what information their staff values and to confirm that analytical applications are actually being used as intended. Business managers also receive charge back reports that calculate charges based on actual use.

DBA / IT Staff

DBAs and IT system staff use iSight Analytics to identify and resolve performance and user problems. These reports give DBAs actionable detail to maintain application performance and quality, and to identify when and where to use point-in-time system-level database administration tools.

Compliance Staff

Compliance staff uses iSight and iSight Analytics to monitor adherence to compliance policies and to address audit and reporting requirements.