PRACTICAL SQL SERVER

SQL Server Database Corruption, Part VIII: The Importance of Backups

overachiever | Mar 29, 2012

In Part VII of this series on SQL Server Database corruption we touched upon how backups can be used as an **additional** means of early detection for corruption – by making sure to validate the checksums of all data being backed up.

The Importance of Backups In Recovering from Corruption

But, did you know that backups are your BEST line of defense in recovering from MOST forms of database corruption? (If you've been following along in previous posts, then you already knew this.)

Granted, there is one form of corruption that I've encountered that CAN safely be corrected without the use of backups (or, at least, I've seen cases where I was able to correct it without the absolute NEED for backups – even though I had them standing by as a precaution and even though I FIRST tested these corrections on copies of my databases made from backups). But this specific type of corruption really isn't related to the kinds of IO subsystem corruption that have been the focus of this series of posts – and, instead, this type of 'corruption' really deals with a question of meta-data getting a bit out of sync and needing to be updated or refreshed via the use of DBCC

UPDATEUSAGE().

Otherwise, for an excellent overview of what your options are for dealing with corruption WHEN you don't have viable backups available, check out Paul Randal's excellent Tech Ed Session where he covers various mechanisms of recovery without using backups. (And note that while I'm making the case from Paul's video that you SHOULD have backups available – given what's required otherwise (and given how low your potential for success can be without backups) – Paul makes similar arguments but ALSO addresses VERY advanced scenarios where UP-TIME is more important than DATA INTEGRITY).

Hopefully, though, in watching that presentation you'll come away with a much more healthy respect for how important backups can be, and for how you need to be regularly testing your backups to make sure that they're viable for use in disaster recovery scenarios.

Backups are an Essential Component of Disaster Recovery Plans

It sounds dumb, but backups are an essential component of any worthwhile disaster recovery plan. And while that definitely includes most concerns around database corruption, it's important to call this simple fact out as it's increasingly common to find cases where many organizations confuse High Availability solutions as a replacement for backups as a Disaster Recovery.

Consequently, as we'll see in the next post in this series, it's impossible to over-stress the need to not only have regular backups on hand but to regularly test them to both ensure that they're valid and to ensure that you are comfortable working with and restoring from backups.

Part IX: Responding to Corruption

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```
SELECT STRING_AGG(CHAR(n), '')
  WITHIN GROUP (ORDER BY CHAR(n) COLLATE Latin1_General_CS_
FROM dbo.GetNums(0, 255)
WHERE CHAR(n) COLLATE Latin1_General_CS_AS LIKE '[A-Z]';


SELECT STRING_AGG(CHAR(n), '')
  WITHIN GROUP (ORDER BY CHAR(n) COLLATE Latin1_General_BIN
FROM dbo.GetNums(0, 255)
WHERE CHAR(n) COLLATE Latin1_General_BIN LIKE '[A-Z]';
```

BUSINESS INTELLIGENCE > MICROSOFT SQL SERVER

The Challenge Is on: Maintain a Custom Letter-Based Sequence

If you need to implement a custom sequence solution, and you want it to perform as well as possible, you need to ask yourself which guarantees the solution needs to provide versus which it doesn't.

Itzik Ben-Gan | Apr 01, 2018

Recently I delivered an advanced T-SQL class in Europe, and one of my students, Nicolas Barreau of Avanade France SAS, presented a nice little puzzle. The task wasn't very complex, but it was interesting and fun to work on, and I hope you will enjoy working on it, too.

The Challenge

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The challenge Nicola presented was to maintain a custom, letter-based, cycling, gap-allowing, sequence, with values in the form LLL, where L is an alphabet letter in the range A through Z (26 symbols). Nicola's company uses the sequence value as a match flag for settlement, for instance, between payment and invoice. The first value produced should be AAA, and it should advance as if the letters were digits in base 26, like so:

AAA

AAB

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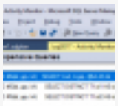

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Apple Is Ready for the Tech Backlash

The only real guarantee that companies won't go overboard in invading customers' privacy is that they have large revenue streams which make it an unnecessary risk.

Bloomberg | Mar 30, 2018

(Bloomberg View) --It's easy to understand Apple CEO Tim Cook's somewhat self-righteous comments on the Facebook-Cambridge Analytica scandal: His company has never emphasized customer data monetization, and privacy has been one of its persistent selling points. Apple still collects our data — and reserves the right to share it — but the company has a much better track record than newer tech titans.

"The truth is, we could make a ton of money if we monetized our customer — if our customer was our product," Cook said on Wednesday. "We've elected not to do that." Asked what he'd do if he were in Facebook CEO Mark Zuckerberg's shoes, he replied, "I wouldn't be in this situation."

In reality, Apple collects more information about its customers than Facebook because it offers more products and services. It knows everything from an iPhone's location to its owner's taste in movies and music. It's all in the company's privacy statement, including the frank admission that Apple will share the data with "strategic partners that work with Apple to provide products and services, or that help Apple market to customers" and with law enforcement. Apple also lets applications that run on its platform (including Facebook) hoover up data. And it does have a small ad platform that allows targeted advertising.

Apple's closest equivalent in terms of data collection, sharing and "pass-through" to app developers is Google, which offers roughly the same array of services (plus search) and also owns mobile and desktop operating systems. The difference is that Apple has imposed some voluntary restrictions on itself: For example, it anonymizes location data (unless you're using the "Find My iPhone" feature) and generally employs "differential privacy" — a cryptography-based practice of obtaining usage and preference data without linking it to specific users. Google and Microsoft also use that to some degree, and a co-inventor of differential privacy, Cynthia Dwork, has even worked for Microsoft

Research, but Apple was the first to market the technique as an advantage for its customers.

Cook clearly thinks of these self-restrictions as a good way of staving off external regulation. On Wednesday, he scolded Facebook for not being as far-sighted. "I think the best regulation is no regulation, is self-regulation," he said. "However, I think we're beyond that here."

As a user, however, I wouldn't put much trust in any company's ability to regulate itself. Cook has been wary of monetizing Apple's user base, but he won't be CEO forever. And people do change their mind, especially when it comes to picking up money that's there for the taking. Regulation — such as the EU's General Data Protection regulation, launching in May — is a more reliable way to ensure a level playing field. That's why Google, Apple and Microsoft all have good, convenient privacy controls which allow the user to turn off various kinds of data collection, erase data that companies already have and opt out of targeted advertising. Facebook, too, promises to put such controls in place soon.

But even external regulation isn't a reliable guarantee of privacy. Most people won't fiddle with the controls because they may not even realize what all the fuss is about. And by default, companies with advertising-based business models will want to collect as much information as they can and anonymize as little of it as they can. Neither Google nor Facebook, for example, will make the same commitment as Microsoft that no ads will be targeted based on your email and chat contents. Nor will they make it as easy as Apple and Microsoft make to shut off ad personalization.

No regulator will take care of that: It's not their goal to kill off the ad-based business model and with it Facebook and Google, and the model won't work without data collection and ad targeting.

The only real guarantee that companies won't go overboard in invading customers' privacy is that they have large revenue streams which make it an unnecessary risk. Apple is reliable in this regard: It's a hardware company that also sells content and software on commission and on a subscription basis. Microsoft, with its cloud, software licensing and subscription businesses, is even less likely to go rogue in data collection because it no longer has a mobile platform to speak of.

That's why Microsoft and Apple aren't suffering much from the Cambridge Analytica-triggered tech sell-off. Microsoft shares are up 4.5 percent since the beginning of the year, Apple shares are down just 1.63 percent. That compares to Google's 4.6 percent drop and Facebook's 13.3 percent dive. I believe the gains made by Twitter and Snap, two companies fully dependent on ads and information-gathering, are a temporary fluke: They aren't as frequently mentioned in connection with data harvesting as Google and Facebook. As heavier regulation of the ad model becomes