(July 7th, 2014)

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 Kona, HI, where we're just starting our annual dive vacation with our kids. We're all taking the PADI Rescue Diver course this week before getting on the Kona Aggressor II for two weeks of *eat, sleep, and dive*!

We've just released our **December classes in Australia** (Sydney and Canberra) and we're running a **special offer in July only** where our remaining 5-day classes for 2014 (IEPTO1, IEPTO2 in Chicago in October, and the Australia classes) have a **super-early-bird price**, saving a further $300 off the regular early-bird price. See our Immersion Event Calendar for details and drill-downs.

Registrations are coming in thick and fast for the next of our popular SQLintersection conferences, in Las Vegas this November – see here for details. And, our already phenomenal line-up is only getting better as we're adding Paul White and still planning a few more surprises. Paul's workshop and sessions will be added to the session line-up shortly. Our show will mainly focus on the troubleshooting and performance problems that we know you're facing today but will also highlight best practices in architecture, design, and SQL Server 2014. For a total of 6 full days – you can immerse yourself into great content with speakers that you know will deliver! Also, use the discount code "SQLskills" and you can save $50 off registration!

The most recent book I've read is Philipp (yup, double-p) Meyer's *The Son*. It's a really good story that follows several generations of a Texan oil family from the Comanche raids in the 1850s through the following 100 years. Their narratives are interspersed rather than in chronological order, which works really well as the family members develop. It's a grand, sweeping novel, which reminded me in some ways of Peter Matthiessen's incredible *Shadow Country*, one of my favorite books of 2012. Strongly recommended (and Meyer's previous novel, *American Rust*).

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

What are some of the things that come to mind when you think about performance monitoring? Here are some examples: transaction logs running out of space, queries taking too long or timing out, I/Os taking too long, low memory, 100% CPU, blocking.

What do you do when monitoring flags that one of these has occurred on your production system?

React.

You have to dig in with whatever instrumentation you've built, or using any 3rd-party tool you've bought, to try to figure out what went wrong so you can take corrective action to stop it happening (under a lot of pressure) or prevent it happening again in the future (under not quite so much pressure).

It's a reactive process: problems have to occur before they're noticed, so you don't get a chance to prevent bad things happening to your workload.

A similar thing happens in the stock market: if a stock becomes very strong and the price increases, people buy it. If a stock tanks and the price decreases sharply, people sell it. Hence the phrase "buy high, sell low" to describe reactive behavior that can stop people making money on stocks.

In the stock market, the big wins come from noticing the signs that a stock is going to take off, and buying it as early as possible to maximize gains, and, of course, knowing when it's going to go down again to sell while the price is at or near its peak.

Pro-activity beats reactivity.

I think we should be aiming for the same behavior with our SQL Server performance monitoring.

Instead of building monitoring that alerts us when a problem has occurred, we should build monitoring that can tell when a problem is starting to occur so we can deal with it before it detrimentally affects the workload.

Using I/O latencies as an example, the typical alerts fire when I/O latency crosses a threshold, say 20ms. I think it would be better for the monitoring to know what the I/O pattern is (including variations in the workload based on time/day/position in the business cycle) and then fire an alert when the I/O latency starts to deviate from the norm for a sustained period. This way the problem can be investigated far sooner than waiting until the I/O latency has hit a critical point where the workload is already suffering badly.

This is where I think performance monitoring should go in future, and it isn't a trivial thing to do, especially considering all the facets of performance monitoring. But think of the possibilities: knowing a performance problem is going to happen before it actually does!

Call to action: The next time you're implementing some monitoring, consider if there's a way to easily change what you're implementing so you get advance notice of a problem, rather than notice that a problem has occurred.

I'm curious to hear your thoughts on proactive performance monitoring, so please feel free to drop me a line, always treated confidentially, of course.

Video Demo

From Erin: Included columns for nonclustered indexes were added in SQL Server 2005, but some misconceptions still exist related to their internals. In this week's Insider demo video we'll look at straight-forward queries and plans to review how included columns are used. We'll also delve into index structure when columns are included, and we'll see what happens when those included columns are modified.

The video is just under 14 minutes long and you can get it:

- In WMV format here.
- In MOV format here.

You can get the demo code here.

Enjoy!

SQLskills Offerings

We've released all the classes for the remainder of 2014, including two in Australia in December. Please know that all of our classes will run and their dates will not change. Please plan accordingly. We expect to release the first half of our 2015 schedule around September.

Finally, to help your boss understand the importance of focused, technical training, we've added a few new items to help you justify spending your training dollars with us:

- Letter to your boss explaining why SQLskills training is worthwhile
- Community blog posts about our classes
- Immersion Event FAQ

2014 Immersion Events

Chicago, IL

- October 6-8, 2014: **IE0**: Immersion Event for the Accidental/Junior DBA
- October 9-10, 2014: **IEHW**: Immersion Event on SQL Server Hardware

- October 6-10, 2014: **IEPTO1**: Immersion Event on Performance Tuning and Optimization – Part 1 (formerly IE1)
- October 13-17, 2014: **IEPTO2**: Immersion Event on Performance Tuning and Optimization – Part 2 (formerly IE2)

Sydney, NSW, Australia

- December 8-12, 2014: **IEPTO1**: Immersion Event on Performance Tuning and Optimization – Part 1 (formerly IE1)

Canberra, ACT, Australia

- December 15-19, 2014: **IEPTO1**: Immersion Event on Performance Tuning and Optimization – Part 1 (formerly IE1)

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

Fall SQLintersection

This year our Fall SQLintersection conference will be the week of November 10th in Las Vegas. See here for details. Don't forget to use the discount code "SQLskills" (without the quotes and it isn't case-sensitive) and you can save $50 off registration! We hope to see you there!

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

Paul@SQLskills.com and Kimberly@SQLskills.com