ApexSQL Log

for SQL Server 2000 and 2005

The Industry Standard for SQL Database Log Reading and Recovery

Data Sheet

Recovery Wizard offers five types of recovery:

1. Deleted Data Recovery: Recovery of data that was deleted with DELETE statement

This type of recovery can be done from traditional transaction log sources (online, backup, detached) or from online database files. The first option was available since early 2004 in the form of UNDO scripts. Now it has been integrated into Recovery Wizard although it's of course still available as generation of UNDO scripts for more precise recovery needs.

The second option is new in Log 2005 and allows recovery even when database is not in FULL RECOVERY mode and no relevant transaction log data is available. This option scrubs database's data pages for every known bit of deleted information and tries to recover deleted rows and even their BLOB data from there. As with other data pages recovery options, quality and completeness of data will depend on the post-event (in this case DELETE) database activity.

2. Truncated Data Recovery: Recovery of data that was lost with TRUNCATE TABLE statement

We introduced this type of recovery back in Log 1.85 and now we integrated it into Recovery Wizard. This type of recovery can be done only through online database data files and not through transaction logs source since TRUNCATE doesn't write any truncate data info in the logs (that's why it's so fast compared to DELETE statement). Recovery is done by analysis of free pages in the MDF file and quality of recovered data depends on post-event database activity.

3. Dropped Data Recovery: Recovery of data that was lost with DROP TABLE statement

This type of recovery can be done through traditional transaction log sources plus online data files or just from online data files. We introduced the first option back in version 1.85 and in it we use transaction log data to recover table structure and online data files to recover table data.

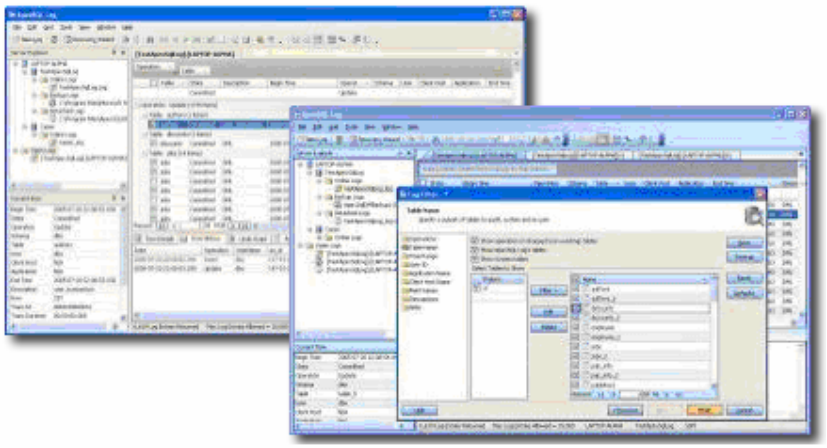
The second option is new to Log 2005 and allows complete recovery of dropped data even when database is not in FULL RECOVERY mode and no relevant transaction log data is available. Here both table structure and table data are recovered from free pages found in database data files.

4. Lost Data Recovery: Recovery of data from detached data files (MDF files)

This is a new option in Log 2005. It allows you to recover deleted, dropped or truncated data from a detached data file or files. But more importantly it allows full data recovery from files that cannot be reattached to SQL Server. For now this option allows full recovery of table structure and data but doesn't recover other types of database objects (like views, stored procedures and so on)

5. Lost database objects recovery

This type of recovery can be done through traditional transaction log sources or through database data files. First option is the same as DDL REDO auditing option which was first introduced in Log 1.50. DDL REDO is still available of course as well as its counterpart DDL UNDO.



"P.S. From what I've seen so far with the program, I can honestly say it's a great tool and the layout of the user interface is excellent. Often I find I won't use a program if the interface is either confusing, cluttered or just plain ugly, even if it's the best exponent of what it's designed to do. No such problems with the ApexSQL Log! :)"

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"...your product has been working perfectly and the guys in compliance and audit are happy."

David O'Keefe
Analyst/Programmer
Fimat Australia

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ApexSQL
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ApexSQL Log

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1. We're seeing more and more cases where users experience disappointment with recovery tools in existence now in terms of success of recovery. For example, what if I just truncated a table and log is automatically truncated on checkpoint (which is the default setting with SQL Server)?

Previously (with versions of ApexSQL Log up to 2005 and with all other Log Reading/Recovery tools), if this was your case you were basically out of luck and your only option was to restore a backup. But with the new technology implemented in ApexSQL Log 2005 you can try to recover the truncated data. There are no guarantees that you will be able to recover all of it but if you act fast enough, your chances are high that you can still achieve a successful recovery.

2. Why can't these tools recover everything in all cases?

This actually doesn't depend always depend on the log technology itself but rather on the database activity after the truncation. Table truncation is fast because data is not really deleted, which would involve logging all deletes into the transaction log and would slow things down. Instead, during truncation parts of the db files are just marked as free to be reused. If you have truncated a table, the best thing to do is to stop all db activity which will minimize the amount of reused data which in turn maximizes the amount of data that we can recover. Although we can't always recover everything – the majority of current Log Reading/Recovery tools can't recover *anything* in this case. If the Transaction Log doesn't contain the data – which is the case in truncation – these tools are simply useless.

3. And what if I dropped the table that I truncated?

Same thing actually but with a twist: ApexSQL Log will first recover dropped meta-data and create DDL script for the dropped table and only then recover the dropped data itself.

4. How do other Recovery tools handle this situation where the affected data is contained in a table that has subsequently been dropped?

In most tools that attempt to recover in this scenario, they rely on meta data in the transaction log itself, to reconstruct the dropped table, but this meta data often doesn't exist (it may have itself been truncated at a checkpoint which is SQL Server's default setting)

There is even one tool that can do recovery only if a backup exists and the structure of the table hasn't changed since data was deleted. The challenge is to recover without these additional and often unrealistic requirements that often simply don't exist in real world scenarios.

In this case, where other tools fail, ApexSQL Log, succeeds by taking a redundant approach and looking at several sources of structure meta -data. Wherever it finds viable meta data, it reconstructs the table and can then recover the dropped data.

The problem with disaster recovery is most likely you are in a suboptimal situation to begin with. Using tools that assume perfect conditions – a pristine transaction log file, viable database backups and/or existing undropped objects, no changes to object schema etc etc – result in less than successful recoveries in most real world situations.

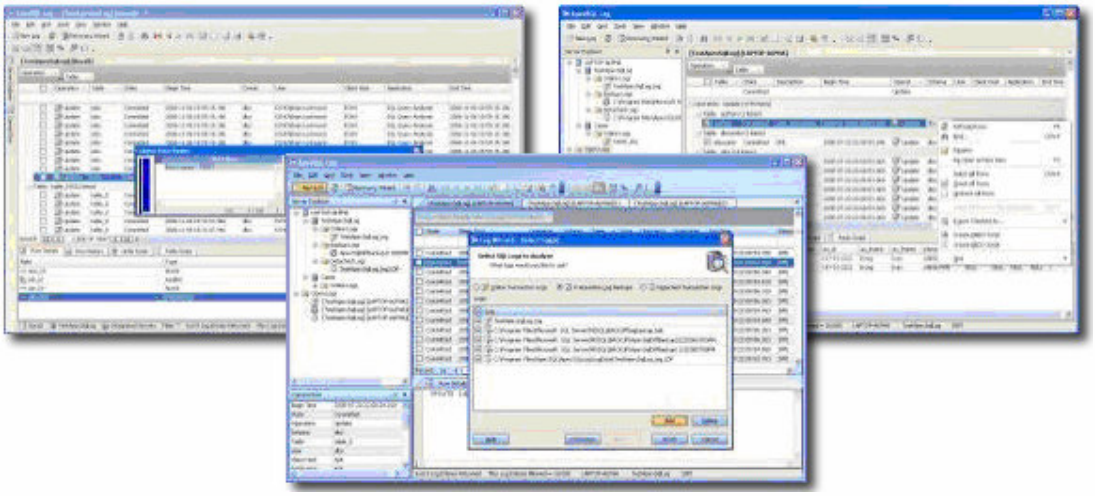
ApexSQL Log 2005 provides a level of redundancy that ensures much higher level of recovery success than other recovery tools – ensuring a high probability of successful recovery even in less than perfect recovery conditions.

5. That sounds great! But what is this with recovery of detached MDF files? Can't these files just be reattached to SQL Server using sp_attach_single_file_db?

In most cases they can be just reattached. In those cases SQL Server automatically creates new transaction log file and carries on. But sometimes this fails and db gets marked as suspect rendering this file useless in terms of recovery and destroying your database in the process. The new version of ApexSQL Log solves this in a clear and simple manner - even if MDF file cannot be attached at all, if it's only partially complete and so on. We scrub that file for every bit of user info it has.

6. Is that all for recovery options?

Actually, we have simplified all Log's recovery options in ApexSQL Log 2005 (like say recovery of deleted data) into single Recovery Wizard. Users can still use old tried ways (like REDO script generation) but at the same time we offer one unique interface for all recovery operations.
Furthermore, even if we do not offer a recovery option in the interface, we may know how to recover the data. So if in doubt – ask us. We have yet to have a case where we couldn't recover the data if it was still there.



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