(November 7th, 2016)

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.

Quick Tips for our Insider friends!

Hey Insiders,

This newsletter is coming to you from Chicago when we've just started our last week of Immersion Events running this year – with three running side-by-side (IEPTO1, IEPDS, and IE0). Having run 17 classes in 2016, it's time for a short break. We resume our Immersion Event line-up back in Chicago in April 2017; we hope to see you there! **Our 2017 class lineup**: nine classes in three weeks, including a **brand new, 3-day course on PowerShell**. All courses have a discount (US$120 for 3-day courses; US$200 for 5-day courses) for registrations and payments received before January 1st, 2017.

Check out all the dates and details on our class schedule page.

And, the Fall has been a busy time for us. Glenn held down the proverbial "SQLskills fort" at PASS Summit and the rest of us were Las Vegas bound for our Fall SQLintersection conference. In addition to 10 workshops, dozens of sessions, and a phenomenal speaker line-up – our attendees asked great questions and gave us some fantastic answers at our SQLafterDark trivia evening event (which was our best one so far!).

Kimberly's escapades with Erin Stellato, Jes Borland, Aaron Bertrand, and David Pless at the "penny slots" provided hours of entertainment for a reasonable loss of funds and my escapades at the craps tables were relatively successful (I lost less and less money each time I played ☺). Overall, it was an incredible success and we hope you'll join us next May in Orlando for our Spring SQLintersection or in the Fall when we're back in Vegas. Check out www.SQLintersection.com for more details!

And even if you can't join us in person, I've put out our annual call to user groups to get remote sessions scheduled for 2017. This year we'll end up having done 94 user groups and PASS Virtual Chapter presentations across the team, up from 86 in 2015, which I think is a tremendous achievement. If you'd like one of us to present for your user group, check out my blog post here.

Continuing on the not-really-a-book theme from last time, along with dot-to-dot books, I also like art books, but I don't have an artistic bone in my body (as anyone who's seen me draw a map of the US in IEPTO1 or IEPTO2 can attest!). I came across a couple of really good extreme color-by-number books you might be interested in: *Color Me Wild* and *Color Quest* – check them out!

I did actually finish a book since the last newsletter, the concluding part of Neal Asher's The Owner trilogy: *Jupiter War: The Owner: Book Three*, which I mentioned book one of a few newsletters ago. If you like sci-fi, check out Neal Asher and this series – it's really cemented Asher as one of my top-3 favorite sci-fi authors (along with Alastair Reynolds and Peter F. Hamilton).

Note: you can get all the prior Insider newsletters here.

The Curious Case of…

This section of the newsletter explains problems we've found on client systems; they might be something you're experiencing too.

Jonathan was recently working with a client who was experiencing high latency with transactional replication, and unusually high read activity in the subscription database, after deleting and reinitializing some subscriptions.

After some investigation, he realized that although the old subscription tables had been renamed, the old PK constraints hadn't been removed, and the Distribution Agent didn't complain about the existing constraints in a really visible way when reinitializing the subscriptions.

This meant that every UPDATE command on the new tables had to perform a full table scan to find the row to update, because the tables didn't have clustered indexes!

After creating the proper constraints on the subscription tables, the latency dropped back to normal.

The moral of the story is that when recreating subscriptions, it's better to either fully delete the old subscription tables or make sure that their replication-created constraints are removed.

Paul's Ponderings

Although every new release of SQL Server comes with wonderful new features, with lots to learn (and help others learn), there are a ton of topics that DBAs and developer always need to know about.

About a week ago at our Fall SQLintersection conference, I was teaching my 200-level *Corruption Survival Techniques* session to a pretty good turnout given that I was up against three other sessions, including Kimberly lecturing on the evils of one-size-fits-all stored procs. The session talks about corruption and how it happens, how to run consistency checks, using *DBCC CHECKDB*, and running repair.

When I'm talking about repair, I explain that if you have to run *REPAIR_ALLOW_DATA_LOSS* and it actually deletes data records, you need to reinitialize any affected replication topologies,

and validate any affected constraints. This is all documented in Books Online, but that doesn't mean that people read it and know that. ☺

What *isn't* in Books Online, and I make sure the attendees realize, is that repair is all about making the database structurally consistent – it doesn't know anything about the data relationships between tables (either protected by constraints or just inherent in the schema design). This means that after a data-losing repair, the data relationships in the database may well be broken.

I then asked the room-full of people: "How many of you have an application data consistency checker that you can run to validate all the business rules and relationships that the application depends on? In fact, how many of you even have a way to test that the application is working correctly after running a repair or deploying new code?"

Guess how many people put their hand up? Two. That's actually better than the last time I taught the session, to roughly the same number of people, where no-one put their hands up.

But it's still a really bad position for most of the SQL Server user base to be in.

Call to action:

You really should have some way to validate that your application is running on correct data. Otherwise, in the best case, it will fail, but in the worst case, it will continue running erroneously – maybe with wrong results that affect your business.

This basically means codifying the required relationships in constraints and/or some code that verifies the required relationships (if they can't be expressed as relational constraints) are correct.

If you have a third-party application, it might be hard or impossible to persuade the vendor to provide such a tool, especially if they specifically don't support running repair on their database.

Bottom line: Your business depends on the applications running in the data tier, and you need to make sure, as much as you can, that they're running correctly.

Video Demo

One of the things I always find fascinating is digging into the transaction log to see what happens under the covers when certain operations occur. In one of my first Pluralsight courses, *SQL Server: Understanding Logging, Recovery, and the Transaction Log*, I included a few long demos that do just that. For the demo video this time, I present one of the course demos where I investigate what happens when a table is created and the first row inserted into it.

The video is just under 6 minutes long and you can get it in WMV format here.

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

Enjoy!

SQLskills Offerings

We've just announced the first half of our 2017 class lineup, with discounts available on all classes for registrations/payments received before January 1st, 2017.

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](#)

Upcoming Immersion Events

Chicago, IL, April/May 2017

- **IE0**: Immersion Event for Junior/Accidental DBAs
  - April 24-26 **US$120 discount for registering in 2016!!**
- **IEPTO1**: Immersion Event on Performance Tuning and Optimization – Part 1
  - April 24-28 **US$200 discount for registering in 2016!!**
- **IESSIS1**: Immersion Event on Learning SQL Server Integration Services
  - April 24-28 **US$200 discount for registering in 2016!!**
- **IEBI**: Immersion Event on Business Intelligence
  - May 1-5 **US$200 discount for registering in 2016!!**
- **IEPTO2**: Immersion Event on Performance Tuning and Optimization – Part 2
  - May 1-5 **US$200 discount for registering in 2016!!**
- **IESSIS2**: Immersion Event on Advanced SQL Server Integration Services
  - May 1-5 **US$200 discount for registering in 2016!!**
- **IEPS**: Immersion Event on Powershell
  - May 8-10 **New class, US$120 discount for registering in 2016!!**
- **IEPDS**: Immersion Event on Practical Data Science
  - May 8-12 **US$120 discount for registering in 2016!!**
- **IEHADR**: Immersion Event on High Availability and Disaster Recovery
  - May 8-12 **US$200 discount for registering in 2016!!**

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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