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Solution Showcase: HUK-COBURG Insurance Group Ensures Superior SQL Performance

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HUK-COBURG Insurance Group Ensures Superior SQL Performance

Information Technology (IT) plays a critical role for the HUK-COBURG Insurance Group of Germany and its more than 7 million customers. Founded in 1933, HUK-COBURG has a number of subsidiaries providing vehicle, casualty and accident insurance, life insurance, and health insurance. In addition, the company operates a savings and loan association and a service company to provide customers with support 24x7.

Behind the scenes, business systems and applications running on z/OS—many of which rely on DB2—have long provided crucial support for the company. However, the introduction of a new subsidiary named HUK24 has brought IT business systems and applications to the fingertips of HUK-COBURG customers. That's because HUK24 is a 100 percent online insurance company.

"HUK24 has experienced tremendous growth," explains Manfred Nehab, DB2 specialist at HUK-COBURG. "Last year, HUK-COBURG took in more than €4.1 billion in contributions and members placed almost €200 million into their accounts with the HUK-COBURG savings and loan association. At the end of 2004, the group had capital assets of €17.3 billion."

While the strength and positive reputation enjoyed by HUK-COBURG has enabled the company to attract new customers for HUK24, continuing customer satisfaction was achieved through fast, secure, and reliable online customer access to the information they require, whenever they want it. With a large-scale DB2 database at the core of HUK24, the HUK-COBURG IT team implemented the techniques and tools to ensure optimized DB2 monitoring and tuning.

High-Performance Requirements

"High performance is critical to ensuring a good online customer experience and high customer satisfaction," says Nehab. For HUK-COBURG, IT teams comprised of application developers and database administration professionals deliver high performance. Equally important is a devotion to meticulous quality management, standards, and continuous performance measurement that result in the rapid delivery of improvements to maintain and exceed service-level expectations.

"But our absolute goal was to provide the fastest possible response time," Nehab explains. "Automation and proactive management are critical to make certain we address any performance degradation issues before they become noticed by customers." At the time, though, the company was using a number of internally developed tools that had been cobbled together. The business importance of the new system revealed the need for a comprehensive, interactive solution for DB2 SQL performance management that would meet immediate requirements while scaling to meet anticipated future growth for a high-performance DB2 z/OS environment. These initial requirements included:

- An end-to-end, highly automated process that manages the entire range of tasks from application development through production processing
- The combination of interactive support for application development, highly automated mass analyses, and evaluations in production within a 24x7 operation
- The ability to monitor, measure, and implement proactive, preventive measures that address performance issues instead of operating in after-the-fact, reactive mode.

Product Evaluation and Results

HUK-COBURG installed and evaluated a number of different software solutions before selecting the SQL PerformanceExpert and Bind ImpactExpert products from SOFTWARE ENGINEERING GmbH. During the evaluation, the IT team gained insight on product capabilities and quickly embraced new methods for ensuring high performance such as:

Reliable mass analysis of access paths: While typical SQL performance analysis processes can identify each and every problem SQL statement, SQL PerformanceExpert additionally performs a mass analysis of all SQL statements and immediately validates access paths at the application level. Such analysis is done in both the production and quality assurance environments. Coding violations are automatically pinpointed and recommendations on how to improve the coding are provided as feedback to the developers. Particularly beneficial is the fact SQL PerformanceExpert simulates the production environment and analyzes static and dynamic SQL statements in the context of how they will actually perform in production. Says Nehab, "We quickly identify and correct problem SQL in an environment that is virtually identical to production and don't waste time with statements that have insignificant impact on performance." Equally important, he notes, the company can perform a "what-if" analysis that is very helpful when forecasting transaction growth.

Automatic clean up of superfluous packages: In production, there are currently around 9,600 packages with different versions in case of a fallback. "During evaluation, we discovered that approximately 60 to 70 percent of all packages were superfluous," says Nehab. SQL PerformanceExpert automatically identifies and frees unnecessary packages, examines consistency of load modules and/or DBRMs to avoid SQLCODEs –805 and –818, and simplifies the investigation of packages that are

not bound. Additionally, the removal of unnecessary packages reduces complexity and saves storage space.

Automatic control of all bind and rebind activities: Using Bind ImpactExpert, HUK-COBURG automatically manages the performance impact of a package BIND or REBIND. Thus, access path degradation resulting from REBINDs is eliminated during nightly maintenance and the pre-checking of access paths before BINDs is now enabled. With Bind ImpactExpert, REBINDs are now automatically monitored following RUNSTATS and REORGs. Since Bind ImpactExpert allows only those REBINDs that improve the access path, a considerable load is removed from the system by preventing superfluous REBINDs.

Nehab explains, "Nasty surprises are avoided because deterioration in access paths is blocked." In production each day there are an average of 1,600 REBINDs to be carried out following maintenance runs—however, with Bind ImpactExpert, less than 10 percent of these are performed, all of which guarantee improved performance on the package level. In the test environments, an average of 45,000 rebinds are pending every day, but only 0.1 to 1 percent of these are actually executed. Nehab is relieved to know that when HUK-COBURG migrates to DB2 Version 8, application performance will be secured because Bind ImpactExpert provides automatic global REBIND support any time upgrades or APARS are implemented.

Additionally, Nehab says, "The integration of Bind ImpactExpert into our existing BIND processes eliminates unnecessary BINDs and pinpoints BINDs of changed applications that are likely to cause access path degradation."

Benefits Realized

Using these tools, HUK-COBURG has implemented a number of additional quality procedures that now safeguard against unpleasant surprises while realizing considerable savings by eliminating superfluous resource usage. Since all activities are recorded for historical reporting and evaluation, it is possible to perform a trend analysis at any time and use that information for proactive performance modeling. "For example," Nehab explains, "the quality level of a specific application developer group can be compared to the average, which provides justification for increased staff training on the subject of DB2 performance or program improvement measures."

The SQL PerformanceExpert and Bind ImpactExpert products from SOFTWARE ENGINEERING form a coordinated concept and thus enable the goal of comprehensive quality monitoring and control of database access. SQL PerformanceExpert provides effective support to help application developers and database administrators reach a high-level of quality and enables tuning of production applications.

Bind ImpactExpert automatically ensures that quality standards are kept and maintained and that performance-relevant changes are pinpointed in good time. The tools are very simple and easy to operate and need so little familiarization time that—as practice has shown—both DBAs and developers see it as a welcome support. Nehab says, "The SOFTWARE ENGINEERING tools complement each other to form a complete solution and can also be individually integrated into existing automated processes. We expect our return on investment to be reached very quickly." z

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