Table Controlled Partitioning
The rules of the game

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Bio Kurt Struyf

Kurt Struyf started his career at a major Belgian bank. Where he was part of the system DBA team. He worked for an outsourcing company where he installed, tuned and migrated DB2 systems for multiple customers. He was also directly involved in the design and tuning of DB2 related applications and structures.

Currently Kurt is working as a consultant/contractor for Competence Partners. He has over ten years experience as a (system) DBA and has been installing, migrating, troubleshooting and tuning DB2 systems throughout Europe. Besides his consultancy missions he has been teaching a broad spectrum of DB2 courses through IBM education services, both in Europe and the USA. These courses range from basic courses like DB2 fundamentals, SQL workshops, application programming, database administration workshops, over DB2 application data recovery and application Performance and Tuning, towards more advanced classes like DB2 System Administration, System Performance Analysis, System/ Disaster Recovery Workshop etc.

He was a speaker at several IDUG European and North America conferences. He’s been a speaker at numerous DB2 regional user groups in Europe.
Agenda

• Partitioning Pre-V8
• Partitioning during V8
• Consequences of table controlled partitioning
• Partition Management
  • Add partition
  • Rotate partition
  • Reorg rebalance
• Partitioning during V9
Before Version 8

Partitioning index
Partitioned table
Partitioned tablespace
Non-Partitioning index1 (NPI1)
Non-Partitioning index2 (NPI2)
CREATE TABLESPACE Z9PARTTS IN ZTRUYKDB NUMPARTS 3 ;

CREATE TABLE TRUYK.Z9PARTTB
(COL1 SMALLINT,
COL2 CHAR(2))
IN ZTRUYKDB.Z9PARTTS ;

INCOMPLETE

SYSIBM.SYSTABLES
Column STATUS =‘I’
CREATE INDEX TRUYK.Z9PARTI1
ON TRUYK.Z9PARTTB ( COL1 ASC )
CLUSTER
( PART 1 VALUES ( 100)
  PART 2 VALUES ( 200)
  PART 3 VALUES ( 300))
Problem Before Version 8

Partitioning index

Partitioned table

Partitioned tablespace

Non-Partitioning index1 (NPI1)

Non-Partitioning index2 (NPI2)

Only one PARTITIONED index

Has to be the CLUSTERING index

Build2 phase
Agenda

• Partitioning Pre-V8

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• Consequences of table controlled partitioning

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  • Add partition
  • Rotate partition
  • Reorg rebalance

• Partitioning during V9
INDEX CONTROLLED
CREATE TABLE TRUYK.Z9PARTTB
( EMPNO SMALLINT,
  FNAME CHAR(10),
  LASTNAME CHAR(10),
  ADDRESS CHAR(20),
  CITY CHAR(10),
  STATE CHAR(2))
IN ZTRUYKDB.Z9PARTTS ;
- - - - - - - - - - - - - -
CREATE INDEX TRUYK.Z9PARTI1
ON TRUYK.Z9PARTTB
( EMPNO ASC )
CLUSTER
PARTITION BY RANGE ()
  PARTITION 1 ENDING AT (100),
  PARTITION 2 ENDING AT (200),
  PARTITION 3 ENDING AT (300))

TABLE CONTROLLED
CREATE TABLE TRUYK.Z9PARTTB
( EMPNO SMALLINT,
  FNAME CHAR(10),
  LASTNAME CHAR(10),
  ADDRESS CHAR(20),
  CITY CHAR(10),
  STATE CHAR(2))
PARTITION BY (EMPNO ASC)
  (PARTITION 1 ENDING AT (100),
   PARTITION 2 ENDING AT (200),
   PARTITION 3 ENDING AT (300))
IN ZTRUYKDB.Z9PARTTS ;
Table controlled partitioning means:
NO INDEX needed to control partitioned table

- Any index can become the clustering index.
- Any index can be PARTITIONED.
- An index is qualified as partioning or secondary.
CREATE TABLE TRUYK.Z9PARTTB
(  EMPNO SMALLINT,
  FNAME CHAR(10)
  LASTNAME CHAR(10)
  ADDRESS CHAR(20)
  CITY CHAR(10)
  STATE CHAR(2))
PARTITION BY (EMPNO ASC)
  (PARTITION 1 ENDING AT (100),
  PARTITION 2 ENDING AT (200),
  PARTITION 3 ENDING AT (300))
IN ZTRUYKDB.Z9PARTTS ;

CREATE INDEX TRUYK.Z9PARTI1
  ON TRUYK.Z9PARTTB (EMPNO ASC)
  PARTITIONED ;

CREATE INDEX TRUYK.Z9PARTI2
  ON TRUYK.Z9PARTTB (STATE ASC )
  CLUSTER
• Active immediately
• Reorg recommended
Partitioning or Secondary

NEW definition of partitioning index

PARTITIONING index

= FIRST columns of the index, match the columns of the “PARTITION BY” clause

EVERY other index is a SECONDARY index
CREATE TABLE TRUYK.Z9PARTTB
    ( EMPNO SMALLINT,
      FNAME CHAR(10)
      LASTNAME CHAR(10)
      ADDRESS CHAR(20)
      CITY CHAR(10)
      STATE CHAR(2))
    PARTITION BY (EMPNO ASC)
    (PARTITION 1 ENDING AT (100),
      PARTITION 2 ENDING AT (200),
      PARTITION 3 ENDING AT (300))
    IN ZTRUYKDB.Z9PARTTS;

CREATE INDEX TRUYK.Z9PARTI1
    ON TRUYK.Z9PARTTB (EMPNO ASC)
    PARTITIONED;

CREATE INDEX TRUYK.Z9PARTI2
    ON TRUYK.Z9PARTTB (STATE ASC)
    CLUSTER;

CREATE INDEX TRUYK.Z9PARTI3
    ON TRUYK.Z9PARTTB (EMPNO ASC, LASTNAME DESC);

CREATE INDEX TRUYK.Z9PARTI4
    ON TRUYK.Z9PARTTB (LASTNAME ASC, CITY ASC)
    PARTITIONED;

PARTITIONING

SECONDARY
CREATE TABLE TRUYK.Z9PARTTB
( EMPNO SMALLINT,
  FNAME CHAR(10)
  LASTNAME CHAR(10)
  ADDRESS CHAR(20)
  CITY CHAR(10)
  STATE CHAR(2)
PARTITION BY (EMPNO ASC)
  (PARTITION 1 ENDING AT (100),
  PARTITION 2 ENDING AT (200),
  PARTITION 3 ENDING AT (300))
IN ZTRUYKDB.Z9PARTTS ;

CREATE INDEX TRUYK.Z9PARTI1
ON TRUYK.Z9PARTTB (EMPNO ASC )
PARTITIONED ;

CREATE INDEX TRUYK.Z9PARTI2
ON TRUYK.Z9PARTTB (STATE ASC )
CLUSTER

CREATE INDEX TRUYK.Z9PARTI3
ON TRUYK.Z9PARTTB
(EMPNO ASC ,
  LASTNAME DESC ) ;

CREATE INDEX TRUYK.Z9PARTI4
ON TRUYK.Z9PARTTB
(LASTNAME ASC ,
  CITY ASC )
PARTITIONED
Partitioned or Non-partitioned

Z9PARTI1

Z9PARTTB

005…AL
002…IL
050…NY
001…OH
120…AZ
187…CA
150…NY
111…OH
205…AL
202…AZ
250…NY
201…TX

Z9PARTI2

AL
AZ
CA
CT
IL
MD
NY
OH
TX

Z9PARTI3

001, Presley
002, Sinatra
003, Berry
004, Lewis
121, Cole
122, Martin
299, Cash
300, Holly

Z9PARTI4

Presley, Memphis
Sinatra, Chicago
Berry, St.-Louis
Lewis, Ferriday
Cole, Montgomery
Martin, Steubenville
Cash, Nashville
Holly, Lubbock

EMPNO

STATE

EMPNO, Lastname

Lastname, City

PARTITIONED

PARTITIONED
**Data Partitioned Secondary Index**

**Advantages:**
- No Build2 phase
- No contention during LOAD part
- Performance, if partition is known

**Disadvantages:**
- Cannot be UNIQUE
- Performance, if partition not known
- Increased DS MAX
- Larger EDM POOL
<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>PART</th>
<th>STATUS</th>
<th>PHYERRLO</th>
<th>PHYERRRH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z9PARTTS</td>
<td>TS</td>
<td>0001</td>
<td>RW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-THRU</td>
<td>0003</td>
</tr>
<tr>
<td>Z9PART11</td>
<td>IX</td>
<td>0001</td>
<td>RW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-THRU</td>
<td>0003</td>
</tr>
<tr>
<td>Z9PART12</td>
<td>IX</td>
<td>L*</td>
<td>RW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z9PART13</td>
<td>IX</td>
<td>L*</td>
<td>RW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z9PART14</td>
<td>IX</td>
<td>D0001</td>
<td>RW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-THRU</td>
<td>0003</td>
</tr>
</tbody>
</table>
Agenda

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• Partitioning during V8
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  • Rotate partition
  • Reorg rebalance
• Partitioning during V9
CREATE TABLE TRUYK.Z9PARTTB
  (  EMPNO SMALLINT,
      FNAME CHAR(10)
    , LASTNAME CHAR(10)
    , ADDRESS CHAR(20)
    , CITY CHAR(10)
    , STATE CHAR(2)
  )
PARTITION BY (EMPNO ASC)
  (PARTITION 1 ENDING AT (100),
   PARTITION 2 ENDING AT (200),
   PARTITION 3 ENDING AT (300))
IN ZTRUYKDB.Z9PARTTS ;

- CREATE INDEX PARTITIONED
- ALTER INDEX NOT CLUSTER
  on the partitioning index
- ALTER INDEX CLUSTER
  on the partitioning index
- DROP PARTITIONING INDEX
- ALTER TABLE ADD PARTITION
- ALTER TABLE ROTATE PARTITION
- ALTER TABLE ALTER PARTITION “n”
- CREATE INDEX ENDING AT ...

BE CAREFUL !!
### Consequence of alter

```
ALTER INDEX TRUYK.Z9PARTI1
    NOT CLUSTER;
```

---

**DSN**

SQLCODE = 20272, WARNING: TABLE SPACE Z9PARTTS HAS BEEN CONVERTED TO USE TABLE-CONTROLLED PARTITIONING INSTEAD OF INDEX-CONTROLLED PARTITIONING, ADDITIONAL INFORMATION: 300

---

#### SysIBM.SysTables

<table>
<thead>
<tr>
<th>PARTKEYCOLNUM</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
</table>

#### SysIBM.SysIndexes

| TYPE | 2 | P |

#### SysIBM.SysIndexPart

<table>
<thead>
<tr>
<th>PART 1</th>
<th>LIMITKEY</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART 2</td>
<td>LIMITKEY</td>
<td>200</td>
</tr>
<tr>
<td>PART 3</td>
<td>LIMITKEY</td>
<td>300</td>
</tr>
<tr>
<td>PART 1</td>
<td>LIMITKEY</td>
<td></td>
</tr>
<tr>
<td>PART 2</td>
<td>LIMITKEY</td>
<td></td>
</tr>
<tr>
<td>PART 3</td>
<td>LIMITKEY</td>
<td></td>
</tr>
</tbody>
</table>

#### SysIBM.SysTablePart

<table>
<thead>
<tr>
<th>PART 1</th>
<th>LIMITKEY</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART 2</td>
<td>LIMITKEY</td>
<td>200</td>
</tr>
<tr>
<td>PART 3</td>
<td>LIMITKEY</td>
<td>X'FF'</td>
</tr>
</tbody>
</table>
Consequence of alter

<table>
<thead>
<tr>
<th>PART 1</th>
<th>LIMITKEY</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART 2</td>
<td>LIMITKEY</td>
<td>200</td>
</tr>
<tr>
<td>PART 3</td>
<td>LIMITKEY</td>
<td>X’FF’</td>
</tr>
</tbody>
</table>

```
INSERT INTO Z9PARTTB VALUES (305,'Richie','Vallens', 'some street', 'LosAngeles', 'CA')
```

Index controlled partitioning

Table controlled partitioning

HIGH LIMIT KEY IS ENFORCED
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- Partitioning during V9
Add Partition

- **Before V8**
  - Unload all partitions
  - Drop tablespace
  - Create tablespace with more parts
  - Load partitions
  - Full Image Copy

- **In V8**
  - Alter table

Table Controlled partitioning needed
Add Partition

ALTER TABLE ADDPART_TEST
ADD PARTITION ENDING AT (500) INCLUSIVE

NO partition number

CAN NOT specify size
Index controlled partitioning and add partition (1/3)

Alter add partition ending at 500

DSNT408I SQLCODE = -636, ERROR: THE PARTITIONING KEYS FOR PARTITION 4 ARE NOT SPECIFIED IN ASCENDING OR DESCENDING ORDER

Why?
Index controlled partitioning and add partition (2/3)

DSNT404I SQLCODE = 610, WARNING: A CREATE/ALTER ON OBJECT TRUYK.Z9PARTTB HAS PLACED OBJECT IN REORG PENDING

PART 1 LIMITKEY 100
PART 2 LIMITKEY 200
PART 3 LIMITKEY X'FF'

T3
T4
T5
T6

ALTER TABLE Z9PARTTB
ALTER PARTITION 3 ENDING AT (300)

Alter add partition ending at 500

Reorg tablespace Z9PARTS
Index controlled partitioning and add partition (3/3)

BUT !!

DSNT404I SQLCODE = 610, WARNING: A CREATE/ALTER ON OBJECT TRUYK.Z9PARTTB HAS PLACED OBJECT IN REORG PENDING

Child tables in CHKP

1 row discarded

ALTER TABLE Z9PARTTB
ALTER PARTITION 3 ENDING AT ( 300)

Reorg tablespace Z9PARTS
Agenda

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• Partitioning during V9
CREATE TABLESPACE Z9ROTATS IN ZTRUYKDB
NUMPARTS 3 ;

CREATE TABLE Z9ROTATB
  ( YEAR SMALLINT,
    SALES CHAR(10),
    REGION CHAR(10))
PARTITION BY (YEAR ASC)
(PARTITION 1 ENDING AT (2004),
PARTITION 2 ENDING AT (2005),
PARTITION 3 ENDING AT (2006))
IN ZTRUYKDB.Z9ROTATS
DSNT360I  -TD1A  ********************************************
DSNT361I  -TD1A  *  DISPLAY DATABASE SUMMARY
            *  GLOBAL
DSNT360I  -TD1A  ********************************************
DSNT362I  -TD1A  DATABASE = ZTRUYKDB  STATUS = RW
            DBD LENGTH = 48446
DSNT397I  -TD1A
NAME   TYPE   PART   STATUS     PHYERRLO  PHYERRHI
------- ----- ----- ----------- ------------------ -----------
Z9ROTATS TS  0001   RW
            -THRU  0003
********  DISPLAY OF DATABASE ZTRUYKDB ENDED  ********
ALTER TABLE ROT_PART_TEST
ROTATE PARTITION FIRST TO LAST ENDING AT (2007) INCLUSIVE RESET

ALTER TABLE ROT_PART_TEST
ROTATE PARTITION FIRST TO LAST ENDING AT (2008) INCLUSIVE RESET
**Rotate Partition**

```
DSNT360I  -TD1A                       
DSNT361I  -TD1A                       
           * DISPLAY DATABASE SUMMARY  
           *   GLOBAL                   
DSNT360I  -TD1A                       
DSNT362I  -TD1A                       
           DATABASE = ZTRUYKDB STATUS = RW  
           DBD LENGTH = 48446              
DSNT397I  -TD1A                       
NAME      TYPE PART STATUS           PHYERRLO PHYERRHI 
---       ---- ---- ----           ------- -------      
Z9ROTATS  TS    0003 RW             
Z9ROTATS  TS    0001 RW             
           -THRU  0002               
***** DISPLAY OF DATABASE ZTRUYKDB ENDED *****
```
### Rotate Partition

```sql
SELECT DSNUM, LOGICAL_PART, ICTYPE, STYPE
FROM SYSIBM.SYSCOPY
WHERE DBNAME = 'ZTRUYKDB'
AND TSNAME = 'Z9ROTATS';
```

<table>
<thead>
<tr>
<th>DSNUM</th>
<th>LOGICAL_PART</th>
<th>ICTYPE</th>
<th>STYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Q</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Q</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Q</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>F</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>F</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>F</td>
<td>1</td>
</tr>
</tbody>
</table>

---

![Diagram showing DSNUM, LOGICAL_PART, ICTYPE, STYPE](image)

<table>
<thead>
<tr>
<th>DSNUM</th>
<th>LOGICAL_PART</th>
<th>ICTYPE</th>
<th>STYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>A</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>A</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>
DB2 issues *individual deletes*
- logging
- performance

DB2 holds DBD-lock

DB2 invalidate plans, packages, statement cache

**GOOD IDEA:**
LOAD PART REPLACE
Houston We Have A Problem

NO Point-in-time RECOVERY Possible
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- Partitioning during V9
ALTER TABLE Z9ROTATB ADD PARTITION ENDING AT (2009 ) ;

ALTER TABLE Z9ROTATB ROTATE PARTITION FIRST TO LAST ENDING AT (2010 ) INCLUSIVE RESET ;

DSNT360I -TD1A ****************************
DSNT361I -TD1A  *  DISPLAY DATABASE SUMMARY
     *  GLOBAL
DSNT360I -TD1A ****************************
DSNT362I -TD1A  DATABASE = ZTRUYKDB STATUS = RW
            DBD LENGTH = 48446
DSNT397I -TD1A
NAME   TYPE   PART   STATUS      PHYERRLO  PHYERRHI
------- ----- ----- ------------- ---------- ----------
Z9ROTATS TS  0001  RW
            -THRU  0002
Z9ROTATS TS  0004  RW
Z9ROTATS TS  0003  RW

******** DISPLAY OF DATABASE ZTRUYKDB ENDED ********
Reorg Rebalance

REORG TABLESPACE ZTRUYKDB.Z9ROTATS PART(2:3) SHRLEVEL REFERENCE;

Expected result reorg part 2, 4, 3

<table>
<thead>
<tr>
<th>DSNUM</th>
<th>LOGICAL_PART</th>
<th>ICTYPE</th>
<th>STYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>W</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>W</td>
<td></td>
</tr>
</tbody>
</table>

ACTUAL result: reorg of DSNUM 2 and 3
Add and Rotate Partition Combined

When combined with “add partition” ➔
keep track of physical dataset

ALTER TABLESPACE… PART N
-or-
REORG TABLESPACE… PART N
• Reorg rebalance allows an automatic “more even” distribution of data over the partitions
• New limit keys are determined at reorg time
• Shrlevel reference is possible
**SELECT** CARD, DSNUM, LIMITKEY, LOGICAL_PART
FROM SYSIBM.SYSTABLEPART
WHERE DBNAME = 'ZTRUYKDB'
AND TSNAME = 'Z9PARTTS';

<table>
<thead>
<tr>
<th>CARD</th>
<th>DSNUM</th>
<th>LIMITKEY</th>
<th>LOGICAL_PART</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td>350</td>
<td>1</td>
<td>300</td>
<td>3</td>
</tr>
</tbody>
</table>
**Reorg Rebalance**

```sql
SELECT CARD, DSNUM, LIMITKEY, LOGICAL_PART
FROM SYSIBM.SYSTABLEPART
WHERE DBNAME = 'ZTRUYKDB'
AND TSNAME = 'Z9PARTTS';
```

<table>
<thead>
<tr>
<th>CARD</th>
<th>DSNUM</th>
<th>LIMITKEY</th>
<th>LOGICAL_PART</th>
</tr>
</thead>
<tbody>
<tr>
<td>152</td>
<td>1</td>
<td>210</td>
<td>1</td>
</tr>
<tr>
<td>130</td>
<td>1</td>
<td>216</td>
<td>2</td>
</tr>
<tr>
<td>118</td>
<td>1</td>
<td>300</td>
<td>3</td>
</tr>
</tbody>
</table>

**Command:**

```
REORG TABLESPACE ZTRUYKDB.Z9PARTTS PART(N:M) REBALANCE SHRLEVEL REFERENCE
```
ALTER TABLE Z9ROTATB
ADD PARTITION ENDING AT (2009 ) ;

+  
ALTER TABLE Z9ROTATB
ROTATE PARTITION FIRST TO LAST ENDING AT (2010 ) INCLUSIVE RESET ;

DSNT360I -TD1A ****************************************
DSNT361I -TD1A * DISPLAY DATABASE SUMMARY
           *  GLOBAL
DSNT360I -TD1A ****************************************
DSNT362I -TD1A DATABASE = ZTRUYKDB STATUS = RW
           DBD LENGTH = 48446

DSNT397I -TD1A
NAME   TYPE PART STATUS          PHYERRLO PHYERRHI
------- ----- ----- -------------- --------------
Z9ROTATS TS  0001 RW
             -THRU 0002
Z9ROTATS TS  0004 RW
Z9ROTATS TS  0003 RW

**** DISPLAY OF DATABASE ZTRUYKDB ENDED *******
REORG TABLESPACE ZTRUYKDB.Z9ROTATS PART(2:3) REBALANCE SHRLEVEL REFERENCE;

DSNUGUTC - REORG TABLESPACE ZTRUYKDB.Z9ROTATS PART(2:3) REBALANCE SHRLEVEL REFERENCE

DSNURFIT - PARTITION RANGE NOT CONTIGUOUS - REBALANCE IGNORED

DSNUGBAC - UTILITY EXECUTION TERMINATED, HIGHEST RETURN CODE=8
• Be careful: repartition based on amount of keys.

• Varchar rows can still cause uneven VSAM size

• Uneven distribution of keys can still cause uneven VSAM size (e.g. many duplicate keys)
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Partitioning during V9

Introduction of Universal Table spaces

**Advantages:**
- partition by growth
- better space management
- improved mass delete performance
- immediate of segments after drop table

**Restrictions:**
- Cannot be used as workfile
- More space map pages

```
CREATE TABLESPACE TEST01TS IN TEST01DB USING STOGROUP SG1
  DSSIZE 2G
  MAXPARTITIONS 24
  LOCKSIZE ANY
  SEGSIZE 4;
COMMIT;
```
Questions?

Kurt.Struyf@cp.be

www.cp.be