

(May 21st, 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 Lake Tahoe, where we've just attended the wedding of a good friend, who we originally met when he was a student in our 2011 Atlanta IE1 class! How time flies and friendships form!

And talking of classes, we've just announced one more week of in-person courses for 2019: IEPTO1 and IEAzure classes will run in October back at our fantastic (and super easy to get to) Chicago location!

SQLskills News

SQLintersection is coming up in 3 weeks: If you're looking for a great place to learn new features in 2017, upcoming cool stuff in 2019 and best practices in troubleshooting and performance, then join us in Florida the week of June 10th for our 12th [SQLintersection](#) conference! SQLintersection will help you leverage the most important new features in 2016 and higher as well as show you performance strategies to get more out of your servers!

And for our June 2019 show, we've got an absolutely incredible line-up! Check out the website to view our pre-conference (6 workshops over 2 pre-conference days) and two post-conference workshops as well as our spectacular line-up including Bob Ward, Buck Woody, Brent Ozar, and most of our SQLskills team! We hope to see you there. You can also check out my blog post about the event [here](#).

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

- IEPTO1: Performance Tuning and Optimization – October 7-11
- 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](#).

Live, ONLINE classes: we're planning to announce our Fall line-up of online courses at the start of the summer.

Finally, even if you can't join us in person, I've put out a call for **2019 remote user group sessions** and we've got 43 scheduled this year already! 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 Ann Cleeves [Raven Black](#). This is the first book in a series of murder-mysteries set on the Shetland Islands to the north of mainland Scotland. Detective Inspector Jimmy Perez, from the Fair Isle originally, is the main man on the ground. I noticed these books as the background for the TV series Shetland, which I've yet to watch. This was a real page-tuner for me, with an excellent twist at the end. Good characters and short chapters jumping between the characters – exactly what I like for this kind of book when reading in small chunks during the day. Great stuff and highly recommended!

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.

What do you think... does SQL Server use a separate read/write thread per LUN/file?

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

Ponderings...

(This time from Jonathan...)

Someone recently asked me a very thought-provoking conversation starter:

“What are some things that are okay to do occasionally but definitely not okay to do every day?”

This is an interesting question because it's so open to almost any kind of answer that can be debated or discussed at great lengths. For example, one person could say drinking alcohol as an answer, which isn't generally considered a problem when consumed occasionally but daily might be, depending on the quantity and intent. However, in some cultures a daily glass of wine with dinner is completely normal and natural and would never be considered a problem. For other cultures, they never touch the stuff and consider any drinking to be wrong.

I think the fun part of this question is considering how some things were once very commonplace until they were found to be bad with ongoing usage over time. For instance, until the early 20th Century, laudanum, which is an opium-based tincture, was sold without a prescription and was part of many medications and mixed into beverages. Once it was learned that misuse had severe negative consequences, including addiction and death, it became regulated for use and even banned from sale. The current opioid addiction epidemic in the U.S. is a return of the same root

issue through another means, but also an example of how something that can safely be used occasionally turns into a huge problem with prolonged, regular use/abuse.

When Paul asked me to write the pondering for this newsletter, I remembered this question and immediately thought about how it applies to technology and SQL Server. What things can be done occasionally to solve an issue but should not be done regularly as a general practice? Lots of things come to mind immediately:

- Shrinking database files
- Provisioning multiple transaction log files
- Clearing the plan cache
- Over-committing resources for virtual machines
- Not maintaining index fragmentation

Occasionally having to do any of these things to address a specific problem in the short term is not necessarily a problem. However, if we do these regularly then we aren't solving the root cause and problems either become bigger or repeat over and over until addressed properly.

To go into more detail on the examples above:

- Shrinking database files as a one-off action to reclaim space after a large data archiving process is not generally a problem, as long as any index fragmentation issues are addressed through an index reorganize afterwards. Nightly shrinking of database files is a waste of resources, especially if the files are just going to grow again the next day.
- Adding a second transaction log file to cover a large operation that would otherwise fail due to a lack of physical disk space on the existing log drive is not a problem, but having to have multiple log files permanently for space limitations caused by long running large transactions isn't addressing the root problem.
- Over-commitment of virtual machine resources during a maintenance window or hardware failure of a host server may be the only way to keep everything going temporarily, but for latency-sensitive workloads like SQL Server it can negatively impact performance.
- Ignoring index fragmentation, or delaying maintenance due to performance impacts during a peak load time may make sense short term, but totally ignoring index maintenance because you are on solid state storage and random I/O is fast results in low page density, wasted buffer pool, and higher query costs that can lead to different execution plans that affect performance.

Occasionally it is worth while taking a look at why we are doing things the way that we are and determine whether it is really helping us or potentially hurting us over a longer term. Sometimes we just don't know that we are doing something harmful until someone else points it out to us. Sometimes it is just something that was always done that way and nobody has ever asked why

and if it was really how something should have been done to begin with. We see this all the time in our client health audits, but being willing to look at something from a different perspective and learn from it can lead to significant improvements over time.

Call to Action: What operations do you have in your SQL Server environment that started out as a one-time thing but have now become regular operations, and really shouldn't be? Addressing the root cause rather than using a regular Band-Aid will lead to a more stable environment.

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.

In Glenn's regular roundup of tech news this time he talks about the following:

- Micro-architectural Data Sampling in Intel Processors
- More AMD Ryzen 3000 Series Speculation

Check it all out on his blog [here](#).

#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.

Following up on my [Introduction to Wait Stats](#) post in the last newsletter, wait stats are the theme for #TBT this time. Here are some wait statistics resources for you:

- My Pluralsight: [SQL Server: Performance Troubleshooting Using Wait Statistics](#), that has 4.5 hours covering waits, latches, and spinlocks
- My main post about [wait statistics](#)
- My [wait stats library](#) with info on more than 360 wait types
- The [introductory whitepaper](#) Jonathan and Erin wrote
- Microsoft whitepapers on [latches](#) and [spinlocks](#) I helped with
- My three blog post series on [waits](#), [latches](#), and [spinlocks](#)
 - Our articles on SentryOne's [sqlperformance.com](#) about wait statistics

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

- Paul: [October IEPTO1 and IEAzure classes open for registration](#)
- Erin: [Queries with OPTION \(RECOMPILE\) and Query Store](#)

- Glenn: [SQL Server 2019 Standard Edition Licensing](#)

I hope you find these useful and interesting!

Video Demo

In this Insider video, Tim shows how you can leverage Jupyter Notebooks in Azure Data Studio (ADS) to create rich looking scripts for your demos and customers. ADS is a fairly new console that is similar to SQL Server Management Studio except it can connect to multiple data systems, not just SQL Server and Azure SQL Database. You can use ADS to connect to Apache Hadoop HDFS, Apache Spark, PostgreSQL, and others. It's also multi-platform; you can install and run ADS on Windows, Linux, and on a Mac. There is lots of extensibility too; you can add in new functionality, themes, and more. Microsoft and vendors are creating new extensions to do all sorts of cool stuff.

The video is about 4 minutes long and you can get it [here](#).

The example notebook is [here](#).

Enjoy!

Upcoming SQLskills Events

Our next in-person event is our bi-annual SQLintersection conference in June and in Orlando, FL (see [here](#) for details of the June show). Conferences are a great way to learn “nuggets” about a large variety of features and best practices so that you can get amazing ROI out of one week!

And, of course, another big benefit from in-person events is networking; with SQLafterDark as well as smaller, more friendly sessions where you can really get your questions answered! Kimberly and I even spend our lunches in the session rooms chatting with attendees and discussing their environment/concerns and if we can't help you get your issues solved – we'll introduce you to the speaker that can!

We always have great fun at SQLintersection; we hope to meet/see you there some day! Check out our “closing Q&A sessions” recorded as podcasts for RunAs Radio and hosted by the incredible Richard Campbell (also of DotNetRocks):

- Fall 2013 SQLintersection here: <http://www.runasradio.com/Shows/Show/341>
- Spring 2014 SQLintersection here: <http://www.runasradio.com/Shows/Show/369>
- Fall 2014 SQLintersection here: <http://www.runasradio.com/Shows/Show/397>
- Spring 2015 SQLintersection here: <http://www.runasradio.com/Shows/Show/423>
- Fall 2015 SQLintersection here: <http://www.runasradio.com/Shows/Show/447>
- Spring 2016 SQLintersection here: <http://www.runasradio.com/Shows/Show/474>
- Fall 2016 SQLintersection here: <http://runasradio.com/Shows/Show/506>

- Spring 2017 SQLintersection here: <http://runasradio.com/Shows/Show/536>
- Fall 2017 SQLintersection here: <http://www.runasradio.com/Shows/Show/558>
- Spring 2018 SQLintersection here: <http://www.runasradio.com/Shows/Show/582>
- Fall 2018 SQLintersection here: <http://www.runasradio.com/Shows/Show/619>

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

LIVE, ONLINE Immersion Events:

- The Fall class lineup will be announced at the start of the summer.

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

Paul@SQLskills.com and Kimberly@SQLskills.com