SQL-Restore in operation

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SQL servers have established themselves as the standard for databases in recent years. This is the case not only for large and medium-sized businesses but also for small environments that until recently were still managing their customer data with solutions such as Microsoft Access. The everyday use of SQL does offer many advantages but it also complicates processes such as backing up and restoring data. Kroll Ontrack is tackling this problem with its PowerControls for SQL, a tool that makes it possible to restore database tables from a backup while in operation.

Kroll Ontrack PowerControls for SQL allows users to quickly restore individual tables or rows from a database backup. It is not necessary to take the database server offline or restore the entire database as is normally required for SQL restores. The tool's interface has been kept extra simple, which makes it easy to use, both for database administrators and for other users.

As well as the restore function, PowerControls for SQL also provides an overview of table contents. The product also supports native SQL backups in addition to snapshots.

Data loss can occur anywhere

Data loss is a common problem for all databases, regardless of a company's size. Employees sometimes delete entries that they don't realise are actually relevant in another context or they overwrite important data with incorrect information.

But it also often happens that developers and administrators accidently destroy databases or relevant information during their work. In cases like these, it is vital to be able to restore the database from a backup.

Although creating an SQL backup has become increasingly easy in the past few years, often running automatically in the background, restoring data remains a particular challenge. The responsible employees normally have to restore the entire contents of the affected database even if they actually only need to restore one single entry. This is often time-consuming, especially for large environments, and the database

server can often not be used for other tasks during this period. Furthermore, the restore process is so complicated that it can only be carried out by IT specialists, particularly when it runs via an enterprise backup program.

Simple restore options

PowerControls for SQL, on the other hand, accesses existing backup files and makes it possible to directly restore this content on a running SQL server with an active database. As well as backup files, the product also supports MDF files with LDF log files and NDF files. Access rights to this data are sufficient for the operation of PowerControls for SQL. Nevertheless, encrypted and compressed backup data cannot currently be used any more than differential backups, files and file groups, multiple file backups, and transaction logs.

In terms of the server, the software is compatible with the Microsoft SQL servers 2008 R2 and 2012 in both native and mixed mode. It also supports Windows and SQL authentication. PowerControls for SQL requires administrative rights to access the server and neither the databases nor the source files can be encrypted or compressed. Furthermore, the solution can only restore tables, rows and columns and is unable to restore SQL database objects such as system tables, procedures, keys or similar objects. Indexes, permissions and similar elements cannot be restored either.

The test

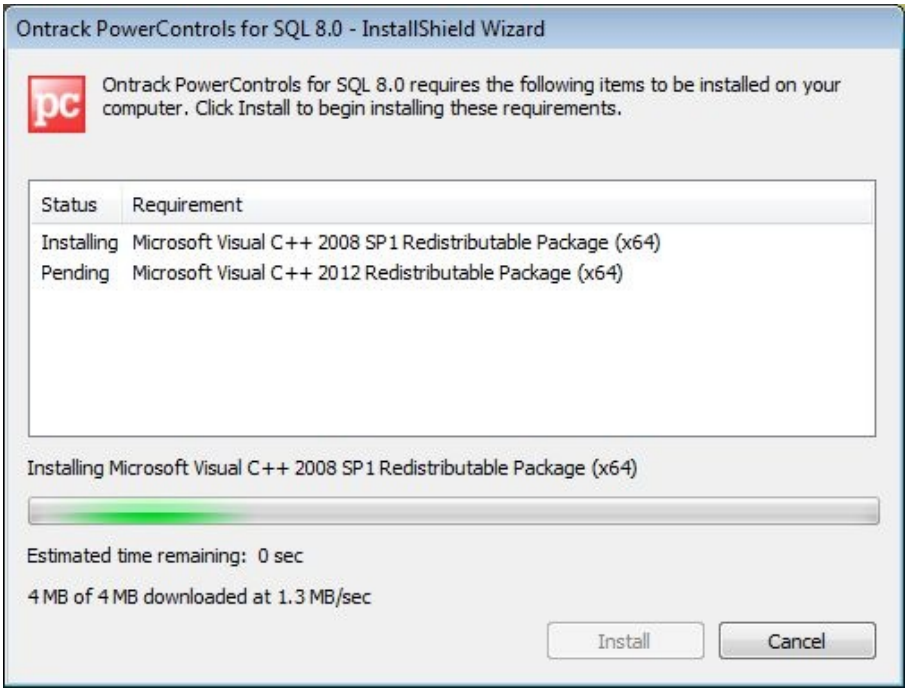
We set up a Microsoft SQL server 2012 in our test laboratory, which we used to run Kroll Ontrack PowerControls for SQL. When configuring the server, we left as many settings as possible on the standard values. We did, however, set the system to regularly create entire backups of all existing databases on the server.

Windows Server 2012 R2 was used as the server operating system and the system ran on an Intel quad-core Xeon processor with 1.6 GHz frequency, 4 GB RAM and 280 GB hard disk space. As for the databases, we installed the two Microsoft example databases 'Adventure Works 2012' and 'Adventure Works TS 2012' on the system, as well as our own customer database. SQL Server Management Studio 2012 was used to manage the SQL server while in operation.

After we finished setting up the server and the databases, we then began working on the data and deleted various elements from the system as part of the test. We subsequently installed PowerControls for SQL and used this solution to access the backup files, restoring the data that we had previously deleted. Finally, we directly accessed the affected databases to check whether the restore process had been successful.

Installation

We will now describe the installation of PowerControls for SQL. Kroll Ontrack provided us with a license file and a link for downloading the setup file for the test. After downloading both files, we opened the setup file. This launched the installation routine and checked the system to ensure that all dependencies were in place.

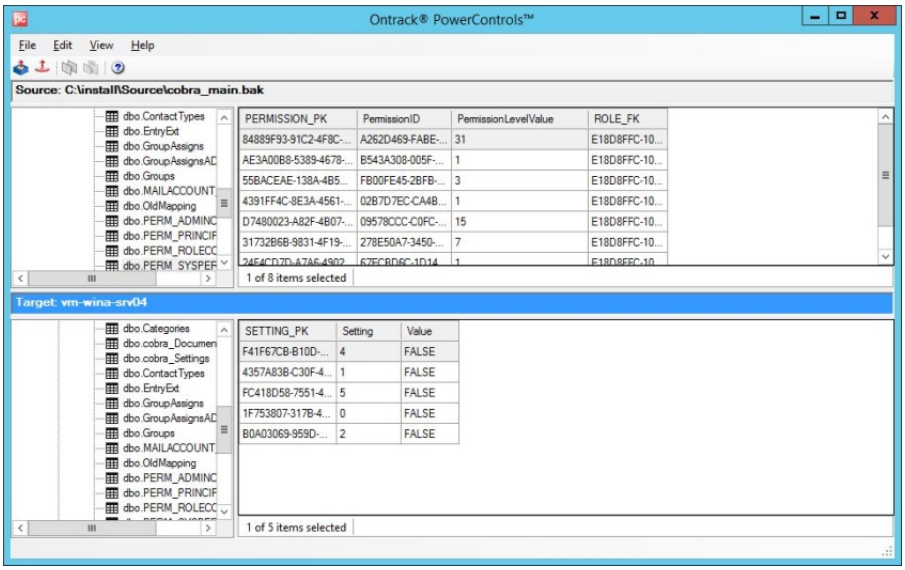


All existing dependencies are taken care of by the PowerControls for SQL setup routine

Our computer was missing two C++ Redistributable Packages at the time. The setup routine automatically loaded them without us needing to do anything. This was definitely an

advantage because not every installation program does this sort of task for the administrator.

The setup wizard then presented us with a welcome screen, displayed the licence conditions and requested the installation path. We entered this and installation began straight away. All that we had to do in the end was manually copy the licence file into the program directory and then we could get to work. We can conclude that installing this software should not create any great difficulties to the majority of users.



Users can use the drag-and-drop function in the tool's work area to move the data that needs to be restored into the target area

Data restore

Before we were able to test the restore functions of PowerControls for SQL, we first needed to delete various data items from the test database on our SQL server, as mentioned above. Backup data was already available to us at this point.

We then launched PowerControls for SQL. The software greeted us with a wizard that helped us select the source files and establish a connection with the SQL server that was to be used as the target of the restore process. All the actions completed by the wizard can also be done via the program interface during regular operation. Experienced users may actually consider the wizard to be a hindrance, which is why it is always possible to deactivate it. However, the wizard is a useful starting point for new users who want to get an idea of the performance capacity of the Kroll Ontrack tool.

As mentioned above, the assistant begins by requesting the source file that is to be used and then immediately displays the file types that it supports. The responsible employee then enters the address of the affected SQL servers and the accompanying credentials. They also indicate if they would like to connect with the entire server or just with one database. The wizard then closes and the users are directed to the tool window.

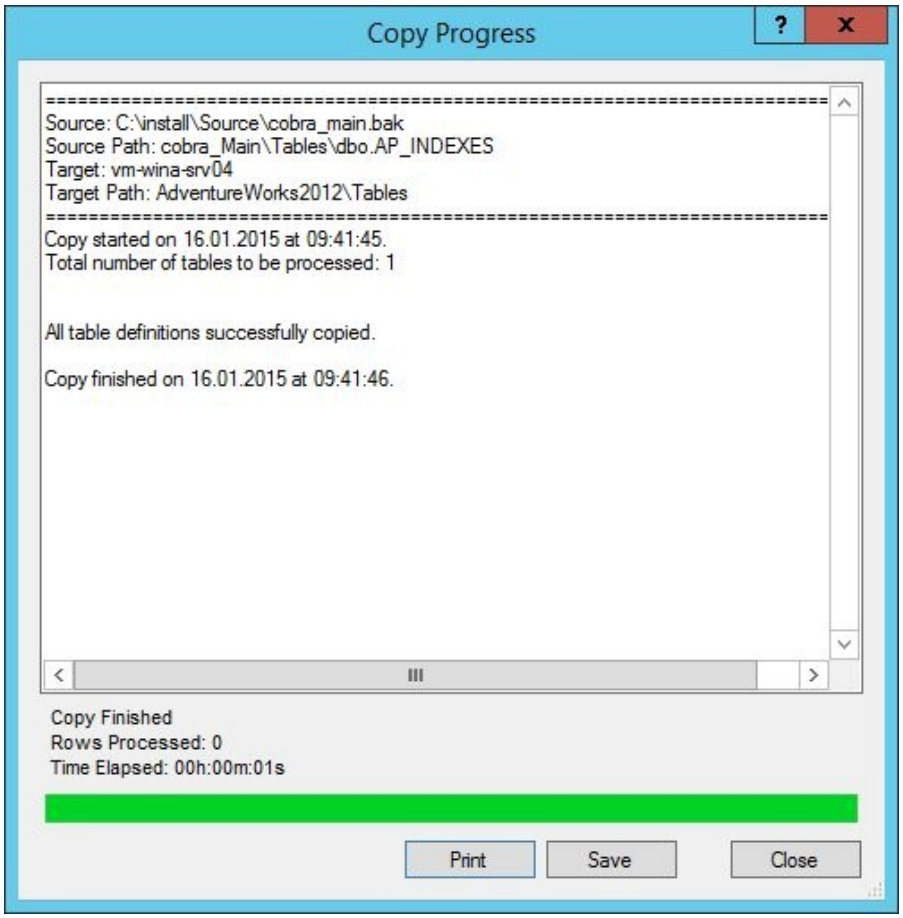
This is where the software displays all of the existing source and target data. The source area is found in the upper half of the window. It consists of both a tree view, displaying all restorable content from the source file in a tree structure, and a list view, displaying the data (for example, a table) located in the selected element of the tree structure. In this way, the list view can be used to preview the existing information before restoring the data. The preview comprises the first 1,024 columns and the first 100 rows of the table, in which each column can contain up to 300 characters. The software notifies you if the table is larger than this. The overview does also display content that is not supported by PowerControls for SQL but this is labelled as <UNSUPPORTED>. PowerControls for SQL also allows users to quickly search through various backups and restore the correct version of the data without any delays or time-consuming tests.

The target area works in the same way as the source area. A tree view on the left-hand side displays the existing databases on the server and their content. The adjacent list view allows administrators to view the data within the selected elements. If administrators were to add another database to the server after establishing the connection, they would need to update the server view within PowerControls so that this server will also be displayed in the data restore tool.

If a user wishes to restore an entry from the backup file, the entry can either be moved from the source area to the correct section in the target area using

the drag-and-drop function or it can be copied from the top section to be added to the bottom section. Users can perform these actions using the icons available in the taskbar, which can also be used for opening source files and target servers. This means that they have access to the main commands at all times. We can confirm that during testing there were no problems restoring the data that we had previously deleted and the content was immediately available in the network again after using the drag-and-drop method, which we were able to verify by using SQL Server Management Studio. Working with the software is very quick and easy. The user always remains informed about all restore processes. Alongside the source and target, the Kroll Ontrack software also displays the time at which the backup process was started, the number of tables and rows to be edited, the time at which the backup process was completed as well as any warnings and error reports. This data can be printed and saved at any time.

As well as the drag-and-drop function and the taskbar, the tool also features a menu bar that offers another way of opening source and target systems and restoring data. The menu bar also contains various setting options (for example, the activation of warning messages when LDF files are missing or when copying tables with unknown keys) and a help section. As a result of this, PowerControls for SQL is easy to use and does not add any unnecessary extra work for anyone.



PowerControls for SQL displays a summary once the restore process is complete

Summary

PowerControls for SQL from Kroll Ontrack is a highly useful tool for any environment that uses a Microsoft SQL server. This is true whether the user is from a small establishment and wishes to restore data or is an administrator at a large organisation and needs to manage numerous SQL servers and databases. However, users need to already have basic knowledge of data construction so that they are able to find the data that they would like to restore when using the preview. Otherwise, no user should have any problems using the tool as it has been designed so that it is easy to operate. Restoring SQL files is no longer such a chore. No problems occurred when testing the data restore and it was even possible to copy tables from backups into new or external databases. This means that the software is not only suitable for restores but also for the creation of database excerpts and similar tasks. Installing the solution is a quick process. The entire product runs when the database server is in online mode and only data relevant to the individual restore process is copied. The tool therefore saves a lot of time and system resources and users can continue working while the data restore is in progress. Every Microsoft SQL server administrator should have this product in their toolkit. The manufacturer is also planning to include support for compressed backup files and Microsoft SQL servers 2008 and 2014 during the next software release, which is due at the end of April.