

Online Schema Changes i praktiken

Meny

- Vi gör ett antal alter av två kolumner en char och en numerisk i en tabell skapad från IBM:s sampledatabas. Index och vyer kommer att påverkas av ändringen.
- Vi tittar i katalogen för att se hur antalet versioner ändras. Displayar berörda space för att se statusen. Provar att läsa och uppdatera de berörda kolumnerna i tabellen och i vyn.
- Sist en reorg och copy, vi tittar i katalogen igen.



RUBROWC R11 ----- RC/Browse: Column Mode ----- 05/01/13 20:02:43
COMMAND ==> _ SCROLL ==> PAGE

For Table ==> QT.ACT Row number==> 1 OF 18
Browse Mode ==> C Max Char ==> 070

SSID: D2Y2 -----FETCH STATUS: COMPLETE----- V018901

ACTNO	ACTKWD	ACTDESC
A1	SMALLINT	A2.CHAR(6) A3.VARCHAR(20)
10	MANAGE	MANAGE/ADVISE
20	ECOST	ESTIMATE COST
30	DEFINE	DEFINE SPECS
40	LEADPR	LEAD PROGRAM/DESIGN
50	SPECS	WRITE SPECS
60	LOGIC	DESCRIBE LOGIC
70	CODE	CODE PROGRAMS
80	TEST	TEST PROGRAMS
90	ADMQS	ADM QUERY SYSTEM
100	TEACH	TEACH CLASSES
110	COURSE	DEVELOP COURSES
120	STAFF	PERS AND STAFFING
130	OPERAT	OPER COMPUTER SYS
140	MAINT	MAINT SOFTWARE SYS
150	ADMSYS	ADM OPERATING SYS
160	ADMDB	ADM DATA BASES
170	ADMDC	ADM DATA COMM
180	DOC	DOCUMENT

***** BOTTOM OF DATA *****

F1=HELP F2=start F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

Listar systemkatalogerna före ändringarna

SYSIBM.SYSTABLESPACE :

NAME	OLDEST_VERSION	CURRENT_VERSION
DSN8S71P	0	0

SYSIBM.SYSTABLES:

NAME	VERSION
ACT	0

SYSIBM.SYSINDEXES:

NAME	OLDEST_VERSION	CURRENT_VERSION	VERSION
XACT1	0	0	0
XACT2	0	0	0

SYSIBM.SYSINDEXPART:

IXNAME	OLDEST_VERSION
XACT1	0
XACT1	0

SYSIBM.SYSCOPY:

DBNAME	TSNAME	OLDEST_VERSION
DSN71QT	DSN8S71P	0

Ändringar av kolumn ACTKWD, CHAR(6) med commit

```
ALTER TABLE QT.ACT ALTER ACTKWD SET DATA TYPE CHAR(10);  
DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION  
COMMIT;  
DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION
```

```
ALTER TABLE QT.ACT ALTER ACTKWD SET DATA TYPE VARCHAR(10);  
DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION  
COMMIT;  
DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION
```

```
ALTER TABLE QT.ACT ALTER ACTKWD SET DATA TYPE CHAR(18);  
DSNT400I SQLCODE = 000, SUCCESSFUL EXECUTION
```

DISPLAY DATABASE SUMMARY

```
DSN8S71P TS      RW,AREO*  
XACT2  IX      RW,AREO*
```

```
UNIQUE INDEX QT.XACT2  
ON QT.ACT  
(ACTKWD      ASC )
```

Listar systemkatalogerna efter ändringa av kolumnen ACTKWD (CHAR)

SYSIBM.SYSTABLESPACE :

NAME	OLDEST_VERSION	CURRENT_VERSION
DSN8S71P	0	3

SYSIBM.SYSTABLES:

NAME	VERSION
ACT	3

SYSIBM.SYSINDEXES:

NAME	OLDEST_VERSION	CURRENT_VERSION	VERSION
XACT1	0	0	0
XACT2	0	3	3

SYSIBM.SYSINDEXPART:

IXNAME	OLDEST_VERSION
XACT1	0
XACT1	0

SYSIBM.SYSCOPY:

DBNAME	TSNAME	OLDEST_VERSION
DSN71QT	DSN8S71P	0

Ändringar av kolumn ACTNO, SMALLINT utan commit

```
ALTER TABLE QT.ACT ALTER ACTNO SET DATA TYPE DECIMAL(8,0);
```

```
DSNT404I SQLCODE = 610, WARNING: A CREATE/ALTER ON OBJECT QT.ACT HAS PLACED  
OBJECT IN REBUILD PENDING
```

```
ALTER TABLE QT.ACT ALTER ACTNO SET DATA TYPE INTEGER;
```

```
DSNT404I SQLCODE = 610, WARNING: A CREATE/ALTER ON OBJECT QT.ACT HAS  
PLACED OBJECT IN REBUILD PENDING
```

```
ALTER TABLE QT.ACT ALTER ACTNO SET DATA TYPE DECIMAL(10,0);
```

```
DSNT404I SQLCODE = 610, WARNING: A CREATE/ALTER ON OBJECT QT.ACT HAS  
PLACED OBJECT IN REBUILD PENDING
```

DISPLAY DATABASE SUMMARY

```
DSN8S71P TS      RW,AREO*  
XACT1  IX      RW,RBDP
```

```
UNIQUE INDEX QT.XACT1  
ON QT.ACT  
(ACTNO      ASC )
```

Listar systemkatalogerna efter ändringa av kolumnen ACTNO (smallint)

SYSIBM.SYSTABLESPACE :

NAME	OLDEST_VERSION	CURRENT_VERSION
DSN8S71P	0	4

SYSIBM.SYSTABLES:

NAME	VERSION
ACT	4

SYSIBM.SYSINDEXES:

NAME	OLDEST_VERSION	CURRENT_VERSION	VERSION
XACT1	0	0	0
XACT2	0	3	3

SYSIBM.SYSINDEXPART:

IXNAME	OLDEST_VERSION
XACT1	0
XACT1	0

SYSIBM.SYSCOPY:

DBNAME	TSNAME	OLDEST_VERSION
DSN71QT	DSN8S71P	0



RUBROWC R11 ----- RC/Browse: Column Mode ----- 05/01/14 12:18:40
COMMAND ==> SCROLL ==> PAGE

For Table ==> QT.ACT Row number==> 1 OF 18
Browse Mode ==> C Max Char ==> 070

SSID: D2Y2 -----FETCH STATUS: COMPLETE----- V018901

ACTNO	ACTKWD	ACTDESC
A1.DECIMAL(10,0)	A2.CHAR(18)	A3.VARCHAR(20)
10	MANAGE	MANAGE/ADVISE
20	ECOST	ESTIMATE COST
30	DEFINE	DEFINE SPECS
40	LEADPR	LEAD PROGRAM/DESIGN
50	SPECS	WRITE SPECS
60	LOGIC	DESCRIBE LOGIC
70	CODE	CODE PROGRAMS
80	TEST	TEST PROGRAMS
90	ADMQS	ADM QUERY SYSTEM
100	TEACH	TEACH CLASSES
110	COURSE	DEVELOP COURSES
120	STAFF	PERS AND STAFFING
130	OPERAT	OPER COMPUTER SYS
140	MAINT	MAINT SOFTWARE SYS
150	ADMSYS	ADM OPERATING SYS
160	ADMDB	ADM DATA BASES
170	ADMDC	ADM DATA COMM
180	DOC	DOCUMENT

***** BOTTOM OF DATA *****

F1=HELP F2=start F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE



RUBROWC R11 ----- RC/Browse: Column Mode ----- 05/01/14 12:56:50
COMMAND ==> SCROLL ==> PAGE

For Table ==> QT.VACT Row number==> 1 OF 18
Browse Mode ==> C Max Char ==> 070

SSID: D2Y2 -----FETCH STATUS: COMPLETE----- V018901

ACTNO	ACTKWD	ACTDESC
A1.DECIMAL(10,0)	A2.CHAR(18)	A3.VARCHAR(20)
10	MANAGE	MANAGE/ADVISE
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***** BOTTOM OF DATA *****

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Listar systemkatalogerna efter reorg och copy av tablespacet

SYSIBM.SYSTABLESPACE :

NAME	OLDEST_VERSION	CURRENT_VERSION
DSN8S71P	0	5

SYSIBM.SYSTABLES:

NAME	VERSION
ACT	5

SYSIBM.SYSINDEXES:

NAME	OLDEST_VERSION	CURRENT_VERSION	VERSION
XACT1	0	0	0
XACT2	3	3	3

SYSIBM.SYSINDEXPART:

IXNAME	OLDEST_VERSION
XACT1	0
XACT1	3

SYSIBM.SYSCOPY:

DBNAME	TSNAME	OLDEST_VERSION
DSN71QT	DSN8S71P	5
DSN71QT	DSN8S71P	0

LET'S MAKE SURE

Summaring

- **Vid många tabelländringar klarar man sig nu utan att ladda ur, droppa, återskapa objekt och behörigheter, ladda och rebinda. Det är bra!**
- **Direkt efter ändringar som skapar nya versioner bör man köra reorg och copy.
Detta för att få bra prestanda och vara säker på en fungerande recover.**

End



LET'S MAKE SURE