

“The positive results from using the RAT option for the first time enable us to look to the future and the upcoming changes in a much calmer manner than before.”

– CHRISTIAN DUSCHL,
Teamleader System Operations Management



**Stadtwerke Munich
Services GmbH**

Industry:

Utility/Public Sector

Annual Revenue:

€4.2 billion

Employees:

Around 6,800

SUCCESSFUL TEST OF ORACLE DATABASE 11g RELEASE 2 REAL APPLICATION TESTING OPTION AT STADTWERKE MUNICH (SWM)

Making a change to the SAP database can represent a significant risk to an organization. The effects of an unexpected problem could be widely felt and have serious consequences. For this reason, testing of changes prior to production deployment is considered critical. The cost involved in testing using traditional methods can be very high both in time and money. Even after testing, many problems will only be discovered in production, and as a result end-users will suffer from poor performance or possibly even outages.

The Real Application Testing (RAT) Option is comprised of two complementary features, SQL Performance Analyzer (SPA) and Database Replay. Together, these features can help ensure that database changes do not negatively impact SAP availability and performance. They significantly improve the quality and lower the cost of testing changes to the SAP database system.

Facts instead of surprises

The IT specialists at SWM, are among the pioneers who are using the Oracle Database 11g Release 2 Real Application Testing option together with the SAP application.

SWM Stadtwerke München, a public utility and service company based in the mega city of Munich that offers a wide range of products, has data volumes of more than 3 Terabyte which are being accessed by 1500 to 1800 SAP users. The CPU utilization of the production systems is therefore extremely high.

For Christian Duschl, SAP Team-Leader System Operations Management, the risks and contingencies associated with making changes to the SAP environment were always a high-cost challenge: “Previously, we were not able to determine the dialog load with sufficient precision before commissioning new systems. Surprises were part of our day-to-day work. Having used RAT for the first time and gained some experience with it, we believe that this will finally become a thing of the past.”

The test scenario was compressing the database using the Advanced Compression option and to examine the effects on system performance. The production load of two RAC nodes was recorded over two working days and the database was transferred to a test server along with the data volume for this period.

In a first step, the database was reorganized in a conventional manner, without being compressed. A representative 12 hour section of the recorded production load was then replayed. The replay contained the SAP ERP user load only. Other applications, such as those from the call center area (non-SAP), were not taken into account and were filtered out during replay.

The results from the replay were later used as a basis for further analysis. In the next step, all tables and indexes were compressed using OLTP Table, SecureFiles and Index compression.

A second run, which included exactly the same dataset as the first run, was then tested against the compressed database and the results were compared with the first run.

No additional costs and less disk space

Manfred Fischer, Manager of SAP system maintenance in information and process technology and general coordinator of the RAT project, summarizes the results as follows:

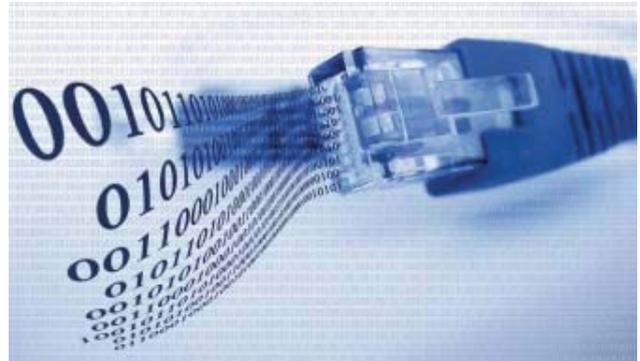
“When we were recording the basic data over two days for the test, we couldn’t find any negative effects on the CPU or I/O load of the production system and the dialog response times didn’t change.”

The compression result was quite impressive. The amount of disk space shrunk from almost 3.6 TB to around 1.6 TB, resulting in a space saving of 55%.

“What was even more interesting was the effect on the CPU load when using compression. The result was amazing. Thanks to the enormous reduction in I/O of almost 60% and considerably better utilization of the main memory, the additional costs expected for compression were compensated in full for the CPU load. Another positive side-effect was a slight increase in transaction throughput. Because the hit rate of the database buffer cache improved considerably, there was less physical I/O to the disk subsystem.”

As the solution does not show any performance impacts, the Advanced Compression option can be used on the SAP ERP production systems at Stadtwerke München if necessary.

According to Manfred Fischer, SQL Performance Analyzer (SPA) also proved to be a key functionality. It was particularly helpful in evaluating the performance of important queries at statement level, which must not be negatively impacted.



Calculated risks and cost savings

In the future, the SAP environment at Stadtwerke München is to be split into three units (Network, Delivery and Coresystem) which will be designed to mirror the data volumes in the production system and various test and security systems, among other things.

Because each one of these segments should have the capacity of the current system, the data volumes will triple in the final expansion stage.

Given such complex tasks, Christian Duschl is giving an extremely positive conclusion from the test results with RAT:

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Unknown risks when making release changes, growing data volumes or deregulating an entire SAP system, as was the case here, loose their fears for many users at least for the database level. Using RAT will enable IT departments to demonstrate extremely positive cost-value results to the controlling departments.