

(April 16th, 2018)

If you know someone who 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,

We're busy getting everything ready for tomorrow's online IEVLT course as well as our 2018 in-person classes in Chicago that start **next** Monday with IEPTO1, IE0, IEAzure, IEUpgrade, and IECAG. Still a few seats left!

We have a new, live, online class debuting in May! Erin will be presenting our new *IEQS: Immersion Event on Solving Common Performance Problems with Query Store*. This will be delivered live via WebEx on May 22-24 (roughly 12-13 hours of content including open Q&As; similar to two full workshop days without leaving the comfort of your home/office!). It's priced at only US\$795. Because a few folks needed more time to get approval, **we've extended the newsletter subscriber discount code for a week**: use the code 'newsletterqs' when you register **before 4/23/18** to save US\$100. **Move fast to claim your seat!** See [here](#) for all the details.

So, there are only a few hours left to register for Kimberly's delayed, and highly-rated *IEVLT: Immersion Event on Very Large Tables: Optimizing Performance and Availability through Partitioning* course which starts tomorrow. See [here](#) for all the details, including the incredible feedback from the January class.

Note: you can get all the prior Insider newsletters [here](#).

SQLskills News

In-person US classes: In 2018, we're offering our usual Immersion Events on Performance Tuning (IEPTO1 and IEPTO2) and for the Accidental DBA (IE0), as well as PowerShell, Azure, Clustering and Availability Groups, BI strategies, and Practical Machine Learning. See [here](#) for our 2018 Immersion Event class schedule.

In-person London classes: We're bringing four of our Immersion Events to London in September: IEPTO1 and IEPTO2, plus our new classes: **IEAzure** (on Azure, Azure VMs, and azure Managed Instance) and **IECAG** (on clustering and availability groups). See [here](#) for details.

Also, as for our Immersion Events; our Fall schedule is already packed with events and engagements. As a result, there will be **no October/November in-person classes in Chicago this year** so in the U.S. the only in-person classes will be in Chicago in April/May and Bellevue,

WA in June. This means that each of **our in-person classes will only be offered once in the U.S. in 2018** (with an extra IEPTO1 in June in Bellevue), and these classes are all filling up quickly – please don't wait to the last minute to register otherwise you'll be disappointed.

Finally, even if you can't join us in person, I've put out a call for 2018 remote user group sessions. In 2017, we did more than 100 of these around the world and we have set up more than 60 for 2018 already! If you'd like one of us to present for your user group, check out my blog post [here](#). **Note: Tim has a new user group session on Azure Managed Instance** that he's happy to present to your group – see [here](#) for details.

Book Review

The latest book I've read is Margaret Atwood's [The Handmaid's Tale](#). It's quite a disturbing book about the Republic of Gilead (in what was the USA) where most women are subjugated, men and women are strenuously segregated, and women are not permitted to read. The focus of the book is the Handmaid Offred (which means 'Belonging to Fred'), whose job is to have monthly, clinical sex with the man whose house she belongs to so that him and his (barren) wife can have a child, although she can remember how society was before. It is a time of dangerously low birth rates due to widespread anti-fertility disease and pollution, and the Gileadean society was the result of a revolution in US. It's very well written and interesting to read – highly recommended. (I hear the TV adaption is very good too, but I haven't seen it.)

The Curious Case of...

This section of the newsletter explains recent problems we've helped with on client systems; they might be something you're experiencing too.

Jonathan and Erin were working with a client recently who'd upgraded from SQL Server 2005 to SQL Server 2016 and was suffering from huge performance problems. The underlying hardware hadn't changed and the workload was also exactly the same.

The symptom was massive tempdb allocation bitmap contention, but the workload was **not** the classic one that causes such contention (lots of concurrent creates/drops of small temp tables), but it was using temp tables.

Further investigation showed lots of threads with non-zero thread IDs waiting for `PAGELATCH_UP` on `tempdb` allocation bitmaps, which was puzzling. Using the Query Store, Erin was able to narrow down exactly which query was causing the problem, and see that sometimes it was running in parallel, and sometimes it wasn't.

Jonathan then remembered that SQL Server 2014 introduced the ability for parallelism to be used for `SELECT ... INTO` statements (see [here](#) for details) and sure enough, the client code was using that to populate one of the temp tables. Simply adding `OPTION (MAXDOP 1)` solved the problem and got the workload back to normal.

Bottom line: Before upgrading to a new version of SQL Server, especially from pre-SQL Server 2014 versions, it's extremely important to perform workload testing to see what's changed, as there are multiple new features, fixes, and implement changes that can cause performance problems.

Paul's Ponderings

Every so often I need to let off some steam about some of the email questions I'm sent (I get a bunch of SQL Server questions every day from random people across the world), where it's clear that the sender has done no research at all before sending me an email. It was pretty frustrating and it bugs me when people are lazy. Don't get me wrong, I like getting email questions as I like helping people out (and it sometimes leads to new business!), but I do expect some work to be done in advance of sending a question.

It all brings to mind a training course from my days at Microsoft called *Precision Questioning*. The course taught how to hone your questioning technique for maximum efficacy, saving time for the questioner and the person/group being questioned. It also stressed the need to do due diligence in trying to find the answer to your question before taking up someone else's time to help. I think something similar would be of great benefit to technical communities on the Internet where people ask questions.

So here are some quick guidelines for asking SQL Server questions I came up while writing this:

- State your problem as unambiguously as possible.
- State what research you've done before asking the question (this shows you've done due diligence). You could even say what you searched for on Google/Bing.
- State the SQL Server version/SP/CU/build you're using.
- State what you've done to try to alleviate your problem so far, if anything.
- Ideally, include all Transact-SQL code to reproduce the phenomena (or, at least the details of the schema, indexes, query, query plan etc.) – just use your best judgment and include these as an annotated/commented script.
- Include whatever results are pertinent.
- Try to anticipate what people would ask to get more information, and provide answers in your question.
- Say please and thank you.
- Don't demand urgent or immediate help – you're not entitled to anything.

Now, if you're using #sqlhelp on Twitter, most of this isn't possible. But asking a question over two tweets, using 1/2 and 2/2 is perfectly acceptable, and putting 'Looked on Google already' shows due diligence. You might be asked to post a longer question on a forum, in which case you should do so.

Whatever your chosen method for asking, make sure you respond to those who respond to you. Nothing puts people off from answering questions more than a complete lack of any thanks, or response to a clarifying question. And it's just common courtesy (sadly lacking these days, especially in the relative anonymity of the internet).

And don't forget, this isn't just for asking questions online; these guidelines should help within your company as well.

Now, where can you ask your question online?

- Twitter, using the #sqlhelp hash tag
- Forums like on [SQL Server Central](#), and their dedicated [Ask SQL Server Central](#) site
- MSDN's [SQL Server](#) forums
- SQL Sentry's [performance Q&A](#) forum
- [Stack Overflow](#) for general programming questions
- [Server Fault](#) for general admin questions
- Direct email to people

And a whole bunch of other places, but these are the main ones as far as I'm concerned.

The more information you can provide, show you've tried on your own to find an answer, and are polite and grateful, the more likely you'll get useful answers quickly. And if you're sending direct email, you'd better do all of this if you want a reply.

To finish off, I leave you with a blog post I wrote three years ago today: [RTFM. No seriously, R.T.F.M. Then ask your question.](#)

Call to action: The next time you're stumped for an answer and you'd like some free help, post your question using one of the mechanisms I've described above. But make sure you've done due diligence in trying to find the answer first, phrase the questions coherently, and if you have space, explain how you've searched and give as many pertinent details as possible. You'll be amazed at the great help you can get online!

Glenn's Tech Insights

This section of the newsletter highlights recent news and views from the hardware and Windows worlds that we think will be interesting to SQL Server community members.

Intel 10nm Ice Lake Xeon Processor and Platform Information

Some [initial information](#) about Intel's upcoming 10nm "Ice Lake-SP" Xeon processors which are rumored to be on track for release in 2019 has started to become available. They will use a new,

larger socket LGA4189 and have up to a 230W TDP rating. Given this, they will probably have higher core counts and higher operating frequencies.

They will also have eight-channel memory, compared to six-channel memory in the current Skylake-SP and the upcoming (2H 2018) Cascade Lake-SP processors. This should give you a higher memory density of 1TB per socket in the non-M versions of the CPU, compared to 768GB per socket in Skylake-SP.

Microsoft releases Windows Admin Center Tool

Windows Admin Center (WAC), aka “Project Honolulu” [was released by Microsoft](#) on April 12, 2018. Windows Admin Center is a lightweight, browser-based GUI platform and toolset for IT admins to remotely manage Windows Server and Windows 10 machines.

Windows Admin Center can manage Windows Server 2012 and newer instances and Windows 10 instances anywhere, including physical systems, virtual machines on any hypervisor, or running in any cloud. [You can download this free tool here.](#)

New Six-Core Intel Mobile Processors

On April 2, 2018, [Intel released](#) their new six-core mobile 14nm++ Core i9 “Coffee Lake” processors. The flagship processor in this family is the Intel Core i9-8950K, which has six physical cores (plus HT), with a base clock speed of 2.9GHz and a Turbo clock speed of 4.8GHz, along with 12MB of L3 cache.

A mobile workstation using this processor will be able to run more concurrent VMs than previous generation processors, and will finally have mainstream desktop levels of performance.

#TBT

(Turn Back Time...) This section highlights some older resources we’ve referred to recently that you may find useful, plus blog posts we’ve published since the previous newsletter.

Following on from my editorial this week, the theme for #TBT is communication skills so here are some resources for you:

- My Pluralsight course on [Communications: How to Talk, Write, Present, and Get Ahead!](#) that has 2.5 hours covering skills for communicating, running and attending meetings, all forms of writing from emails to articles, and how to write and deliver presentations
- And a bunch of blog posts:
 - [Public Speaking: A Primer](#)
 - [Ignorance is not stupidity](#)
 - [It depends. It really, really does.](#)
 - [RTFM. No seriously, R.T.F.M. Then ask your question.](#)

- [Learning to listen](#)
- [How to ask questions politely and correctly](#)
- [How to answer questions politely and correctly](#)

Here are a few of the blog posts we've published since the last newsletter:

- Paul: [SQLskills SQL101: Why does repair invalidate replication subscriptions?](#)
- Glenn: [PASS Summit 2018 Precon: Fixing Query Performance Problems from Estimates, Statistics, Heuristics, and Cardinality](#)
- Glenn: [New TPC-E Result for SQL Server 2017](#)

I hope you find these useful and interesting!

Video Demo

The demo video this time is taken from Jonathan's most recent Pluralsight course: [SQL Server: Building Multi-instance Asynchronous Applications](#). In the demo he shows how to configure full dialog security for Service Broker between two databases on the same instance of SQL Server. This avoids the potential for security problems from using the *TRUSTWORTHY* setting.

The video is about 7.5 minutes long and you can get in MOV format [here](#).

And the demo code is [here](#).

Enjoy!

Upcoming SQLskills Events

We have lots of events coming up in 2018 – from our online IEVLT and IEQS courses to our own LIVE, in-person Immersion Events in both the U.S. and London; all events are open for registration. Every event has a different focus and different benefits – from deep-technical training in our online courses and in-person IEs to wide-ranging topics at SQLintersection where you can learn more effectively how to keep moving forward in both your database and your career! And, of course, one benefit all our in-person events provide is networking.

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

- [Letter to your boss explaining why SQLskills training is worthwhile](#)
- [So why do you want to come to our training? And the winners are...](#)
- [Community blog posts about our classes](#)
- [Immersion Event FAQ](#)

Online, April/May 2018

- **IEVLT:** Immersion Event on Very Large Tables: Optimizing Performance and Availability through Partitioning (**Final planned delivery in 2018**)
 - April 17-19
- **IEQS:** Immersion Event on Query Store **** NEW ****
 - May 22-24

Chicago, IL, April/May 2018

- **IEPTO1:** Immersion Event on Performance Tuning and Optimization – Part 1
 - April 23-27
- **IE0:** Immersion Event for the Junior/Accidental DBA
 - April 23-25
- **IEUpgrade:** Immersion Event on Upgrading SQL Server
 - April 23-25 **** Only 2 seats remaining! ****
- **IECAG:** Immersion Event on Clustering and Availability Groups
 - April 26-27
- **IEAzure:** Immersion Event on Azure SQL Database and Azure VMs
 - April 26-27 **** SOLD OUT! ****
- **IEPTO2:** Immersion Event on Performance Tuning and Optimization – Part 2
 - April 30-May 4 **** SOLD OUT! ****
- **IEBIStrat:** Immersion Event on Developing a BI and Analytics Strategy (**** NEW ****)
 - April 30-May 2
- **IEPS:** Immersion Event on PowerShell for SQL Server DBAs
 - April 30-May 2
- **IESSIS1:** Immersion Event on Learning SQL Server Integration Services
 - May 7-11
- **IEPML:** Immersion Event on Practical Machine Learning
 - May 7-11 (**** NEW ****)

Bellevue, WA, June 2018

- **IEPTO1:** Immersion Event on Performance Tuning and Optimization – Part 1
 - June 18-22 (**** Buy 2, get 1 free! ****)

London, UK, September 2018

- **IEPTO1:** Immersion Event on Performance Tuning and Optimization – Part 1
 - September 10-14
- **IEAzure:** Immersion Event on Azure SQL Database and Azure VMs
 - September 10-11

- **IECAG:** Immersion Event on Clustering and Availability Groups
 - September 12-13
- **IEPTO2:** Immersion Event on Performance Tuning and Optimization – Part 2
 - September 17-21

Click [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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