(July 15th, 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 I'm enjoying my staycation – gardening, fishing, hobbies, and reading are all on the cards!

Tim and I are still helping people out using our seven 3D printers to make mask straps that take pressure off of ears (see here) we've printed and shipped/donated almost 30,000 between us so far. We figure we'll be printing these through the end of the year. If you know anyone who could use some free straps, hit me or Tim up in email – don't be shy – I ship in units of 10s and 100s and I'm taking requests for shipments next week.

Stay safe and healthy!

SQLskills News

Live, ONLINE classes: our classes this year will all be live-streamed online in September and October, as it's not feasible to run in-person classes for the foreseeable future. We're 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 a recording of the entire class – something we've never done before!

- **IE0**: Immersion Event for the Junior/Accidental DBA
    o Half days on 9/14-17 and 9/21-24
- **IEAzure**: Immersion Event on Azure SQL Database, Azure VMs, and Azure Managed Instance
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- **IECAG**: Immersion Event on Clustering and Availability Groups
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    o Half days on 10/19-23 and 10/26-30

You can get all the details and registration information through the class schedule page 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.

SQLBits: Kimberly, Erin, and I will all hopefully be presenting at SQLBits in September. Our precons are:

- Paul: Performance Troubleshooting using Waits and Latches SOLD OUT!!
- Erin: Performance Tuning with Query Store in SQL Server and Azure
- Kimberly: Statistics4Performance: Internals, Analysis, Problem Solving

SQLintersection: The Spring show has been canceled and everything has moved to the Fall show in Las Vegas in December. More details here nearer the time.

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

From the archives: Back in 2015 I read Walter Isaacson's *The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution*. I love books about the history of computing and technology development and this one really packs it in its 500 pages. It has a chapter each for the early development of computer architecture, programming, transistors, microchips, video games, the internet, PCs, software, being online, and the web! The writing style is very enjoyable and not dry in the least. 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.

It's all about corruption in this newsletter, and someone actually asked yesterday how to find the table that contains a particular page ID. You can read through my explanation here…

Ponderings…

(From Tim this time – enjoy!)

In recent weeks, we've received several requests for help regarding corrupted databases. Some of these were related to ransomware attacks where the decryption left the database unusable and others were related to hardware failure. Thankfully some of the customers had proper backups

and we could help them recover, but some didn't have proper backups and the recovery was much more costly with having to script out objects and recover as much of the database as possible. Several had the worst case where the database was unrecoverable and the company lost the entire database.

It still shocks me each and every time I encounter a company that doesn't have any form of backup of a business-critical database server. Yes, not that they don't have recent backups, but NO backups at all. I know that the audience reading this post understands the importance of backups, so I'm going to talk about the database console command *DBCC CHECKDB*.

Most of us also understand that we need to be running *DBCC CHECKDB* on a regular basis to check for consistency and corruption in our databases. I regularly get asked about running *DBCC CHECKDB* in Azure. The question is easy to answer for Azure IaaS – YES, or Azure SQL Managed Instance – YES, but for Azure SQL Database, Peter Carlin from Microsoft [blogged](#) about how Microsoft manages data integrity for Azure SQL Database, and they do A LOT of things very well. I highly recommend reading the nearly 3 year old blog post.

They have extensive monitoring in place, automatic page repair, 'lost write' detection, and even claim to restore databases and perform integrity checks. What we don't know is how often those restores are done and what criteria a database must meet in order to have *DBCC CHECKDB* performed. What the blog does cover is how repair is achieved and offers 4 scenarios. The first two are mostly harmless; they rebuild the index or run *DBCC CHECKDB* with *REPAIR_REBUILD*. However the last two options can be detrimental for an organization. They'll run *DBCC CHECKDB* with *REPAIR_ALLOW_DATA_LOSS*, or if the damage is severe enough that *DBCC CHECKDB* can't be run, they restore using point-in-time to as far as they can and then try to manually replay any of the log they can.

Ok, it's really cool that for Azure SQL Database they do a lot of advanced monitoring and appear to try to move mountains to get the database back online with as little data loss as possible, however, being a DBA means we should be paranoid, right?

I have concerns related to a bunch of what-if's. I've seen corrupted databases function for years without issue other than *DBCC CHECKDB* failing because the data that is corrupt is so old that no one is accessing it. If no one accesses it, monitoring and alerting won't be triggered. This is why *DBCC CHECKDB* is so critical since it interrogates the entire database. What if the data is legally valuable and a month down the road we have to produce it for an audit or court case? What if data became corrupt but it isn't detected for 60 days and we only have 35 days of backup retention, or worse, only 7 days?

For me, there are too many what-ifs to not perform my own *DBCC CHECKDB* scans for Azure SQL Database. All of my customers have timeframes where I can run the scans without taxing the system to much. We still perform them weekly and know that we have 35 days of backup retention so we should be able to restore with no data loss. For something so critical, and where the advertised potential solutions clearly state "data loss", I'm not taking that risk for my clients.

#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.

(Leaving the TBT the save as last newsletter as it's relevant to Tim's editorial.) Dealing with corruption is the theme for this TBT:

- My course: *[SQL Server: Detecting and Correcting Database Corruption](#)*
- My course: *[SQL Server: Advanced Corruption Recovery Techniques](#)*
- My blog post: *[SQLskills SQL101: Why DBCC CHECKDB can miss memory corruption](#)*
- My blog post: *[SQLskills SQL101: Dealing with SQL Server corruption](#)*
- My blog post: *[Disaster recovery 101: fixing a broken boot page](#)*
- My blog post: *[Corruption recovery using DBCC WRITEPAGE](#)*
- My *[Corruption](#)* blog post category

I hope you find these useful and interesting!

Video Demo

In this Insider video, Tim shows you how to create an Azure Storage Account to use with Extended Events for Azure SQL Database. Tim then shows the steps to take to create a master key and database scoped credential as prerequisites before creating an extended event. Finally Tim shows you how to create an Extended Event and view the output file that was created in the new storage account.

The video is around 8.5 minutes long and you can get it in WMV format [here](#).

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

Enjoy!

Upcoming SQLskills Events

Our 2020 classes have moved to be entirely online in September and October and 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, Online Immersion Events:

Fall 2020

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Click [here](#) for the main Immersion Event Calendar page that allows you to drill through to each class for more details and registration links.

<u>Summary</u>

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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