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DBATAG, a TAG to every DataBAsE Consultant !!!

## How to backup SQL table ?

Posted by Mahesh Gupta on February 22, 2012

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Backup SQL table, have you ever tried to backup a single SQL table inside a database? Let's see How to backup SQL table | SQL Table Backup Restore

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### DOES SQL Server supports table level backups ?

Backup Types are dependent on [SQL Server Recovery Model](#). Every recovery model lets you back up whole or partial SQL Server database or individual files or filegroups of the database. **Table-level backup cannot be created, there is no such option.** BUT there is a workaround for this

Taking backup of SQL Server table possible in SQL Server. There are various alternative ways to backup a table in sql SQL Server

1. **BCP (BULK COPY PROGRAM)**
2. **Generate Table Script with data**
3. **Make a copy of table using SELECT INTO**
4. **SAVE Table Data Directly in a Flat file**
5. **Export Data using SSIS to any destination**

Let's see how we can use these methods to take **table backup in sql server**

To make it more clear, let's take example, we want to backup SQL table named "Person.Contact", which resides in SQL Server **AdventureWorks sample database**, which has 19972 records and table size is **6888 KB**



**SQLQuery1.sql - l...rks (DBATAG (53))\*** **SQLQuery3.sql - l...rks (DBATAG (60))**

```
select * from Person.Contact
sp_spaceused [Person.Contact]
```

**Results** **Messages**

ContactID	NameStyle	Title	FirstName	MiddleName	LastName	Suffix	EmailAddress
1	1	Mr.	Gustavo	NULL	Achong	NULL	gustav
2	2	0	Catherin	R.	Agee	NULL	catheri
3	3	0	Ms.	Kim	Abercrombie	NULL	kim2@
4	4	0	Sr.	Humberto	Acevedo	NULL	humbe
5	5	0	Sra.	Pilar	Ackerman	NULL	pilar1@
6	6	0	Ms.	Frances	B.	NULL	frances
7	7	0	Ms.	Margaret	J.	NULL	margar
8	8	0	Ms.	Carla	J.	NULL	carla0@

19972 rows

Query... localhost (10.50 SP1) DBATAG (53) AdventureWorks 00:00:00

## Method 1 – Backup sql table using BCP (BULK COPY PROGRAM)

To backup a SQL table named "Person.Contact", which resides in SQL Server **AdventureWorks**, we need to execute following script, which

```
-- SQL Table Backup
-- Developed by DBATAG, www.DBATAG.com
```

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```

DECLARE @table VARCHAR(128),
@file VARCHAR(255),
@cmd VARCHAR(512)
SET @table = 'AdventureWorks.Person.Contact' -- Table Name which you want to backup
SET @file = 'C:\MSSQL\Backup\' + @table + '_' + CONVERT(CHAR(8), GETDATE(), 112) --
+ '.dat'
SET @cmd = 'bcp ' + @table + ' out ' + @file + ' -n -T '
EXEC master..xp_cmdshell @cmd

```

**OUTPUT**

```

SQLQuery4.sql - l...rks (DBATAG (58))| SQLQuery1.sql - l...rks (DBATAG (53))| SQLQuery3.s
L-- Developed by DBATAG, www.DBATAG.com
DECLARE @table VARCHAR(128),
@file VARCHAR(255),
@cmd VARCHAR(512)
SET @table = 'AdventureWorks.Person.Contact' -- Table Name which you want to backup
SET @file = 'C:\MSSQL\Backup\' + @table + '_' + CONVERT(CHAR(8),
+ '.dat'
SET @cmd = 'bcp ' + @table + ' out ' + @file + ' -n -T '
!!!
```

**Results**

```

Starting copy...
1000 rows successfully bulk-copied to host-file. Total received: 1000
1000 rows successfully bulk-copied to host-file. Total received: 2000
1000 rows successfully bulk-copied to host-file. Total received: 3000
1000 rows successfully bulk-copied to host-file. Total received: 4000
1000 rows successfully bulk-copied to host-file. Total received: 5000
1000 rows successfully bulk-copied to host-file. Total received: 6000
1000 rows successfully bulk-copied to host-file. Total received: 7000
1000 rows successfully bulk-copied to host-file. Total received: 8000
1000 rows successfully bulk-copied to host-file. Total received: 9000
1000 rows successfully bulk-copied to host-file. Total received: 10000
1000 rows successfully bulk-copied to host-file. Total received: 11000
1000 rows successfully bulk-copied to host-file. Total received: 12000
1000 rows successfully bulk-copied to host-file. Total received: 13000
1000 rows successfully bulk-copied to host-file. Total received: 14000
1000 rows successfully bulk-copied to host-file. Total received: 15000
1000 rows successfully bulk-copied to host-file. Total received: 16000
1000 rows successfully bulk-copied to host-file. Total received: 17000
1000 rows successfully bulk-copied to host-file. Total received: 18000
1000 rows successfully bulk-copied to host-file. Total received: 19000
NULL
19972 rows copied.
Network packet size (bytes): 4096
Clock Time (ms.) Total : 94 Average : (212468.08 rows per sec.)
NULL
!!!
```

**Note -**

1. You must have bulk import / export privileges
2. In above Script **-n** denotes native SQL data types, which is key during restore
3. **-T** denotes that you are connecting to SQL Server using Windows Authentication, in case you want to connect using SQL Server Authentication use **-U<username> -P<password>**
4. This will also tell, you speed to data transfer, in my case this was 212468.08 rows per sec.
5. Once this commands completes, this will create a file named **"AdventureWorks.Person.Contact\_20120222"** is a specified destination folder

**Alternatively**, you can run the BCP via command prompt and type the following command in command prompt, both operation performs the same activity, but I like the above mentioned method as that's save type in opening a command prompt and type.

```
bcp AdventureWorks.Person.Contact out C:\MSSQL\Backup\AdventureWorks.Person.Contact_2
```

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```
C:\Windows\system32\cmd.exe
C:\MSSQL\Backup>bcp AdventureWorks.Person.Contact out C:\MSSQL\Backup>Contact.Dat -n -T
Starting copy...
1000 rows successfully bulk-copied to host-file. Total received: 1000
1000 rows successfully bulk-copied to host-file. Total received: 2000
1000 rows successfully bulk-copied to host-file. Total received: 3000
1000 rows successfully bulk-copied to host-file. Total received: 4000
1000 rows successfully bulk-copied to host-file. Total received: 5000
1000 rows successfully bulk-copied to host-file. Total received: 6000
1000 rows successfully bulk-copied to host-file. Total received: 7000
1000 rows successfully bulk-copied to host-file. Total received: 8000
1000 rows successfully bulk-copied to host-file. Total received: 9000
1000 rows successfully bulk-copied to host-file. Total received: 10000
1000 rows successfully bulk-copied to host-file. Total received: 11000
1000 rows successfully bulk-copied to host-file. Total received: 12000
1000 rows successfully bulk-copied to host-file. Total received: 13000
1000 rows successfully bulk-copied to host-file. Total received: 14000
1000 rows successfully bulk-copied to host-file. Total received: 15000
1000 rows successfully bulk-copied to host-file. Total received: 16000
1000 rows successfully bulk-copied to host-file. Total received: 17000
1000 rows successfully bulk-copied to host-file. Total received: 18000
1000 rows successfully bulk-copied to host-file. Total received: 19000
19972 rows copied.
Network packet size <bytes>: 4096
Clock time <ms.> Total : 62 Average : (322129.03 rows per sec.)
C:\MSSQL\Backup>
```

Windows

backup which can not restored is of no use, let's perform a quick restore to verify that this table level backup do works....

### Restore SQL table backup using BCP (BULK COPY PROGRAM)

The following script will help you to perform a table level restore, which we backed up in above steps

```
BULK INSERT AdventureWorks.Person.Contacts_Restore
    FROM 'C:\MSSQL\Backup\Contact.Dat'
    WITH (DATAFILETYPE='native');
```

### Screen OUTPUT / Verification

```
-- Restore SQL Table Backup from backup
-- Developed by DBATAG, www.DBATAG.com
-- Do not test this in production as this will delete all data from this table,
-- truncate table AdventureWorks.Person.Contacts_Restore;
print ' Deleted All Records from Existing Table at ' + CONVERT(CHAR(20), GETDATE)
select * from AdventureWorks.Person.Contacts_Restore;
print ' Verified that All Records has been deleted on and no record Exist at '
-- Actual Data Restore Command
BULK INSERT AdventureWorks.Person.Contacts_Restore FROM 'C:\MSSQL\Backup\Contact
print 'Data Restore Finished at ' + CONVERT(CHAR(20), GETDATE(), 121);
print '=====
print 'Performing a Record Count on ' + CONVERT(CHAR(20), GETDATE(), 121);
select COUNT(*) from AdventureWorks.Person.Contacts_Restore;
```

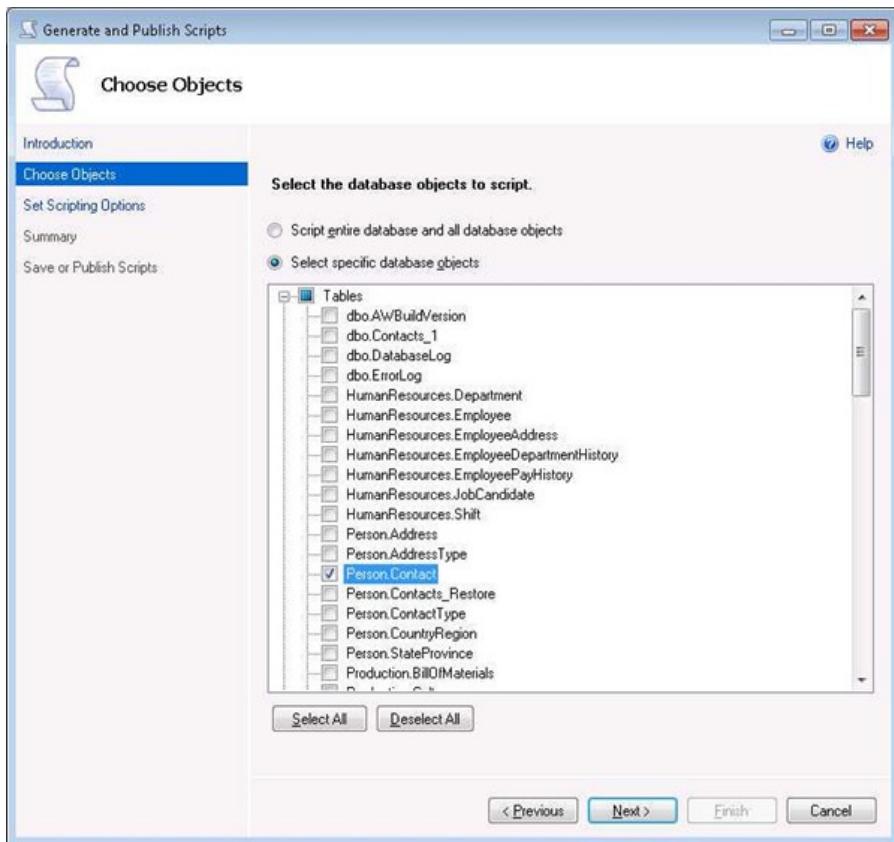
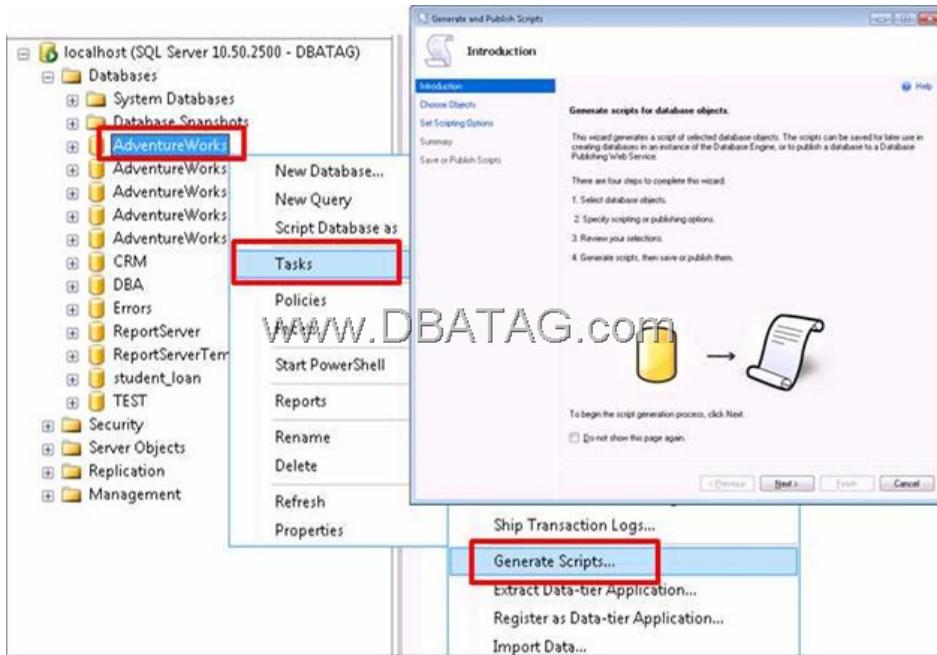
Results
<p>Deleted All Records from Existing Table at 2012-02-22 02:03:09.</p> <p>ContactID NameStyle Title FirstName MiddleName</p> <hr/> <p>(0 row(s) affected)</p> <p>Verified that All Records has been deleted on and no record Exist at 2012-02-22 02:03:09.</p> <p>(19972 row(s) affected)</p> <p>Data Restore Finished at 2012-02-22 02:03:10.</p> <p>=====</p> <p>Performing a Record Count on 2012-02-22 02:03:10.</p> <p>-----</p> <p>19972</p> <p>(1 row(s) affected)</p>

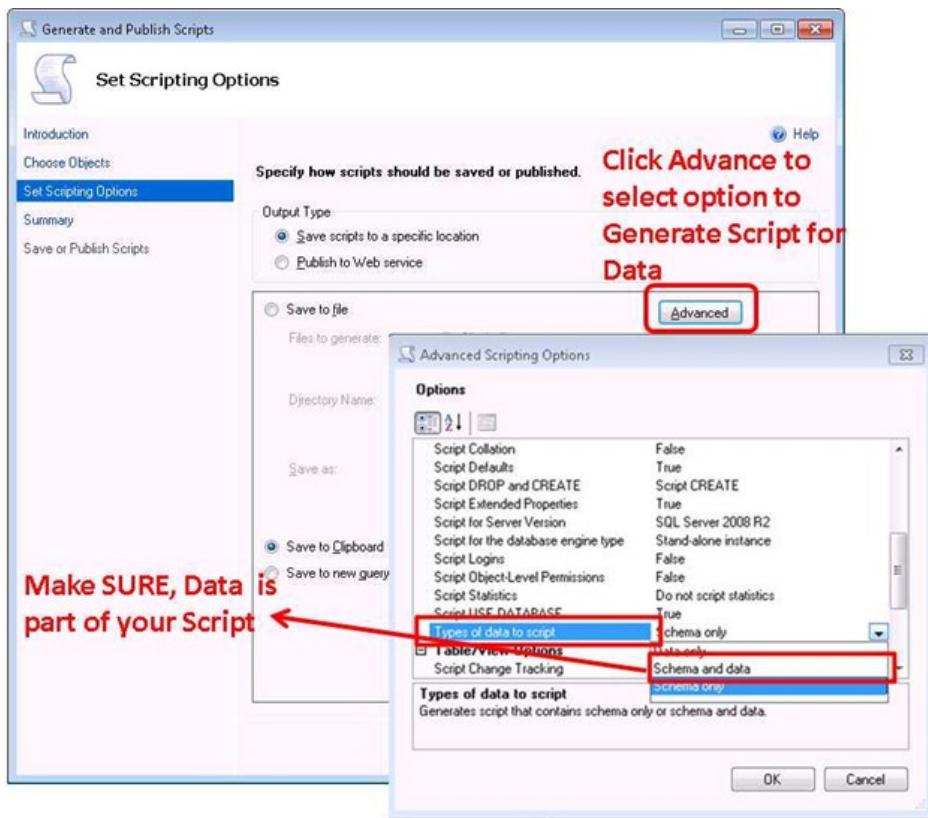
AdChoices  Method 2 –  
Backup sql table  
using Generate  
Table Script

### with data

To backup a SQL table named "Person.Contact", which resides in SQL Server **AdventureWorks**, can generate a Script for table schema as well as data.

Let's quickly see, how we generate a Script for SQL table including SQL Data.





Once you finish that you will Table Creation Script with Data insert statements, which is nothing just equal to dump statement in mysql databases.

In case of restore is required, just execute the Script which we generated.

### Method 3 – Backup sql table using SELECT INTO

**SELECT INTO** statement selects data from one table and inserts selected data into a different table. This is nothing just like making a copy table. This will make a copy of a table inside a database only.

I do personally use this statement, prior to make changes to production database if table is of few MB's. Don't use this for large tables, this might fill up entire space of your database / drive.

The following Script will create a table name Contacts\_Copy\_20120221, and copy all data from table Contact to this newly created table.

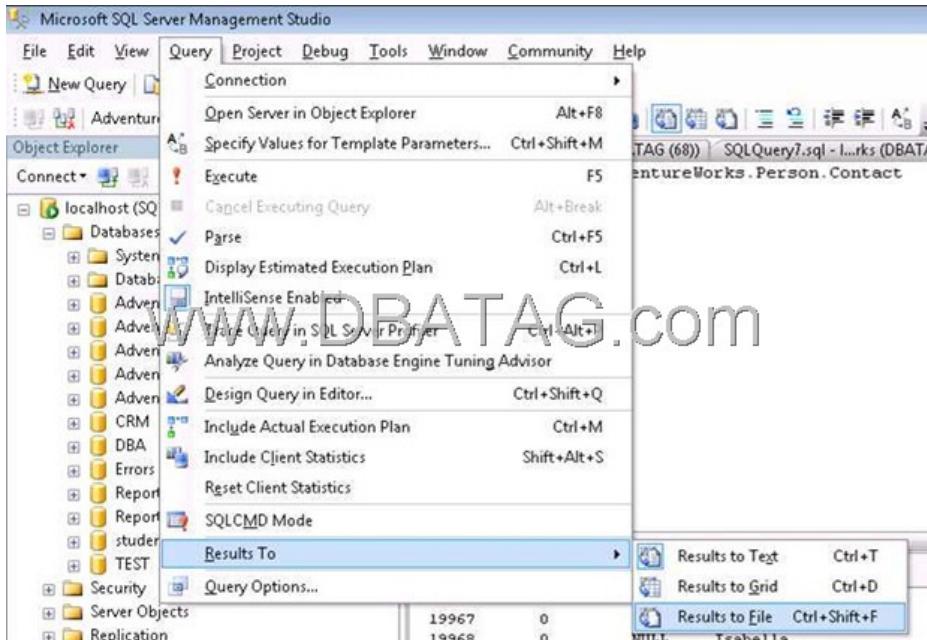
```
select * into AdventureWorks.Person.Contacts_Copy_20120221
from AdventureWorks.Person.Contact
```

### Method 4 – Backup sql table using SAVE Table Data Directly in a Flat file

When you execute any Select statement, SQL Server by default shows you result in result area, but we can change that option and set

when we execute a statement, sent the output to a flat file, instead of showing that on SSMS screen.

This is how we Backup sql table using SAVE Table Data Directly in a Flat file



### ④ Method 5 - Backup sql table using SSIS package by exporting data to any Destination

I have already written a article on [Transferring Data using Integration Services](#), please check [this](#) for more details on this.

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