(May 28th, 2013)

If you know someone who you think would benefit from being an Insider, feel free to forward this PDF to them so they can sign up here.

Quick Tips for our Insider friends!

Hey Insiders!

This newsletter is coming to you from Redmond where we've got a few days downtime from our very successful month of classes in Chicago before we fly out to London on Friday and do it all again! It's a day later than usual because of Memorial Day here in the US.

In the previous newsletter I announced that we're creating some new classes – well three of them are now scheduled in September in Bellevue, WA and available for registration!!

- IE0: Immersion Event for the Accidental DBA (3 days, 9/30 – 10/2, Erin and Jon)
  - Dates, logistics, and registration
  - Detailed curriculum
- IEHW: Immersion Event on SQL Server Hardware (2 days, 9/18 – 19, Glenn)
  - Dates, logistics, and registration
  - Detailed curriculum
- IETS: Immersion Event on Advanced T-SQL (4 days, 9/30 – 10/3, Bob)
  - Dates, logistics, and registration
  - Detailed curriculum

We're really excited about these new classes and hope you are too!

Our Fall SQLintersection conference is now open for registrations, with a stellar line-up of speakers and sessions, coming to Las Vegas at the end of October. Read all about it here.

The most recent book I've read is Ronald Reagan's *An American Life*. Ever since naturalizing as a US citizen in 2012, I've become more and more interested with past Presidents and the world events in which they were involved. Reagan's second term as President coincided with my first 4 years at high school in Scotland, and so things like the war in Lebanon, the Iran-Contra scandal, and the beginnings of glasnost and perestroika were much discussed during my Modern Studies classes. This autobiography gave me a lot of insight into Reagan as a person and a President and I'm really glad I read it. The last 100 pages deal with his interactions with Mikhail Gorbachev and the personal letters between the two are fascinating. Highly recommended.

Please let us know if you liked what you read/saw here and/or have any suggestions for future Quick Tips.

Note: you can get all the prior Insider newsletters here.

Paul's Ponderings

Data compression is implemented in the Access Methods portion of the Storage Engine – the development team I used to manage before gaining responsibility for the whole Storage Engine – and the design phase took place while we were winding down the SQL Server 2005 release.

I clearly remember the inspiration for the design: make large data warehouse queries faster while allowing a huge reduction in the storage required for the data. The idea was to vastly reduce the number of data files pages necessary to store data (by compressing rows so many more than usual fit on a single data file page). This would lead to a similar vast reduction in the number of physical I/Os necessary to satisfy a very large data warehouse query, leading to performance gains AND a huge saving in the amount of storage required for the data.

The storage savings would then lead to reduction in yearly storage costs, making SQL Server even more attractive for business to use, and to migrate to from Oracle and DB2, where native data compression was the norm.

Now, ten years on from those design days, and with data compression available in Enterprise Edition for the last 5 years, the reality is that data compression is being successfully used for all kinds of workloads, including high-volume OLTP.

The reason the SQL team didn't consider OLTP as a use case is that data file pages remain compressed in memory, and there is no cache of decompressed column values. This means there's a CPU overhead each time a row is accessed, updated, or deleted, and the CPU overhead was thought to be prohibitive, along with the consequent drop in workload throughput.

In reality though, most SQL Server systems are I/O-bound, with plenty of CPU headroom to spare, and single-thread CPU performance is getting better and better as Intel progressively shrinks and re-architects processor internals.

This means that the CPU overhead of data compression in an OLTP environment is much less of a hindrance than it was thought to be a decade ago, and many businesses are taking advantage of the storage space and cost savings with the trade-off of a small drop in OLTP workload throughput.

I'll talk more about data compression and storage space savings in the next newsletter in two weeks.

Call to action: If you have access to Enterprise Edition and have always thought that data compression was a prohibitively expensive feature to enable in your environment, think again. I encourage you to do some performance testing to see whether you too can take advantage of cost savings in return for a potentially small drop in workload throughput. You may be very surprised at what your hardware is capable of.

I'm curious to hear your thoughts on data compression, and whether you've used it successfully, so please feel free to drop me a line, treated confidentially of course.

Video Demo

This week I'd like to highlight a demo from my Pluralsight course SQL Server: Logging, Recovery, and the Transaction Log. This demo shows the logging that happens when a *TRUNCATE TABLE* operation occurs. There's a persistent misconception that *TRUNCATE TABLE* is a non-logged operation, and this demo explains and shows that this is not the case by introducing the examining the background "deferred-drop" mechanism.

The video is about 3.5 minutes long and you can get it only in WMV format here.

You can get the demo code here.

Enjoy!

SQLskills Offerings

As I mentioned above, we have three brand-new classes that we've created, and they're available for registration for deliveries in Bellevue, WA in September/October 2013. They're sure to sell out fast, so don't delay!

Please know that these classes are final as the hotel contracts are signed, and the classes will not be cancelled or moved for any reason, nor will the dates change.

- June 3-7, 2013: Internals and Performance (**IE1**) in London – UK (registration closes on Wednesday)
- June 10-14, 2013: Performance Tuning (**IE2**) in London – UK
- June 17-21, 2013: High Availability & Disaster Recovery (**IE3**) in London – UK
- September 16-20, 2013: Internals and Performance (**IE1**) in Bellevue, WA – USA
- September 18-19, 2013: Hardware (**IEHW**) in Bellevue, WA - USA
- September 23-27, 2013: Performance Tuning (**IE2**) in Bellevue, WA – USA
- September 30-October 2, 2013: Accidental DBA (**IE0**) in Bellevue, WA – USA
- September 30-October 3, 2013: Advanced T-SQL (**IETS**) in Bellevue, WA – USA

See here for the main Immersion Event Calendar page that allows you to drill through to each class for more details and registration links.

Summary

We hope you've enjoyed this issue - we really enjoy putting these together.

If there is anything else you're interested in, we'd love to hear from you - drop us a line.

Thanks,
Paul and Kimberly

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