(August 19ᵗʰ, 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 our home in Redmond, where we don't have any travel scheduled for two months – a bit of a rarity for us. This means I'll be able to do some tinkering with the various electronics and robotics projects I have, as it usually takes a few days to put all the knowledge back into my head, it's not worth doing if I'll only be home for a week or two. We'll also get to enjoy the last month of summer in the Pacific Northwest while working on conference content and new Pluralsight classes. And of course we'll publish some photos and videos from our dive trip – here are a couple I put up in Facebook for anyone to see:

- Click HERE to watch a late-night encounter with a pelagic squid
- Click HERE to watch the well-known "Frank the friendly moray eel" wrapped around Kimberly's tank on a night dive

We've got two special pricing offers for some of our September classes: buy-one-get-one-free for everyone or 25% off for past attendees – see my blog post HERE for details!

We also have our new IE1 class in Chicago, and our Fall SQLintersection conference in Las Vegas at the end of October (details here). There are lots of opportunities for learning this Fall and we hope to see you!

The most recent books I've read are Charles Dickens' *Great Expectations* and *The Old Curiosity Shop*. I've made it a goal to read through Dickens' novels over the next year, and after reading these two almost back-to-back during the last few weeks, I'm used to his writing style. I recommend both of these books, as Dickens tells a great, intricate story and develops his characters really well. There were definitely some morals to the *Great Expectations* story, and both give detailed views into the social aspects of the mid 1800s. I'm really looking forward to reading the rest!

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

In the previous newsletter I discussed the *ASYNC_NETWORK_IO* wait type and explained what it really means and how the name causes confusion. I had a lot of feedback from that newsletter, mostly on how the explanation made troubleshooting that wait a lot easier. I exchanged emails with one reader, Bob St. Aubyn (named with permission), who gave me the idea for the topic of this newsletter: outside-the-box thinking about wait type root causes.

Here's an example: if the prevalent wait type is *ASYNC_NETWORK_IO*, and the ping time to the client machine is very low, then the problem *must* be something like RBAR processing of the client application, right?

Well, most of the time, yes. But what about the case where the application architecture is correct, with no inefficiencies? That's where you need to look at the client machine itself. Is it really underpowered for the workload of the client application? Is there something else running on the client machine that's preventing the client application from using all the resources it needs? Is there an OS or hardware patch needed that is causing a performance problem?

Another example is an increase in *LCK_M_X* locking waits. Very often the problem is lock escalation occurring, or some other change in the locking characteristics of the workload. But there are all kinds of other issues that can manifest as locking waits. One example I like to use is synchronous database mirroring.

Any locks protecting changes made by a transaction must be held until the transaction commits. If the length of time the transaction takes to commit increases, so does the potential for blocking problems caused by the transaction's locks being held for longer. With synchronous database mirroring (or an availability group with a synchronous replica) the transaction cannot commit until all its log records have been successfully sent to the mirror (or replica) and written to the database's log file, for replaying later. If the extra time necessary to send the log records causes an increase in the transaction commit time, the transaction's locks will be held for longer and so blocking might occur. This may lead to an increase in *LCK_M_X* (and *WRITELOG*) waits even though there's been no change in query plans or locking on the server.

Call to action: When you're using wait statistics as part of performance analysis and troubleshooting, don't just think about the causes directly related to the wait type. There are usually other factors that could lead to a particular wait type occurring, potentially even outside SQL Server itself.

I'm curious to hear your thoughts and experiences around outside-the-box wait stats analysis, so please feel free to drop me a line, treated confidentially of course.

<u>Video Demo</u>

From Erin:

The tempdb system database is an important resource for a SQL Server installation; one that should be properly configured and monitored. When you're monitoring tempdb file size, what system view do you use…and which one *should* you use? If you're not certain, check out this week's Insider Video where I'll walk through a demo of checking file sizes, and also review two best practices related to tempdb.

The video is just under 13 minutes long and you can get get it:

- In WMV format here
- In MOV format here

The demo code is available here.

Enjoy!

SQLskills Offerings

As I mentioned above, we have three brand-new classes coming up soon in Bellevue, WA.

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.

- September 16-20, 2013: Internals and Performance (**IE1**) in Bellevue (**SOLD OUT!**)
- September 18-19, 2013: Hardware (**IEHW**) in Bellevue, WA – USA
  - o **See here for special pricing offers!**
- September 23-27, 2013: Performance Tuning (**IE2**) in Bellevue, WA – USA (*almost* **sold out!**)
- September 30-October 2, 2013: Accidental DBA (**IE0**) in Bellevue, WA – USA
  - o **See here for special pricing offers!**
- September 30-October 3, 2013: Advanced T-SQL (**IETS**) in Bellevue, WA – USA
- **NEW: November 11-15, 2013: Internals and Performance (IE1) in Chicago, IL** – 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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