

(August 5th, 2013)

If you know someone who you think 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 from the [Kona Aggressor](#) live-aboard dive boat on which we're diving for two weeks with the kids (and where they got SCUBA certified last year). This is our favorite way of diving, where we get on the boat and do five dives per day without having to carry our gear around. It's also a really cost effective way of doing a large number of dives while on vacation. If you go to the [Website Images](#) page of SQLskills.com, the first photo of a spinner dolphin was taken by Kimberly in Kona last year.

We've got two special pricing offers for some of our September classes: buy-one-get-one-free for everyone or 25% off for past attendees – see my blog post [HERE](#) for details!

We also have our [new IE1 class in Chicago](#), and our Fall SQLintersection conference in Las Vegas at the end of October (details [here](#)). There are lots of opportunities for learning this Fall and we hope to see you!

The most recent book I've read is Lewis Buzbee's [The Yellow-Lighted Bookshop](#). Continuing on the books-about-books theme from the previous newsletter, this book is a great memoir of Buzbee's time as a bookstore clerk/manager and a publisher sales rep. It also relates the history of book-selling, starting with the ability to buy the Egyptian Book of the Dead from Ancient Egyptian funeral directors and ending in the present day. It bemoans the advent of e-readers (vile things!) and the gradual shift towards buying books online. I'm guilty of the latter, buying almost 100% of this year's 100+ new books so far on Amazon.com or Amazon.co.uk – but the ability to research, read reviews, and have their algorithms predict similar books I'll (invariably) like is just too convenient. Recommended for anyone who likes books and reading.

Please [let us know](#) if you liked what you read/saw here and/or have any suggestions for future Quick Tips.

Note: you can get all the prior Insider newsletters [here](#).

Paul's Ponderings

In the [previous newsletter](#) I discussed filtering out benign wait types. One of the other things that can trip up your analysis of wait statistics is jumping to a conclusion about what a wait type is implying.

There are two wait types that cause a huge amount of confusion: *CXPACKET* and *ASYNC_NETWORK_IO*. Over the years I've seen many people wrongly describe what these wait types mean and what you should do about them. I discussed the *CXPACKET* wait in detail in this [newsletter back in February](#), so in this newsletter I'll discuss the *ASYNC_NETWORK_IO* wait.

The problem with this wait type is its name, and specifically the word *NETWORK*. This implies that the network has an issue, but that is mostly not the case.

This wait type means that SQL Server has sent some data to the client application and is waiting for the client application to notify SQL Server that it has received the data and is ready for more. It should really be called something like *CLIENT_DATA_ACK*, which would help to prevent confusion.

The most common cause of increasing *ASYNC_NETWORK_IO* waits is the client application inefficiently processing the data that it has been sent. An example of this would be 'RBAR' processing (Row-By-Agonizing-Row) where one row is processed at a time by the client and only when all rows have been processed is the acknowledgement sent to SQL Server.

It would generally be much more efficient for the client application to cache all the data it has just been sent and immediately acknowledge receipt to SQL Server, thus allowing the SQL Server thread to continue processing at the same time as the client application processes the data it has just cached. Otherwise SQL Server is waiting for the client application to process all the data it was sent, then the client application is waiting for SQL Server to process and send it more data, and so on.

Occasionally, it is a true network issue that leads to *ASYNC_NETWORK_IO* waits, but that's not the first thing I would check unless I know for sure that the client application isn't doing RBAR.

Call to action: When you're using wait statistics as part of performance analysis and troubleshooting, make sure you understand what the prevalent wait types really mean before jumping to a conclusion and wasting time troubleshooting a non-existent root cause.

I'm curious to hear your thoughts on *ASYNC_NETWORK_IO* waits and RBAR processing, so please feel free to [drop me a line](#), treated confidentially of course.

Video Demo

From Paul:

I'm on vacation this week and it's my turn for the Insider video, so instead of recording something, I'm giving you a video from my 7.5 hour Pluralsight course on [SQL Server: Logging, Recovery, and the Transaction Log](#). This demo shows you how SQL Server will crash recover databases in parallel by spinning up a certain number of threads and then walking the list of databases in database ID order.

The video is just under 5 minutes long and you can get it in WMV format only [here](#).

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

Enjoy!

SQLskills Offerings

As I mentioned above, we have three brand-new classes running in Bellevue, WA this September/October 2013. They're sure to sell out fast, so don't delay!

Please know that these classes are final as the hotel contracts are signed, and the classes will not be cancelled or moved for any reason, nor will the dates change.

- September 16-20, 2013: Internals and Performance (**IE1**) in Bellevue (**SOLD OUT!**)
- September 18-19, 2013: Hardware (**IEHW**) in Bellevue, WA – USA
 - See [here](#) for special pricing offers!
- September 23-27, 2013: Performance Tuning (**IE2**) in Bellevue, WA – USA
- September 30-October 2, 2013: Accidental DBA (**IE0**) in Bellevue, WA – USA
 - See [here](#) for special pricing offers!
- September 30-October 3, 2013: Advanced T-SQL (**IETS**) in Bellevue, WA – USA
- **NEW: November 11-15, 2013: Internals and Performance (IE1) in Chicago, IL – USA**

See [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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