



Reclaim space easy in DB2 v9.7 and show off!

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✎ Reclaiming unused storage from MDC tables



EU,2008 pages and storage remain assigned to the MDC table
How can this unused storage be released in the table space?

Reorg MDC tables with reclaim extents only

The RECLAIM EXTENTS ONLY is a new option of the REORG TABLE utility that frees the extents from exclusive use by a particular MDC table, and makes it available for other database objects.

Fasten your seat belts. It's fast!

- ✓ Less processing than a standard table reorg
No copy of the table created, no copy phase, and so on
- ✓ Done *in-place* with no data movement, minimal logging
Find the empty blocks in block map
Mark them as unallocated in the MDC table's block map
Mark them as unallocated in the table space SMPs

```
REORG TABLE <mdc table> RECLAIM EXTENTS ONLY  
[ ALLOW { WRITE | READ | NO } ACCESS ]
```

“650GB of unused storage reclaimed from a DataWarehouse just using this command!”

📌 Checking for MDC tables with potentially reclaimable space

```
SELECT substr(tabname,1,10) as tabname , substr(tabschema,1,10) as  
tabschema, reclaimable_space as reclaimable_space_KB  
FROM SYSIBMADM.ADMINTABINFO  
WHERE tabschema = 'DB2INST1'
```





TABNAME	TABSCHEMA	RECLAIMABLE_SPACE_KB
MDCTAB1	DB2INST1	0
MDCTAB2	DB2INST1	78459
MDCTAB3	DB2INST1	37213

3 record(s) selected.

More DB2 functions to reclaim unused storage

For Automatic Storage table spaces, the REDUCE MAX option can be used to release all unused space and lower the high water mark

```
ALTER TABLESPACE <TBSPACE NAME> REDUCE MAX
```

-  No need to run db2dart
-  No need to recreate tablespaces
-  No need to recreate table objects
-  No need to export/load data

More DB2 functions to reclaim unused storage

For DMS, it requires two steps to release the unused extents:
The High Water can be reduced to match the number of used extents with the LOWER HIGH WATER MARK option

```
ALTER TABLESPACE <TBSPACE NAME> LOWER HIGH WATER MARK
```

Next the ALTER TABLESPACE options REDUCE, RESIZE or DROP can be used to adjust the space assigned

```
ALTER TABLESPACE <TBSPACE NAME> REDUCE (ALL CONTAINERS 200 M)
```

Checking table spaces for reclaimable storage

```
select substr(TBSP_NAME,1,14) as TS_NAME ,
       TBSP_TOTAL_PAGES as Total_pages,
       TBSP_USED_PAGES as Used_pages ,
       TBSP_PAGE_TOP as High_water_MARK ,
       reclaimable_space_enabled
from table ( MON_GET_TABLESPACE ( NULL , -1 ) ) as ts
where TBSP_NAME NOT LIKE ('SYS%') and TBSP_TYPE = 'DMS'
```

TS_NAME	TOTAL_PAGES	USED_PAGES	HIGH_WATER_MARK	RECLAIMABLE SPACE ENABLED
USERSPACE1	8192	3264	3264	0
TP1DMSH	4608	3120	3120	0
TP1DMSAD	12000	6400	6400	0
TP1DMSAI	20000	7040	13984	1
MDCTSP1	8192	5760	5760	1
MDCTSP2	8192	2048	2048	1

6 record(s) selected.

- Query the MON_GET_TABLESPACE monitoring table function
- Look for table spaces with a HWM that is much higher than the number of used pages
- Look for the reclaimable space attribute of '1'

Reclaimable storage: Monitoring the processing

To monitor the asynchronous extent movement, use
MON_GET_EXTENT_MOVEMENT_STATUS table function:

```
SELECT  varchar(tbsp_name,15) as tbsp_name, last_extent, num_extents_moved,  
        num_extents_left, total_move_time from table  
        (mon_get_extent_movement_status('EXTENTREMAP',-1)) AS T
```

TBSP_NAME	LAST_EXTENT	NUM_EXTENTS_MOVED	NUM_EXTENTS_LEFT	TOTAL_MOVE_TIME
EXTENTREMAP	1753956	14240	471593	276005

Reducing the table space size is an online operation:
Application DML and DDL can run concurrently

THANK YOU!



SYLVIA NASAR
Economist and Author of
A BEAUTIFUL MIND

She thinks about:
using mathematical
ideas to navigate
through complex
real-world issues.

We thought about:
creating the most secure wireless
notebook in the industry, so she can
quickly - and safely - exchange ideas
with colleagues.



The new IBM ThinkPad® T40 notebook.
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