

CA Database Management for Db2 for z/OS 20.0 (Db2 Tools) Customer Community Update

TEAM PRODUCT OWNERS JANUARY 11, 2021

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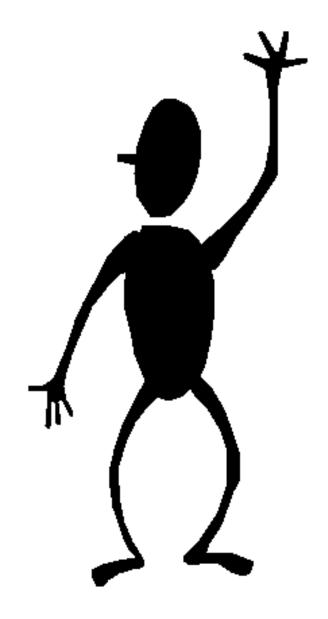
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Agenda

- Db2 Tools Suite:
 - DB2L Command via Batch
- RC/Migrator, RC/Compare, and RC/Update:
 - Supporting INSERT ALGORITHM (Db2 12)



Please Provide Feedback...



Db2 Tools Suite: DB2L Command in Batch to display Db2 Continuous Delivery Levels

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DB2L command in online

- Primary command to display continuous delivery runtime values.
- It also displays values from SETUPxx member which needs to be in sync with runtime values.

```
20.0.00 CA Database Management Solutions for DB2 for z/OS 2021/01/05 08:40 OPTION ===> Db2L

DB2 SSID ==> AD02 LOCATION ==> LOCAL ACMID ==> MANJA16 SQLID ==> MANJA16

DB2 VERSION: V12R1M503*
```

DB2L output panel:

```
DB2 SSID ==> AD02

Catalog Level : V12R1M505 SSIDVERC : V12R1M505 Function Level : V12R1M503* SSIDVERF : V12R1M503* Previous Highest : V12R1M506

PF1 = Help PF3 = Exit
```

DB2L command through batch processor interface

- The DB2L command can now be executed in batch using the .CALL Batch Processor command.
- Syntax : .CALL DB2L
- Two ways to execute the DB2L command in batch
 - To display continuous delivery values of the currently connected Db2 subsystem through .CONNECT ssid
 - To display continuous delivery values of multiple Db2 subsystems between .DATA and .ENDDATA block



Method 1: Display values of the currently connected subsystem

```
//BPIOPT DD *,SYMBOLS=(JCLONLY,SUBSTLOG)
.LIST SYSOUT(A)
.CONNECT AD01
.CALL DB2L
/*
//*
```

DB2L output:

Method 2: Display Values for multiple subsystems

```
DD *,SYMBOLS=(JCLONLY,SUBSTLOG)
LIST SYSOUT(A)
CALL
     DB2L
. DATA
AD01
AD02
ENDDATA
```

DB2L output:

```
DB2 CONTINUOUS DELIVERY
        DB2 SSID ==> AD01
                                                         SETUP00
   CATALOG LEVEL : V12R1M500
                                             SSIDVERC : V12R1M500
                      V12R1M500
   FUNCTION LEVEL
                                             SSIDVERF :
   PREVIOUS HIGHEST : V12R1M500
                       DB2 CONTINUOUS DELIVERY LEVELS ----
        DB2 SSID ==> AD02
                      DB2
                                                         SETUP00
   CATALOG LEVEL
                 : V12R1M505
                                                        V12R1M505
                                                        V12R1M503*
                      V12R1M503*
   FUNCTION LEVEL
                                             SSIDVERF :
   PREVIOUS HIGHEST : V12R1M506
RETCODE =
```

References

PTF details:

DB2L Online: so10173

DB2L Batch : so15980

Documentation:

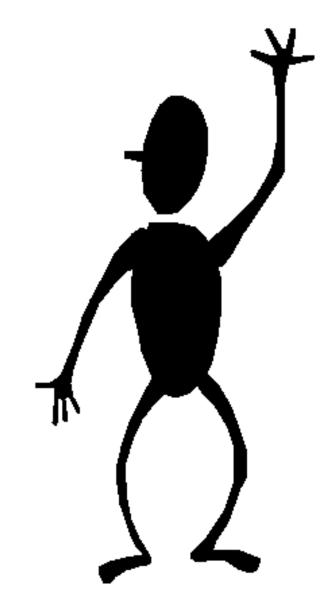
<u>https://techdocs.broadcom.com/us/en/ca-mainframe-software/database-management/ca-database-management-solutions-for-db2-for-z-os/20/using/use-the-batch-processor/batch-processor-commands/call-command-call-the-execution-program.html</u>

Community article:

https://community.broadcom.com/mainframesoftware/communities/community-home/digestviewer/viewthread?MessageKey=d0c65cc9-b25e-4597-8d58-3ed693aabf6a&CommunityKey=45ba021d-aa18-4825-ace0-21b4c0d451ee



Please Provide Feedback...



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RC/Migrator, RC/Compare, and RC/Update: Supporting INSERT ALGORITHM (Db2 12)

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Problem statement: INSERT ALGORITHM

- INSERT ALGORITHM is not currently supported
- Generated DDL through RC/Migrator, RC/Update or RC/Compare does not have this

Problem:

 Difficulty as we are losing the current value of INSERT ALGORITHM for tablespace



Solution: Supporting INSERT ALGORITHM

Highlights:

- INSERT ALGORITHM clause is tolerated

Enhanced areas of product(s):

- 1. Syntax Checker
- 2. RC/Migrator (Migrate Strategy)
- 4. RC/Update or Alter strategy
- 5. RC/Compare (or compare strategy)
- 6. ICL



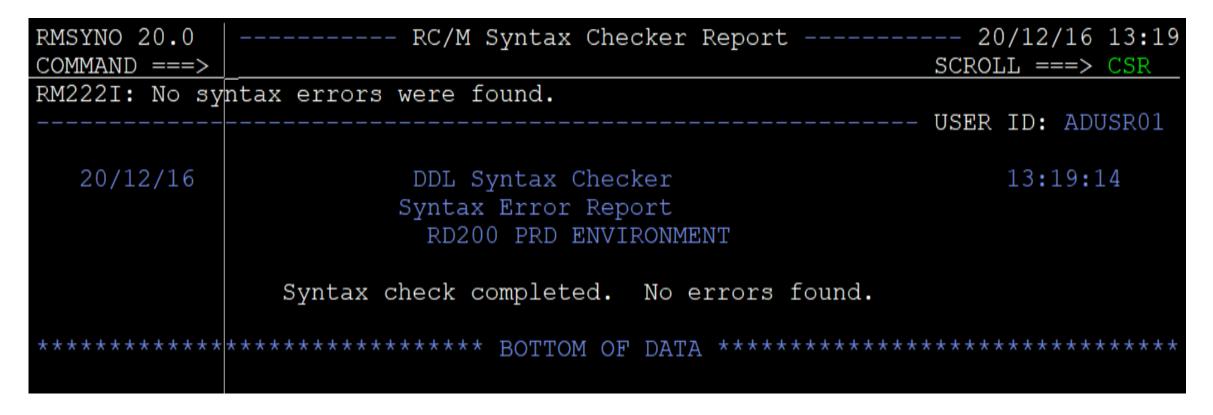
- CREATE TABLESPACE... INSERT ALGORITHM clause is tolerated
- INSERT ALGORITHM can have 0, 1 or 2
- Error for any invalid values (Ex: INSERT ALGORITHM 5)



- Added support to CREATE TABLESPACE ... INSERT ALGORITHM Sample INPUT:

```
000002
                                 MYTS001
            CREATE
                     TABLESPACE
000003
000004
                           STOGROUP SRISG12
000005
                         PRIOTY -1
000006
000007
000008
                     BUFFERPOOL BPO
000009
                     CLOSE
000010
                              SYSTEM
000011
                     SEGSIZE
                                            Value can be 0, 1 or 2
                     INSERT ALGORITHM
000012
000013
                     FREEPAGE
000014
                                FOR UPDATE
000015
                               CHANGED
000016
                            YES
                     DEFINE
000017
                     LOGGED
000018
                     TRACKMOD
                               YES
000019
                     COMPRESS
                               NO
000020
                     LOCKSIZE
000021
                     MAXROWS 255
                            EBCDIC;
```

- Added support to CREATE TABLESPACE ... INSERT ALGORITHM Sample OUTPUT:



- Added support to CREATE TABLESPACE ... INSERT ALGORITHM Sample INPUT (Error):

```
000002
                    TABLESPACE MYTS001
            CREATE
000003
                    IN SRIDB12
000004
                    USING STOGROUP SRISG12
000005
                        PRIOTY -1
                        SECOTY -1
000006
000007
                        ERASE NO
000008
                    BUFFERPOOL BP0
000009
000010
                    LOCKMAX SYSTEM
000011
                    SEGSIZE 4
000012
                    INSERT ALGORITHM
000013
                    FREEPAGE 0
000014
                               FOR UPDATE
000015
                              CHANGED
000016
                           YES
                    DEFINE
000017
                    LOGGED
000018
                    TRACKMOD
                              YES
000019
                    COMPRESS
                              NO
000020
                    LOCKSIZE
000021
                    MAXROWS 255
000022
                    CCSID EBCDIC;
000023
```

- Added support to CREATE TABLESPACE ... INSERT ALGORITHM Sample Error OUTPUT:

RMSYNO 20.0	RC/M Syntax Checker Report	20/12/16 13:20			
COMMAND ===>		SCROLL ===> CSR			
RM221I: Synta	x errors were found in your dataset.				
		USER ID: ADUSR01			
20/12/16	DDL Syntax Checker	13:20:21			
	Syntax Error Report				
	RD200 PRD ENVIRONMENT				
Syntax Error in statement beginning on line number 2					
of the inp	ut DDL file.				
CBEATE TAR	LESPACE MYTS001 IN SRIDB12 USING STOGROUP SRISG1	2 PRI∩TV _1			
SECQTY -1 ERASE NO BUFFERPOOL BPO CLOSE YES LOCKMAX SYSTEM SEGSIZE 4					
INSERT ALGORITHM 5 FREEPAGE 0 PCTFREE 5 FOR UPDATE 0 GBPCACHE CHANGED					
DEFINE YES LOGGED TRACKMOD YES COMPRESS NO LOCKSIZE ANY MAXROWS 255					
CCSID EBCDIC					

DDL00002:	Invalid token 5. Valid tokens are:				
* * * * * * * * * *	0 1 2 **********************	* * * * * * * * * * * * * *			
	***************** BOTTOM OF DATA *********				
	BOTTOM OF DATA				

Migrate Strategy or RC/Migrate

While migrating a TS:

- From Db2 12 to Db2 12 subsystems
 Source TS's INSERT ALGORITHM clause will be generated
- From Db2 11 to Db2 12 subsystems
 INSERT ALGORITHM clause will NOT be generated from Source TS by default (as value 0 is applied by default)
 However, generating DDL in OFS path can generate this clause
- From Db2 12 to Db2 11 subsystems
 INSERT ALGORITHM clause will NOT be generated from Source TS (as its invalid)



Alter Strategy or RC/Update

While altering a TS:

- In Db2 12 subsystems
- > TS's INSERT ALGORITHM value will be preserved and generated if CREATE TABLESPACE is generated because of alter
- In Db2 11 subsystems
- ➤ No change as INSERT ALGORITHM clause is invalid.



Compare Strategy or RC/Compare

While comparing 2 TS's:

Sno	Source SSID	Target SSID	Behavior
1	Db2 12	Db2 12	Target TS's INSERT ALGORITHM is preserved and will be generated if CREATE TABLESPACE gets generated because of compare
2	Db2 11	Db2 12	Target TS's INSERT ALGORITHM is preserved and will be generated if CREATE TABLESPACE gets generated because of compare
3	Db2 12	Db2 11	INSERT ALGORITHM will NOT be generated as invalid
4	Db2 11	Db2 11	INSERT ALGORITHM will NOT be generated as invalid (Current behavior)



ICL

While generating ICL:

- In Db2 12 subsystems
- > CREATE TABLESPACE with INSERT ALGORITHM is supported
- ➤ Converting ALTER TABLESPACE ICL to DDL:
- If CREATE TABLESPACE needs to be generated, then TS's INSERT ALGORITHM value will be preserved and generated if CREATE TABLESPACE is generated because of alter
- No change if ALTER TABLESPACE is going to be generated
- In Db2 11 subsystems
- ➤ No change as INSERT ALGORITHM clause is invalid.

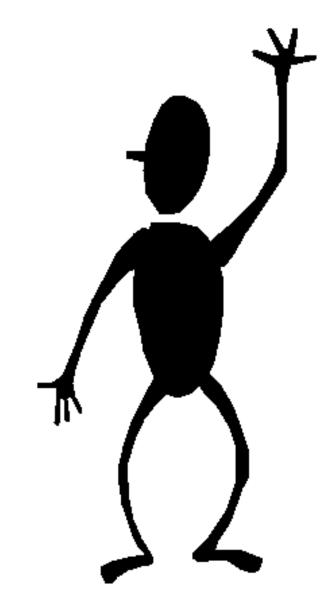


What is the PTF number?

PTF # SO15804, SO15805, SO15806, SO15807



Please Provide Feedback...



Srinivas Adupa

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In Closing...



When is the next Community Update call?

- The 2nd Monday of each month
- Our next call will be Monday February 8th, 2021

When is the next Db2 Tools Suite Product Roadmap Webcast?

Wednesday March 24th, 2021





Thank You