

(September 10th, 2019)

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!

Hey Insiders,

This newsletter is coming to you from Glencoe, Scotland where Kimberly and I are on a bit of a driving tour around the west coast (which I know like the back of my hand) while over here visiting my parents. See [here](#) (public Facebook post) for the stunning mountain view we had this morning!

SQLskills News

Live, ONLINE classes: we have a few classes coming up in the remainder of the year:

- IEVLT: Very Large Tables: Performance/Manageability through Partitioning – October 29-31
- IECS: Columnstore Indexes – November 12-14

The classes are US\$495 each and you can get all the details and registration information through the class schedule page [here](#).

Live, IN-PERSON classes: we have two more in-person classes this year, in Chicago in October:

- IEPTO1: Performance Tuning and Optimization – Part 1 – October 7-11
- **SOLD OUT:** IEAzure: Azure SQL Database, Azure VMs, Azure Managed Instance – October 7-10

These will be our only, in-person Immersion Events running this Fall and you can get all the details and registration information through the class schedule page [here](#).

Fall SQLintersection: If you're looking for a great place to learn best practices in migration, troubleshooting, and performance, join us in Las Vegas in the week of November 18 for our [SQLintersection](#) conference where we're going to focus on these incredibly important processes. SQLintersection will not only help you migrate to a newer version of SQL Server but it will teach you the best new features to leverage once you're there! We've got an incredible line-up this Fall and ALL of our sessions have been posted; check out our website to view our

spectacular line-up including Bob Ward, Pedro Lopes, Pam Lahoud, Brent Ozar, and most of our SQLskills team! We hope you can join us in November! Check out all out in my blog post [here](#).

PASS workshops: if you're planning to go to the PASS Summit in November, Erin and Jonathan both have pre-conference workshops:

- Erin: Performance Tuning with Query Store in SQL Server – see [here](#)
- Jonathan: Bigger Hardware or Better Code and Design? – see [here](#)

Finally, even if you can't join us in person, I've put out a call for **remote user group sessions** for the remainder of 2019! If you'd like one of us to present for your user group, check out my blog post [here](#).

Book Review

The most recent book I've read is Barry Strauss' [Ten Caesars: Roman Emperors from Augustus to Constantine](#). I've always been fascinated by the Roman Empire but I've only ever read much about the emperors Augustus and Constantine, so was excited to see this book being published. It covers ten of the most consequential emperors in the history of the Empire (Augustus, Tiberius, Nero, Vespasian, Trajan, Hadrian, Marcus Aurelius, Septimius Severus, Diocletian and Constantine), including how they got into power and how they changed the Empire, some for better and some for worse. Fascinating and highly recommended! (PS I can also recommend the excellent [SPQR: A History of Ancient Rome](#), which I reviewed back in [2016](#).)

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 had a question last week asking why there were too few log records for an offline index rebuild the person was doing, as they expected one log record per index row. That's not what SQL Server does...

Read the explanation in my blog post [here](#).

Ponderings...

(This time from Glenn - enjoy!)

As you may have heard, on August 21, 2019, Microsoft [announced the availability](#) of SQL Server 2019 Release Candidate. This was followed up on August 29, [by the announcement](#) of a “release candidate refresh” that included big data cluster support. What this all indicates is that SQL Server 2019 is getting very close to “General Availability” status, which means the initial RTM release.

As always, Microsoft employees are very guarded about the exact date when this will happen, [making recent statements](#) such as “SQL Server will be generally available in the second half of calendar year 2019”. The real question is when SQL Server 2019 will actually go GA. The conventional wisdom is that it will happen during the first week of November, while [Microsoft Ignite](#) (and [PASS Summit 2019](#)) are happening. It will probably be Wednesday, November 6, 2019, during the [Day 1 Keynote Session by Rohan Kumar](#) at the PASS Summit (at least, that is my guess). So, what should you do about this, now, and in the coming months?

Getting Ready for SQL Server 2019

First, you should read through the “[What’s New in SQL Server 2019](#)” page to see what new features and improvements were added in the Release Candidate, and then look at the [SQL Server 2019 CTP announcement archive](#) pages to see what was added in earlier CTP builds. I think you should focus on the area of SQL Server that is most important to your organization, looking for new features and improvements that will help alleviate problems you are facing with legacy versions of SQL Server. You should also read the [SQL Server 2019 Preview Release Notes](#) to get the latest information about installation and deployment.

Next, if you haven’t already, install SQL Server 2019 Release Candidate on a VM or test machine to get a feel for the updated installation experience. For example, you can now set min and max server memory and max degree of parallelism during installation.

Remember, this could be on Windows or on Linux. You will need Windows Server 2016 or later on Windows. I would prefer Windows Server 2019, because of [its improved performance and security](#) compared to Windows Server 2016. For Linux, you can deploy on Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Ubuntu, or with a Docker image.

Learning about SQL Server 2019

After you have installed SQL Server 2019, you should start playing around with it. You will want either [SSMS 18.2](#) or the latest version of [Azure Data Studio](#), depending on your preference, in order to get the best experience and to enable full support for SQL Server 2019. I would try restoring a copy of one of your legacy databases to a SQL Server 2019 instance, and do some initial smoke testing to see how it works with the legacy compatibility level and then with compatibility level 150.

If a new SQL Server 2019 feature seems particularly interesting or useful, try it out in your initial test environment. For example, if your databases use a lot of scalar user-defined functions (UDFs), then [automatic scalar UDF inlining](#) in SQL Server 2019 might be a huge performance win for your workload. You can turn on this capability by setting your database compatibility level to 150. You also can disable it (while staying on database compatibility level 150) by using `ALTER DATABASE SCOPED CONFIGURATION SET TSQL_SCALAR_UDF_INLINING = OFF`, which is a new database scope configuration option.

Conclusion

Now is the time to starting getting familiar and comfortable with SQL Server 2019, so you know what it can do to help you and your organization. The more you know about it, the easier it will be to start making the business case to begin upgrading database instances to SQL Server 2019. In my experience, data professionals usually have to push their organization to make these types of upgrades, so you will want to have the expertise to help make that happen. There's no time like the present to get started!

Glenn's Tech Insights

Recent news and views from the hardware and Windows worlds that we think will be interesting to SQL Server community members.

The SQL Server 2019 Release Candidate is the big news this time around – see Glenn's editorial above – and Glenn's Tech Insights will return in the next newsletter.

#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.

As I was processing Erin's Insider Video I was reminded of four Pluralsight courses that Joe Sack recorded that are all about identifying and fixing esoteric query plan performance issues, so these are what I'm highlighting this time:

- Joe's course: [SQL Server: Common Performance Issue Patterns](#)
- Joe's course: [SQL Server: Common Query Tuning Problems and Solutions – Part 1](#)
- Joe's course: [SQL Server: Common Query Tuning Problems and Solutions – Part 2](#)
- Joe's course: [SQL Server: Troubleshooting Query Plan Quality Issues](#)

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

- Glenn: [SQL Server Diagnostic Information Queries for September 2019](#)
- Glenn: [Dell Inspiron 5480 Laptop Review](#)
- Glenn: [SQLskills at 24 Hours of PASS: Summit Preview 2019](#)
- Glenn: [AMD EPYC 7002 Series Processors and SQL Server](#)

I hope you find these useful and interesting!

Video Demo

The release of SQL Server 2019 is looming, and this release includes new settings for Query Store which allow you to control what queries are captured. In this video we'll take a look at these settings, how to configure them, and see how they affect what data is collected.

The video is about 10 minutes long and you can get it [here](#).

The demo code zip is [here](#).

Enjoy!

Upcoming SQLskills Events

Our set of 2019 live, in-person classes for Chicago in October are filling up fast and we've announced our Fall live, online events too.

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 wide-ranging topics at SQLintersection where you can learn more effectively how to keep moving forward in both your environment and your career! 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, IN-PERSON Immersion Events:

Chicago, IL, October 2019

- **IEPTO1:** Immersion Event on Performance Tuning and Optimization – Part 1
 - October 7-11
- **IEAzure:** Immersion Event on Azure SQL Database, Azure VMs, and Azure Managed Instance
 - October 7-10 **SOLD OUT!!**

LIVE, ONLINE Immersion Events:

- **IEVLT:** Immersion Event on Very Large Tables: Performance/Manageability through Partitioning
 - October 29-31

- **IECS: Immersion Event on Columnstore Indexes**
 - November 12-14

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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