

(January 21st, 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!

Hey Insiders,

This newsletter is coming to you from Redmond, where we've just endured the first snowy storm of the year – I always think it's so pretty watching the snow fall and gather on fir trees!

SQLskills News

Live, IN-PERSON classes: our Spring 2020 classes in Chicago are filling up:

- IEPTO1: Performance Tuning and Optimization, Part 1 – April 27-May 1
- IE0: Accidental/Junior DBA – April 27-29
- IECAG: Clustering and Availability Groups – April 30-May 1
- IEPTO2: Performance Tuning and Optimization, Part 2 – May 4-8
- IEAzure: Azure SQL Database, Azure VMs, Azure Managed Instance – May 4-7

We've also **added a new IEReporting** Immersion Event on Using and Administering SSRS and Power BI, running April 27-28 and with a **US\$100 discount through 1/25/20!**

You can get all the details and registration information through the class schedule page [here](#).

SQLBits: Kimberly, Erin, and I will all be presenting at [SQLBits](#) in London, March 31-April 4. Our precons are:

- Paul: 3/31 [Performance Troubleshooting using Waits and Latches](#)
- Erin: 4/1 [Performance Tuning with Query Store in SQL Server and Azure](#)
- Kimberly: 4/1 [Statistics4Performance: Internals, Analysis, Problem Solving](#)

This is the only chance to see us in Europe this year as we won't be bringing classes back to the UK until 2021. We hope to see you at SQLBits!

SQLintersection: Our entire SQLskills team will be in Orlando for performance/troubleshooting/development-focused conference. Remember, better (and earlier!) design will make everyone's lives easier! The Intersection-suite of events can really help your team improve as our focus is primarily on real-world problems that you're seeing! Our Spring show in Orlando features 9 full-day workshops, 46 technical sessions, and 3 SQL-specific

general/keynote sessions plus our SQLafterDark evening event and our RunAs Radio closing session with Richard Campbell. And, you always have the option of attending a session from one of our co-located shows: [DEVintersection](#), [Azure/AI Intersection](#), and [<anglebrackets/>](#). **It's our LARGEST show yet!** But, also a smaller show overall so it's a great place to really meet the speakers / attendees and network! We're really looking forward to it.

As for the SQLintersection workshops, check out our line-up:

- 3 pre-conference workshops on Sunday, April 5
 - [Getting Started as a Data Engineer](#) with Tim Chapman
 - [A Lap Around SQL Server for Linux Folks](#) with Jonathan Kehayias
 - [Leveling up with PowerShell for the DBA](#) with Ben Miller

- 3 pre-conference workshops on Monday, April 6
 - [Performance Troubleshooting using Waits and Latches](#) with Paul Randal
 - [Management, Administration, and Best Practices for the Hybrid DBA \(SQL Server 2016-2019, Azure SQL Database, Managed Instance\)](#) with Tim Radney and David Pless
 - [The Developer's Guide to Consistency, Accuracy, Concurrency, and Transactional Control](#) with Kimberly L. Tripp

- 3 post-conference workshops on Friday, April 10
 - [Kubernetes Zero to Hero: Installation, Configuration, and Application Deployment](#) with Anthony Nocentino
 - [Performance Tuning and Optimization for Modern Workloads \(SQL Server 2016-2019, Azure SQL Database, Managed Instance\)](#) with Tim Radney and David Pless
 - [Query Tuning Tools in SQL Server](#) with Grant Fritchey

There are also co-located workshops with each of the conferences so you can mix and match! Our workshops are scheduled so that you and your developers have multiple paths to get the most out of your workshop and conference experience! Check out the entire session line-up online [here](#). And, be sure to register with the discount code 'SQLskills' to get a \$50 discount.

Finally, even if you can't join us in person, I've put out a call for **remote user group sessions for 2020!** If you'd like one of us to present for your user group, check out my blog post [here](#).

Book Review

The last book I read last year was John Steinbeck's [East of Eden](#). After reading The Grapes of Wrath a couple of books before I thought I'd read all of this on the long flight home from Singapore, but I slept instead. When I got home, jetlag got the best of me but I finally finished this in the waking hours. From Amazon "The masterpiece of Steinbeck's later years, East of

Eden is a work in which Steinbeck created his most mesmerizing characters and explored his most enduring themes: the mystery of identity, the inexplicability of love, and the murderous consequences of love's absence.". It's a deep, rich story, but I have to admit I enjoyed The Grapes of Wrath a bit more. However, 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.

Continuing the database snapshot theme from last time, I had another question from someone who was concerned that *DBCC CHECKDB* was causing transactions to roll back! Check out my explanation [here](#)...

Ponderings...

(From Tim this time – enjoy!)

Unfortunately, a common trend that I've been seeing is the misconception that if you put anything in Azure, or any cloud really, that backups are handled for you. This misconception is just as bad as people believing that a VM backup is good enough for business-critical SQL Servers. I really wish that everyone would test their recovery strategy for critical systems, prior to promoting them to production. That one critical step could save companies from data and reputation loss!

Where does this misconception come from? Having numerous conversations with clients, students, and other consultants, it is apparent that many people just don't understand the complexities and feature differences of the various products in Azure. They see a marketing bit about one product and assume it is true for all of Azure.

From a data platform perspective, in IaaS, it is very easy to configure a backup routine for the Azure VM. From the VM menu, just select backup, select or create your recovery services vault, pick your backup policy, and enable backup. If full SQL Server backups are all you need, and you're ok with restoring the entire VM to recover, you're done, but I've yet to meet a client that is ok with that RPO. Otherwise, you are still responsible for SQL Server backups, just like you are for an on-prem virtual machine. There are Azure options for configuring a SQL Server backup routine for VMs, otherwise, you can configure native SQL Server backups to geo-redundant blob storage.

I feel that the PaaS offerings, such as Azure SQL Database and Azure SQL Managed Instance, contribute to this misconception around backups.

Both PaaS products have managed backups. Microsoft handles the backups for you and you are responsible for the restores. Technically, in order to restore one of these database backups, you must use the Azure Portal. Both environments support backup retention for up to 35 days (except for the Azure SQL Database basic tier, it only has 7 days). In addition to the built-in 35-day retention, Azure SQL Database can leverage long-term retention for backups up to 10 years. For longer term retention in Managed Instance, you can schedule copy-only database backups using a SQL Agent job and store those for as long as they need.

Regardless of what's managed or not, you should still regularly validate YOUR recovery strategy. You need to test how long a restore will take, fully document the process to recover the database and get your application back up and running. From a disaster recovery perspective, what is involved in bringing up the business applications in another region? Can someone other than a member of the database group perform the restore? This is where your business continuity and 'run books' become critically important.

In addition to backups, database maintenance is often overlooked or people think that Microsoft is handling that too. Running DBCC CHECKDB should not be forgotten as well as regular index and statistics maintenance.

A good habit to form as a data professional is to become paranoid about data protection. Anytime a vendor or process says they are taking over a fundamental responsibility, question it and test it. Try to find holes or vulnerabilities that could impact you and your organization. I've lost count of the number of times I've had to help new clients recover due to vendor managed backups (not Azure), deduplication, centralized backups, encryption, and more, all due to the client failing to test and validate restores prior to needing them.

Call to action: Don't forget the basics. Validate and know YOUR recovery plans. Don't be caught off guard! Data is your company's most valuable asset!

#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.

Parallelism and CXPACKET waits is the theme for this TBT:

- My post: [Knee-Jerk Wait Statistics: CXPACKET](#)
- My post: [More on CXPACKET Waits: Skewed Parallelism](#)
- My post: [CXCONSUMER wait type – history and what you need to know](#)
- The waits library entry for [CXPACKET](#)
- Jonathan's post: [Tuning 'cost threshold for parallelism' from the Plan Cache](#)
- Jonathan's post: [SQL 101: Parallelism Inhibitors – Scalar User Defined Functions](#)

- My post: [Updated sys.dm_os_waiting_tasks script to add query DOP](#)
- My post: [Who is overriding MAXDOP 1 on the instance?](#)

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

- Kimberly: [SQLskills SQL101: Why are Statistics so Important?](#)
- Paul: [New class: Immersion Event on Using and Administering SSRS and Power BI](#)
- Paul: [SQLintersection Spring 2020 coming up fast!](#)
- Tim: [Managing Virtual Log Files in Azure Managed Instance](#)
- Erin: [Database Compatibility Level and Query Store](#)

I hope you find these useful and interesting!

Video Demo

In this video, Jonathan shows how to generate a self-signed certificate for Server Authentication to force protocol encryption for client connections over the network with SQL Server, and how to correctly set the permissions to allow the SQL Service Account access to the key store to read the certificate when it starts up using least privilege.

The video is just over 7 minutes long and you can get it [here](#).

The demo code is [here](#).

Enjoy!

Upcoming SQLskills Events

Our Spring 2020 classes are all open for registration!

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, IN-PERSON Immersion Events:

Chicago, IL, Spring 2020

- **IEPTO1:** Immersion Event on Performance Tuning and Optimization – Part 1
 - April 27 – May 1
- **IEReporting:** Immersion Event on Using and Administering SSRS and Power BI
 - April 27-28 **** NEW and US\$100 off through 1/25/20 ****
- **IE0:** Immersion Event for the Junior/Accidental DBA
 - April 27-29
- **IECAG:** Immersion Event on Clustering and Availability Groups
 - April 30 – May 1
- **IEPTO2:** Immersion Event on Performance Tuning and Optimization – Part 2
 - May 4-8
- **IEAzure:** Immersion Event on Azure SQL Database, Azure VMs, and Azure Managed Instance
 - May 4-7

LIVE, ONLINE Immersion Events:

- More coming in 2020!

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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