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"Jaw Dropping." DB2 10 Delivers the Goods.

Wes Simonds | May 1 2012 | Tags: time simonds data management o'mahony capabilities linux multi-temperature 10 travel information-insights windows wes db2 ibm software compression unix conor

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If you're looking for a can't-miss, bound-to-pay-off IT investment, I'm not sure you can do much better than upgrade your database architecture. I've written about this in the recent past in the context of migrating away from Oracle. But if you've already entered the 21st century, and are therefore using DB2, it's also really worth checking out the latest rendition.

That would be DB2 10 , which is so fresh to the market it still has that wonderful Golden Master scent to it that I still think should be bottled and turned into a cologne.

Recently I caught up with Conor O'Mahony , Program Director of Database Software for IBM, and he clued me in concerning the many new bells, whistles and deeper-level improvements that have been made to DB2 in this version.

The reported performance increase alone justifies the upgrade in my mind. You might expect that any software environment hitting a double-digit version number would be so mature and optimized by this point that performance improvements would be negligible.

Not so with DB2 10. Instead of getting slower, it's gotten faster -- a lot faster. In fact, there are tests that were run by Intel that show that query processing can go up by as much as 10 times when compared to the previous version of DB2 9 running on the same hardware.

'For software this mature, that kind of enhancement is jaw-dropping,' said O'Mahony. 'Usually such radical optimizations have happened earlier in the development history. But as with so many other things, the devil really is in the details. In DB2 10, we have added breakthroughs for processing certain kinds of queries, for retrieving data, and for accessing indexes. The aggregate outcome is really stunning.'

So you can see why O'Mahony uses the adjective 'jaw-dropping.' The thought of being able to handle 10 times as many transaction queries on the same hardware, just by implementing a software upgrade and taking advantage of new features, is probably enough to leave many IT managers stunned and blinking, like small children on Christmas morning.

And when you consider all the things your organization may rely on DB2 to accomplish across a product or service lifecycle -- from transaction processing to inventory assessment to data warehousing to customer service to marketing analytics -- you can see just what kind of business value the new performance optimizations are really likely to mean from a pragmatic standpoint.

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How many databases can you fit on the head of a pin?

And to continue the Christmas analogy, DB2 10 really is the gift that keeps on giving. For instance, consider the substantial improvements IBM has made in the way DB2 compresses data.

This has actually been a historical strength for DB2, and for good reason. The total costs of any database environment are significantly affected by storage costs; the less organizations have to allocate to storage resources, and maintaining them, the higher the payoff they will get over time.

That's why, in DB2 10, IBM has really gone the extra mile in implementing not just better compression, but a new class of compression. Whereas previous iterations focused on table-wide compression, DB2 10 augments that with page-level compression, thus allowing even more data to be squeezed into a given GB of storage.

How much improvement are we talking about -- and what kinds of savings can organizations get?

'That's a good question; first of all, I must say that compression rates can vary greatly from environment to environment,' said O'Mahony. 'However, more than one client has seen 7 times or greater overall space savings, with some tables achieving 10 times space savings .'

Think about that for a minute and you get a sense of what it means. Not only do organizations now pack far more data on their existing storage -- delaying the purchase of more storage -- but all storage-related tasks are accelerated, including jobs like backup/recovery. This is because the data, being compressed, moves from point A to point B that much faster.

So here, too, it's plain that the new enhancements really translate into not just impressive, but impressively widespread, business value.

Heating up the database infrastructure

Storage is also the focus of a completely different feature: DB2 10's new 'multi-temperature data management.' The idea here is that in any large database environment, not all data is created equal; some data is hotter (more widely and frequently used) than other data.

Similarly, not all storage tiers are created equal. Some are faster and pricier than others. So, ideally, what you want to be able to do is put your hottest data on your fastest storage tiers.

Solid-state drives (SSDs), for instance, are absolutely perfect for enterprise-class databases because of their stellar read/write times and because, given no moving parts, they are much more reliable than conventional spinning-disk drives (or as I like to call them, failures waiting to happen). But because in life you really do often get what you pay for, SSDs are also a lot pricier per GB.

What DB2 10 does is empower you to get the best possible utilization from your highest-performing, highest-cost storage tiers (like SSD). You can put your hot data on fast storage like SSD, and put your colder data on less expensive storage.

Thus, the most important data is not just much more rapidly accessed, but, in the case of SSD, better protected because SSD drives are intrinsically much more reliable.

Organizations that don't understand the past are doomed to repeat it

Storage improvements like that revolve around space, but it may interest you to know that DB2 10 is also the master of time. Specifically, it includes a new feature dubbed Time Travel, which, though it does not involve a flux capacitor, nevertheless delivers the goods.

The basic idea of Time Travel is that database queries often have implied time constraints. For instance, an insurance underwriter may need to know what kinds of policy terms were in effect at a certain point in time when a past event occurred, as opposed to the policy terms in effect now.

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While many organizations have jerry-rigged their own, hand-coded approaches to that kind of capability, possibly using flux capacitors, DB2 10 provides a formal, vendor-approved-and-supported rendition. This is integrated not just more deeply, but also (let's face it) more effectively -- it is very likely to be faster and more reliable than the homegrown flavor.

The fact that it's included in DB2 10 right out of the box also means organizations no longer have to worry about supporting their own code to provide that functionality, and can instead just build on the IBM version. So new database apps and services are rolled out faster, for lower development cost -- both major wins to any organization looking to get a competitive edge (which is to say, all of them).

Additional Information

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About the author
Guest blogger Wes Simonds worked in IT for seven years before becoming a technology writer on topics including virtualization, cloud computing and service management. He lives in sunny Austin, Texas and believes Mexican food should always be served with queso.

1. Based on tests of IBM DB2 9.7 FP3 vs. DB2 10.1 with comparable specifications using data warehouse / decision support workloads, as of 4/3/2012.

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