

(February 22nd, 2022)

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 we're working on some brand new classes that we'll be offering in a few months!

SQLskills News

SQLskills Insider Sessions!

We wrote about the motivation behind our Insider Sessions and you can register for just one, or the entire series here: <https://www.SQLskills.com/iSessions>. We've started them back up in 2022 but we're going to cut back on the frequency. **But, the best news is that we've posted all of the prior sessions online for streaming. For free!** Just go to the [completed sessions](#) and you'll find all of the resources, and the videos! Enjoy.

As for the rest of this year, we'll do roughly one a month. Last week we did this one, and the recording is available to watch:

- **SQLskills Insider Session: Eliminating Low Hanging Fruit for Faster Performance with Jonathan Kehayias**
 - [Recording and demos](#)

Our thought: block some time – EVERY WEEK! **Dedicate 2 hours a week to Improving Your SQL skills with SQLskills!** Join us when it makes sense (hopefully always! 😊) or, read blog posts, review topics of interest, go spelunking in the documentation on a topic that's always interested you. Stay fresh, stay current – stay ahead of the competition!

Block some time NOW, register online, and when a session is planned to run, we'll send you a meeting link with joining instructions.

Book Review

The latest book I've read is Robert Jordan's [The Eye of the World](#), book one of the Wheel of Time series. Last year I saw that Amazon was making a series of this and I'd never heard of the series so I investigated and it looked good so I bought all five boxed sets (15 looong books). It's fantastic so far – I'm totally hooked! Lots of Tolkienesque elements to it and hard to say more without dropping spoilers. I conferred with my eldest daughter as I went along as she read it at

the same time. I'm on to the second one right away – hugely recommended for fantasy fans! (PS apparently the series is awful and butchers the story.)

The Curious Case of...

This section of the newsletter explains recent problems we've helped with on client systems or been asked about over email or #sqlhelp; they might be something you're experiencing too.

In Jonathan's Insider session last week there was a discussion about set-based operations and how they're done row-by-row under the covers, which is still more efficient than writing a cursor to implement row-by-row yourself. I wrote a blog post explaining it after class a few years ago and you can read my explanation [here](#)...

Ponderings...

(From me this time – I first ran this in 2016, but it cropped up last week several times. Enjoy!)

Continuing the corruption theme from the last newsletter, over the last week I've had two people ask essentially the same question over email (paraphrasing):

If I'm offloading my database backups to a secondary availability group replica, can I stop running consistency checks on the primary replica?

The simple answer is: no.

Back when availability groups were introduced in SQL Server 2012 (ten years ago already!), I remember a blog post from someone in Microsoft Product Support that said exactly that: availability groups allow you to offload both backups and consistency checks from the primary replica. And I remember vehemently disagreeing in the blog post comments.

The crux of the discussion is that the replicas are separate copies of the database, and they're stored on separate I/O subsystems, and hosted on separate servers with their own memory.

Now, remember that the primary causes of corruption are I/O subsystems, and to a muuuuuuch lesser extent, bad memory.

This means that one replica might get corrupted and the other replicas in the availability group don't, because the corruption is caused by one I/O subsystem. You might think that the I/O subsystem changes are shipped between replicas, but they're not; it's the log blocks containing changes that are shipped around and replayed, so corruption usually doesn't propagate to other replicas.

Aside #1: If you have all your replicas on the same I/O subsystem, the argument still applies, because they may be on a different portion of the I/O subsystem. Even if they're on the **same** portion of the I/O subsystem, it's unlikely that the corruption will have affected multiple replicas, although that is possible.

Aside #2: Why might you have replicas on the same I/O subsystem? It could be that you just want a second copy of the database to be available for reads, without affecting the main replica, and a bunch of other reasons.

So, you can see that running a consistency check on one replica doesn't tell you anything about the consistency state of another replica.

Here's why you need to run consistency checks for each of the replicas:

- Primary replica: this is where modifications are being made and likely queries too, so you need to make sure there's no corruption there
- The replica where backups are being offloaded: you need to make sure the backups aren't backing up a corrupt database
- Any readable secondaries: you need to make sure the queries aren't running on corrupt data
- Any other replicas: they could become the primary replica (or backup offloading replica) after a failure and failover, so you need to make sure there's no corruption there

Basically, you need to run consistency checks on **every** replica in the availability group, and there's no way to avoid it.

Call to action: Any time you have multiple copies of a database that are in use, or may become in use after a failover, you need to make sure that they don't contain corruption by running regular consistency checks on them, no matter whether a *DBCC CHECKDB* of the primary copy is corruption-free.

#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.

Producing a performance baseline and other monitoring is the theme this time, so here are some resources for you:

- Erin's Pluralsight course on [SQL Server: Benchmarking and Baselineing](#) that has 3.5 hours covering what metrics to capture and how to capture them.

- If you're still using Trace/Profiler, Erin's Pluralsight course on [*SQL Server: Replacing Profiler with Extended Events*](#) will be really beneficial.
- And a bunch of blog posts:
 - Erin: [*SQL Server Baselines Series on SQLServerCentral.com*](#)
 - Erin (from our Accidental DBA series): [*\(Day 18 of 30\): Baselines*](#)
 - Erin: [*\(Day 19 of 30\): Tools for On-Going Monitoring*](#)
 - Jon: [*\(Day 21 of 30\): Essential PerfMon counters*](#)
 - Paul: [*Capturing IO latencies for a period of time*](#)
 - Paul: [*Capturing wait statistics for a period of time*](#)

Posts since the last newsletter:

- Tim: [*What to Know About Azure SQL Database Serverless Compute Tier*](#) (on the SentryOne blog)

I hope you find these useful and interesting!

Video Demo

The demo video this time is taken from my Pluralsight course [*SQL Server: Understanding and Performing Backups*](#). In the video I show in-depth how log backups clear the log and how that can be interrupted by something like a long-running transaction.

The video is 8 minutes long and you can get it in MP4 format [here](#).

The demo code is [here](#).

Enjoy!

Upcoming SQLskills Events

We've moved all our classes to 2022 – schedule details will be published shortly.

With our new streaming system, you can now choose to attend a live, online event or purchase a recording to watch at your leisure, either individually or as part of a bundle. And all attendees of live events get lifetime access to the class recordings too!

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*](#)
- [*Community blog posts about our classes*](#)
- [*Immersion Event FAQ*](#)

LIVE, Online Immersion Events:

Spring 2022

- Details coming soon.

You can get all the details on our [training options page](#) or just go directly to our [new shop](#).

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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