



SQL
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SQL Server 2008 offers small and mid-sized businesses a wide range of performance enhancements, including: Greater scalability; enhanced utilization of disk space; Policy-Based Management, and improved security and encryption. This means the organization can be more flexible in responding to business events and, over time, can deliver significant improvements in ROI. Companies that have already upgraded are seeing improvements and savings ranging from 20 percent to 60 percent in some areas, and Forrester Consulting points to one customer that broke even on the deployment in just six months. This article explores ways in which small and mid-sized businesses can improve the performance of their databases — and their businesses — by upgrading to SQL Server 2008.



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For Small & Mid-Sized Companies

Want Better Performance From Your Database? It's Probably Time To Upgrade to SQL Server 2008

NewsGator Technologies is a relatively small company with a relatively humongous appetite for data. The company, which has only 65 employees, utilizes 4 terabytes of storage to aggregate and store more than 2.5 billion RSS articles for its customers.

Like many small and mid-sized businesses in today's increasingly global 24-by-7 world, NewsGator's ability to provide its customers with the most relevant products and services is fully reliant on the performance of its database software.

So, when the company had the opportunity to upgrade from SQL Server 2005 to SQL Server 2008 last year, it jumped at the chance. The result: Strong and measurable improvements in performance, a sharp decrease in downtime and a fully scalable database that is

ready to grow seamlessly to meet the company's ever-expanding need to deliver, store, manipulate and manage ever-expanding amounts of data.

Is NewsGator happy it made the move?

"We had been on SQL Server

2005 with good results," says Glenn Berry, database architect at NewsGator. "But we've been on SQL Server 2008 fully since February of 2009 and I would not want to go back."

Berry says as soon as NewsGator shifted from SQL Server 2005 to SQL Server 2008, it saw an immediate 10 percent to 15 percent performance improvement – just from features such as the query optimizer and memory manager. And that was before any adjustments were made on the part of the company. Now, less than a year later, Berry says NewsGator is seeing performance improvements and



SQL Server 2008 Upgrade Series

PERFORMANCE

savings ranging from 20 percent to as much as 60 percent in some areas.

Among small and mid-sized businesses, NewsGator is not alone in recognizing the benefits of upgrading its database software to SQL Server 2008 and in reaping the rewards of making that transition. A study by Forrester Consulting, commissioned by Microsoft, shows that an enterprise customer upgrading to SQL Server 2008 was able to deliver a return on investment of approximately 162%, with a break-even point of six months after the deployment. And, while those savings applied to a larger enterprise with 12,000 employees, much of the same technology and business advantages that are available to large enterprise customers are also being utilized by small and mid-sized businesses such as NewsGator.

INNOVATIONS TO IMPROVE PERFORMANCE

For small and mid-sized businesses the types of performance improvements that can be gained through an upgrade to SQL 2008, include:

► **Greater utilization of disk space.** Data compression in SQL Server 2008 enables organizations to reduce the amount of space needed to store tables and indexes. In addition, it is simple to utilize – requiring no changes in existing applications if you are upgrading from SQL Server 2005. More effective utilization of disk space not only improves the performance of disk storage systems, it can also result in significant cost savings.

► **Improved data mirroring.** Data mirroring reduces downtime for scheduled maintenance and enhances the organization's ability to

recover from disasters or other issues that can impact performance. It also strengthens the ability of the IT organization to make fixes throughout the database. In SQL Server 2008 Standard Edition, synchronous data mirroring is available as a standard feature. The Enterprise Edition offers asynchronous data mirroring.

► **Policy-Based Management.** This is a feature that is available on both the Standard Edition and the Enterprise Edition. By using the Policy-Based Management framework in SQL Server 2008, businesses can create centralized policies to handle



SQL Server 2008 Upgrade Series

PERFORMANCE

security, updates and naming conventions for organization-wide consistency and compliance. This can also be used to protect against unauthorized changes to database servers throughout the organization.

► **Additional enhanced data management capabilities.**

In addition to Policy-Based Management, SQL Server 2008 offers a number of other database management enhancements that increase productivity within the organization and better enable the business to control and monitor the performance of its databases.

► **Greater scalability.**
The business can grow its database, servers and storage

systems on an as-needed basis, without having to start from scratch or invest in technology upgrades that may be unnecessary or inefficient.

Overall, the enhanced functions of SQL Server 2008 allow small and mid-sized businesses to be more flexible in responding to the needs of customers and

needs of small and mid-sized businesses, some of which will make more of an impact than others, depending upon the business requirements of each individual organization.

For example, one of the key advances in SQL Server 2008 is performance management, including enhanced features that enable database

There are new features of SQL Server 2008 that address the needs of small and mid-sized businesses, some of which will make more of an impact than others, depending upon the business requirements of each organization.

employees. They also can result in improved business intelligence, as well as significant improvements in ROI. Breaking it down, there are numerous new features that address the

administrators to simplify performance management across the organization. One of the new features, **Performance Data Collector**, enables the organization to collect, analyze, troubleshoot and store SQL



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PERFORMANCE

Server diagnostics information. According to Microsoft, Performance Data Collector also provides an end-to-end solution for performance monitoring that includes low overhead collection, centralized storage of performance data in a management data warehouse and analytical reporting of performance data.

Another key advance in performance management for SQL Server 2008 is the **Resource Governor**, which is available in the Enterprise Edition and which enables the IT organization to better manage workload conflicts on individual servers. This is critical for small and mid-sized businesses as their database needs grow and they

try to maximize their investment without going through

Performance Data Collector enables an organization to collect, analyze, troubleshoot and store SQL Server diagnostics information. It also provides an end-to-end solution for performance monitoring.

too many costly upgrades. Resource Governor allows IT to

define limits on resources and set priorities so that mission-critical processes are never adversely impacted.

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USING SQL SERVER 2008 IN REAL-WORLD ENVIRONMENTS

For NewsGator, two of the key features that made upgrading to SQL Server 2008 so appealing were improved data compression and database mirroring enhancements. In particular, the addition of backup data compression to SQL Server 2008 Enterprise Edition enables the compression to be performed in memory before the data is transferred to the disk. This means backups run much faster because less disk I/O is required.



SQL Server 2008 Upgrade Series

PERFORMANCE

“I/O capacity was a problem for us, which is why we were intrigued by the enhanced data compression features of SQL Server 2008,” Berry says. “With the native backup compression, we’ve been hap-

py to trade some CPU performance for disk space. Backup compressions for us are now three to four times faster than they were for us before. Compression is a big one if you’re stressed on I/O capacity.”

“Another big win for us has been database mirroring,” Berry adds. “We’d been using database mirroring since 2006, but some of the enhancements, such as log stream compression and automatic page repair, have

IN MEASURING PERFORMANCE, SCALABILITY COUNTS

Like many small and mid-sized businesses, NewsGator Technologies relies heavily on its database servers to meet the growing needs of customers. Whether it’s for order fulfillment, inventory management or any number of mission-critical customer requirements, the ability of the database to be fast, responsive and available is crucial.

For NewsGator, those requirements are especially challenging because its ability to deliver its product to customers is wholly reliant on the performance of the database. NewsGator provides and aggregates RSS feeds and other content to media companies – such as CNN and USA Today – as well as to enterprise customers.

NewsGator’s SQL Server 2008 database averages about 6,000 operations a second in serving up content to its customers. During peak usage the number of operations can go up to 25,000 SQL Server I/O events. Because the database is constantly growing, the need for scalability was one of the key goals for News-

Gator in the upgrade from SQL Server 2005 to SQL Server 2008.

“We wanted to avoid having to go to bigger servers and what we wanted was to be able to just add more servers as we needed to scale,” says Glenn Berry, database architect at NewsGator. “Instead of a bigger box, we wanted to be able to have multiple servers.”

NewsGator’s SQL Server 2008 databases are hosted primarily on Dell PowerEdge servers with 4-way, 64-bit dual-core processors and 32 gigabytes of RAM. The biggest servers NewsGator uses are Dell quad-socket servers with 64 gigabytes of RAM. With the move to SQL Server 2008, Berry says, “We can pretty much add more servers relatively painlessly now, as we need them.”

NewsGator has also started to utilize Dell attached storage products. “We’re starting to use these PowerVault MD1120s. They hold 24 little 2-1/2-inch SAS drives,” Berry says. “That’s a lot of I/O for not that much money.”



SQL Server 2008 Upgrade Series

PERFORMANCE

been big for us. We have to have scheduled maintenance, and we use data mirroring for that, to eliminate downtime. Downtime is a big deal for us: People would get upset if we were down for any length of time.”

One of the advantages in the move to SQL 2008 is in NewsGator’s ability to improve performance and save money – and to actually be able to measure these improvements with great accuracy.

“You can run a system sort procedure and see how much you’re saving,” Berry says. “We’ve been seeing 20 percent to 60 percent space savings. It varies depending upon the type of data that you’re saving. The enhanced data compression works really well for data that is static. We were a good fit for that. For example, we store RSS feeds. We store the older posts in an archive – they are static

and we assume they will be there forever. Compressing that data was a big win for us – we saved almost one terabyte of space just on that.”

Another key feature NewsGator is utilizing to improve performance and reduce costs is integrated full text search. This

is a new feature in SQL Server 2008. Previously, NewsGator used a product from a third-party supplier and it wasn’t working out very well. “We had one full-time guy just doing that,” Berry says. “Now, we’re getting much better performance with much less maintenance.”

A WORD FROM THE WISE: UPGRADING IS EASIER THAN YOU THINK

At NewsGator, Berry was a pioneer in moving to SQL Server 2008. Next up, he says, the side of the business that sells solutions to enterprises is upgrading from SQL Server 2005 to SQL Server 2008 as well.

Berry’s main advice? Just do it. “It’s a fairly smooth upgrade,” he says. “It was harder, for example, to go from SQL Server 2000 to SQL Server 2005. SQL Server 2008 has been out for over a year now, so there’s no question about it being stable. And Microsoft is doing a good job in putting

out cumulative updates every eight weeks. Given the improvements in performance, it’s worth making the move. It’s just not that big a jump from SQL Server 2005 to SQL Server 2008. And, if anyone is still on SQL Server 2000, you should just go straight to 2008.” ▼