(October 20th, 2020)

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.

Note: As an Insider, you can read all prior Insider newsletters here.

Quick Tips for our Insider friends!

This newsletter is coming to you from Redmond, where I'm proctoring and teaching the last of our 2020 online classes – IEPTO2 on performance tuning.

Stay safe out there!

<u>SQLskills News</u>

Live, <u>ONLINE</u> classes in 2021: our classes next year will all be live-streamed online, as it's not feasible to run in-person classes for the foreseeable future. Just like that last two months, we'll be running them as a series of half-day sessions so it's less onerous then the usual 9-hour days in our in-person classes. Attendees will also get streaming access to a recording of the entire class – something we'd never done before this year!

We're putting together the schedule at the moment and we'll publicize it in November.

Practical Machine Learning classes in November: our good friend Rafal Lukawiecki, who taught our in-person IEPML classes, is presenting two Practical Machine Learning classes online in November through his own company:

- Azure Machine Learning in Practice: From Fundamentals to Development
- Machine Learning and Data Science in R on Microsoft ML and SQL Servers

Rafal is an excellent instructor and I strongly recommend these classes to anyone who's serious about machine learning in the Microsoft stack. You can get all the details of the courses on Rafal's website here.

Kandio job candidate assessments: we've teamed up with Kandio to produce technical assessments to help companies screen candidates for job recruitment. If you want to make sure someone really knows what they say they know, check out the assessments here.

Online 2019 class recordings: you can buy recordings of all our three-day online classes from 2019, for as little as US$299 each. See here for all the details.

<u>Book Review</u>

From the 2016 archives, I give you Neal Asher's *The Departure*. Asher is one of my favorite sci-fi authors and most of his novels are set in his Polity universe. This is the first in a trilogy, set on Earth a hundred years or so in the future, where there's a single brutal government, and the colony on Mars that's just been abandoned by Earth. The protagonist wakes up inside a sealed box on a conveyor belt leading to an incinerator and has to figure out his previous life and then start working on revenge. Lots of action, cool machines and robots, futuristic technology and all very fast paced. I can't wait to read the next two – highly recommended! (Edit 2020: the next two are also fantastic!)

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.

I was banging my head against the proverbial brick wall over the weekend trying to get call stack symbols to resolve on SQL Server 2019… You can read through my explanation here…

Ponderings…

(From Erin this time – enjoy!)

A few weeks ago I recorded a Mixed Extents podcast on Indexing and Stats Maintenance. Erik Darling and I had a great time talking with the EightKB team and sharing our views on how we would like to see folks handle maintenance. At the end of the show Anthony asked us both what feature we would like to have implemented in SQL Server tomorrow, if it were possible. We both discussed Query Store as part of our feature request, and I also pointed out that I would really like people to know that in SQL Server 2019, **Query Store is a fully viable feature for all users and workloads**.

The biggest change for Query Store in the SQL Server 2019 release was the introduction of the CUSTOM capture mode. This option allows data professionals to set limits that determine what queries are captured by Query Store. This is extremely valuable for ad hoc workloads. Historically, ad hoc workloads have not fared well when paired with Query Store because of the overhead they inherently create. The CUSTOM option addresses this (check out my Insider Video this month to see it in action), and CU8 for 2019 includes a limitation for memory use by Query Store. In fact, this limitation was ported back to both SQL Server 2016 and 2017.

When I talk to folks that want to use Query Store, my recommendation is to run the latest CU available for their version, and if they can upgrade to SQL Server 2019, I recommend that as well. Yes, I know that CU7 was recently released and pulled, and that seems to be a concern for people. We at SQLskills are not concerned about the stability of SQL Server 2019, or Microsoft's testing methodology.

Funny story…Years ago everybody said not to upgrade until at least Service Pack 1 came out for SQL Server. Then Microsoft stopped providing Service Packs entirely and instead committed to a much more frequent release cycle that allowed them to not only address customer problems faster, but also implement newer features and functionality they had back ported from newer releases to older supported versions. An interesting thing about the old "wait for Service Pack 1" thought process is that SQL Server 2012 Service Pack 1 introduced one of the biggest memory manager bugs into SQL Server at the time. Were Service Packs tested better than CUs? No. CUs get the same level of testing (and more test cases are added all the time), but sometimes the test cases just don't cover a specific scenario. CUs have been around for an incredibly long time with a pretty solid track record.

As an aside, Microsoft was incredibly fast in addressing the [issue with CU7 for 2019](#), and pushed up the timeline for releasing [CU8](#) to address customers that were encountering the issue with database snapshots. Further, it has also been possible to uninstall a CU for SQL Server for many years now, so while it is unfortunate a bug was introduced in the CU, if you had applied it, you could roll back to CU6 relatively easily in response.

There is nothing more, or less for that matter, "buggy" about SQL Server 2019 than any other version of SQL Server. It has been quite stable in our experience across multiple client workloads. Our general suggestion to all of our clients is to stay up to date with CUs for SQL Server, but that does not mean go install them on production servers the day that they come out. They should be being tested on lower level environments like DEV/QA/UAT before production deployment, and if that is being done then you shouldn't run into a CU causing a production outage.

There plenty of great reasons to upgrade to SQL Server 2019 – of course I'm biased from the Query Store improvements, but if you haven't considered it, I think it's time. Have fun testing!

#TBT

(Turn Back Time…) Blog posts we've published since the previous newsletter plus some older resources we've referred to recently that you may find useful.

Going along with Erin's Ponderings above, upgrade is the theme for this TBT:

- Glenn's course: *[SQL Server: Upgrading and Migrating to SQL Server 2016](#)*
- Glenn's course: *[SQL Server: Installing and Configuring SQL Server 2016](#)*
- Tim's course: *[SQL Server: Consolidation Tactics and Best Practices](#)*
- Glenn's course: *[SQL Server 2012: Evaluating and Sizing Hardware](#)*
- Glenn's [one-a-day upgrade blog post series](#)

All of this applies equally to upgrades to 2017 and 2019 too.

I hope you find these useful and interesting!

<u>Video Demo</u>

Have you been wondering if the CUSTOM capture options for Query Store added in SQL Server 2019 really help? They do! And in this Insider Video Erin steps through a demo that examines throughput and overall performance for an ad hoc workload with, and without, Query Store enabled.

The video is about 9.5 minutes long and you can get it in WMV format here.

The demo code is here.

Enjoy!

<u>Upcoming SQLskills Events</u>

Our 2021 classes will be entirely online in the Spring and we'll announce them in November!

You have multiple learning opportunities as every event has a different focus as well as different benefits – from deep-technical training in our Immersion Events to a more broad set of topics at SQLBits / SQLintersection! And, of course, one benefit you'll always get from in-person events is networking; we hope to meet/see you at an event soon!

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

LIVE, Online Immersion Events:

Fall 2020

- **IEPTO2**: Immersion Event on Performance Tuning and Optimization – Part 2
    - Running this week already…

Spring 2021

- We'll be announcing our Spring 2021 online class schedule in November.

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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