DBCC CheckDB for Database Consistency

Being day four of the DBCC Command month at SteveStedman.com, today's featured DBCC Command is DBCC CHECKDB. For more info on DBCC see the Database Corruption Challenge.

DBCC CheckDB Description:

DBCC CHECKDB is used to check the physical integrity of the entire database. DBCC CHECKDB is used to detect corruption in the database, and should be run regularly. This is accomplished by running several of the other DBCC commands, then doing some extra verification.

- Runs DBCC CHECKALLOC.
- Runs for every table DBCC CHECKTABLE.
- Runs DBCC CHECKCATALOG.
- Validates the Service Broker data in the database.
- Validates indexed views.

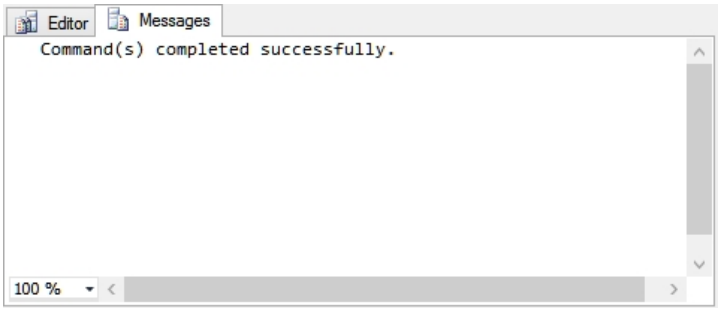
DBCC CHECKDB Syntax:

DBCC CheckDB Example:

The following example shows how to use DBCC CheckDB.

For instance to run this for the Database called DBHealthHistory it would look like this:

When run the above query should produce the following results indicating that everything is fine:



If the NO_INFOMSGS was left off you would get the following:

```
Editor  Messages
DBCC results for 'DBHealthHistory'.
Service Broker Msg 9675, State 1: Message Types analyzed: 14.
Service Broker Msg 9676, State 1: Service Contracts analyzed: 6.
Service Broker Msg 9667, State 1: Services analyzed: 3.
Service Broker Msg 9668, State 1: Service Queues analyzed: 3.
Service Broker Msg 9669, State 1: Conversation Endpoints analyzed: 0.
Service Broker Msg 9674, State 1: Conversation Groups analyzed: 0.
Service Broker Msg 9670, State 1: Remote Service Bindings analyzed: 0.
Service Broker Msg 9605, State 1: Conversation Priorities analyzed: 0.
DBCC results for 'sys.sysrscols'.
There are 945 rows in 13 pages for object "sys.sysrscols".
DBCC results for 'sys.sysrowsets'.
There are 139 rows in 2 pages for object "sys.sysrowsets".
DBCC results for 'sys.sysclones'.
There are 0 rows in 0 pages for object "sys.sysclones".
DBCC results for 'sys.sysallocunits'.
There are 154 rows in 2 pages for object "sys.sysallocunits".
DBCC results for 'sys.sysfiles1'.
There are 2 rows in 1 pages for object "sys.sysfiles1".
DBCC results for 'sys.sysseobjvalues'.
There are 0 rows in 0 pages for object "sys.sysseobjvalues".
DBCC results for 'sys.syspriorities'.
There are 0 rows in 0 pages for object "sys.syspriorities".
DBCC results for 'sys.sysdbfrag'.
There are 0 rows in 0 pages for object "sys.sysdbfrag".
DBCC results for 'sys.sysfgfrag'.
There are 0 rows in 0 pages for object "sys.sysfgfrag".
DBCC results for 'sys.sysdbfiles'.
There are 2 rows in 1 pages for object "sys.sysdbfiles".
DBCC results for 'sys.syspru'.
There are 0 rows in 0 pages for object "sys.syspru".
100 %
```

DBCC CheckDB Example with Corruption:

For the purpose of the demo of have created a database called dbcc_corruption, create a table called departments with 4 rows, and then modified the database to corrupt one of the rows. To start with the table looked like the following:

Editor | Results | Messages

	id	department	par...	archived
1	1	Camping	NULL	0
2	2	Cycle	NULL	0
3	3	Snowsports	NULL	0
4	4	Fitness	NULL	0

Then I messed with DBCC WritePage to overwrite one of the columns with too much data. The causing of corruption is out of the scope of this blog entry. Then the table ends up looking like this:

Editor | Results | Messages

	id	department	par...	archived
1	1	aaaaaaa	NULL	0
2	NULL	NULL	NULL	NULL
3	3	Snowsports	NULL	0
4	4	Fitness	NULL	0

In addition to the output above, the following error messages are thrown to the messages window.

```
Msg 8941, Level 16, State 57, Line 1 Table error: Object ID 245575913,
 index ID 0, partition ID 72057594039042048, alloc unit ID
 72057594043432960 (type In-row data), page (1:231). Test (rowSize
```