



IBM File Manager for z/OS DB2 Feature

Program number 5655-V52

Tutorial

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This is the tutorial for the DB2[®] feature of IBM's File Manager for z/OS[®], one of the IBM zSeries[®] problem determination tools.

- File Manager DB2 utilities

- Print
- Object list
- Copy
- Export and import



In this section you will see how to use the File Manager DB2 Copy utility. You can use it to copy data from a DB2 table or view to another table. You can perform a simple copy, where all of the rows are copied from one table to another that has the same column definitions.

You can also specify selection criteria, so that only certain rows are copied based on data values. If the output table has different columns than the input, you can use something called “column mapping” to control which input column is copied to each output column. You can even create data to populate new columns or change data during the copy.

Copy



Example: Copy rows from table to table

- Review Copy settings
- Specify input and output tables
- “Map” input columns to output columns
- Copy rows

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In this example, the copy utility will be used to copy data from one table to another. The output table will have some column names that are different than the input table, so “column mapping” will be performed to specify which input column is copied to each output column.

Select Copy utility options



Process	Options	Utilities	Help
FM/DB2 (13	1. Print settings	
Command		2. FM/DB2 system options	
1 Print		3. Job card specifications	
2 Objec		4. Compiler language selection	
3 Copy		5. COBOL compiler specifications	
4 Objec		6. HLASM compiler specifications	
5 Privi		7. PL/I compiler specifications	
6 Impor		8. Temporary Data Set Allocations	
7 Expor		9. Output Data Set Allocations	
8 Creat		10. Trace options	
9 Utili		11. ISPF settings	
10 Audit		12. Editor options	
11 Print		13. Copy utility options	
		14. Object list utility options	
		15. Export utility options	
		16. DB2 LOAD utility options	
		17. DB2 Utility LISTDEF options	
		18. DB2 Utility OPTIONS options	
		19. DB2 Utility TEMPLATE options	
		20. DB2 Unload utility options	

Enter

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Before copying for the first time, review the Copy options settings. There are several ways to get to the Options panels. One way is to position the cursor on the Options selection at the top of the screen. Select 13 “Copy utility options” on the pull-down menu by entering 13 in the input field. Press Enter.

Copy options – delete existing rows



```
Process  Options  Utilities  Help
-----
FM/DB2 (D91F)                               Copy Options                               Global Settings
Command ==>

From Table Concurrency Option:                To Table Locking Option:
Enter "/" to select option                    Locking
/ Use uncommitted read                        1 1. None
                                                2 2. Share mode
                                                3 3. Exclusive mode

Copy Options:
Duplicate key processing                       Enter "/" to select option
1 1. Ignore                                   / Delete existing rows
2 2. Update                                   - Ignore referential integrity errors
For ALL duplicates                           Create audit trail (Option fixed)

Ignore = rows with duplicate keys are ignored and not copied
Ignore RI errors - rows without RI errors are copied, rows with RI errors are not
If not selected the copy will fail on RI errors

F3
```

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The Copy Options panel is displayed. These settings affect how data is copied. First, we will look at the “Duplicate key processing” option. If the output table already contains data, this controls what happens when there are duplicate key values in any input rows. “Ignore” means that rows with duplicate keys are ignored and not copied. Update is the opposite, and File Manager attempts to update the output table with data from the input row.

Be sure that the “Delete existing rows” option is set the way you need it. When it is selected, all the rows in the output table are deleted before any input rows are copied. That is great if it is what you want to do, but it is bad if that is not your intention.

“Ignore referential integrity errors” lets you copy the rows that do not have RI errors, but the rows that do have RI errors are not copied. If this option is off, then the Copy utility fails if it encounters an RI error.

If the “Create audit trail” setting is turned on, File Manager automatically creates a new audit log file every time you do a copy. If you do not plan to print reports from File Manager audit logs, then turn this option off. PF3 to exit.

Select Copy



```
Process  Options  Utilities  Help
-----
FM/DB2 (D91F)                Utility Functions
Command ==> 3
-----
1 Print      Print DB2 table or view
2 Objects   Create and drop DB2 objects
3 Copy       Copy data within DB2
4 Object List  Display and process DB2 object lists
5 Privileges Manage DB2 privileges
6 Import     Import sequential or VSAM data into DB2
7 Export     Export DB2 data to sequential or VSAM data set
8 Create     Create DB2 test data
9 Utilities  DB2 utility job generation
10 Audit trail Print audit trail report
11 Print browse Browse FM/DB2 print data set
```

Enter

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Starting from the utilities menu, select option 3 for Copy. Press Enter.

Specify the 'from' table



```
Process  Options  Utilities  Help
-----
FM/DB2 (D91F)                               Copy Utility
Command ==>>> _____

From DB2 Object:
Location . . . . . _____ Database . . . . . _____ (optional)
Owner . . . . . TSS13 + Table Space . . _____ (optional)
Name . . . . . EMP _____ +

Copy count . . . . . ALL _____ Number of rows to copy

From Template:
Data set name . . . . _____
Member . . . . . _____

Processing Options:
Template usage                               Enter "/", "A" always to select option
3 1. Above                                   _ Edit template
2. Previous                                  _ Copy panel values
3. Generate from table
4. Generate/Replace

F1=Help   F2=Split   F3=Exit   F4=Expand   F6=Select   F7=B
F8=Forward F9=Swap    F10=Left F11=Right  F12=Cancel

Enter
```

On the “Copy Utility” panel, specify the input in the “from DB2 object” fields. You can specify a table, a view, or an alias of a table or a view. You can specify the number of rows to copy in the “copy count” field. Specify “ALL”, as in this example, to copy all rows. If you need to copy only certain rows based on data values, you can select the “edit template” option, and in the template you can specify selection criteria to control which rows are copied.

If you already have a template that you want to re-use that selects rows, you can specify it in the template “data set name” and “member” fields, and specify option 1 (for above) in the “template usage field”. If you do not plan to use an existing template, specify option 3 (generate from table) in the “template usage” option. Option 3 has been selected here. Press Enter to continue.

Specify the 'to' table Edit mapping will be performed



```
Process  Options  Utilities  Help
-----
COPY      From TSS13.EMP
Command ==> _____

To DB2 Object:
Location . . . . . _____ Database . . . . . _____ (optional)
Owner . . . . . TSS13 + Table Space . . . . . _____ (optional)
Name . . . . . EMP4 _____ +

To Template:
Data set name . . . . . _____
Member . . . . . _____

Processing Options:
Template usage          Enter "/", "A" always to select option
3 1. Above             / Edit copy options
  2. Previous          / Edit template mapping
  3. Generate from table - Batch execution
  4. Generate/Replace

F1=Help   F2=Split   F3=Exit   F4=Expand   F6=Select   F7=B
F8=Forward F9=Swap   F10=Left  F11=Right  F12=Cancel

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```

Next, specify the name of the output table in the “to DB2 object” fields. If the input and output tables both have the same column names, data will be copied automatically based on the column names.

In this example, the output table has some different column names from the input, so the “edit template mapping” option is selected with a slash. Press Enter.

Template mapping Edit two columns



Process Options Help

FM/DB2 (D91F) Template Mapping Line 1 of 14
 Command ==> Scroll PAGE

To TSS13.EMP4
 From TSS13.EMP

Cmd	CL#	To Column name	Datatype	NI	CL#	From Column name	Datatype	NI
		**** Top of data ****						
e	1	EMPNO	CH(6)	NN	1	EMPNO	CH(6)	NN
	2	JOBTITLE	CH(12)					
	3	FIRSTNME	VC(12)	NN	2	FIRSTNME	VC(12)	NN
	4	MIDINIT	CH(1)	NN	3	MIDINIT	CH(1)	NN
e	5	LASTNAME	VC(15)	NN	4	LASTNAME	VC(15)	NN
	6	WORKDEPT	CH(3)		5	WORKDEPT	CH(3)	
	7	PHONENO	CH(4)		6	PHONENO	CH(4)	
	8	HIREDATE	DATE		7	HIREDATE	DATE	
	9	EDLEVEL	SMINT		9	EDLEVEL	SMINT	
	10	SEX	CH(1)		10	SEX	CH(1)	
	11	BIRTHDATE	DATE		11	BIRTHDATE	DATE	
	12	SALARY	DEC(9,2)		12	SALARY	DEC	

F1=Help F2=Split F3=Exit F4=CRetrieve F5=RFind F6=R
 F7=Up F8=Down F9=Swap F12=Cancel

Enter

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Since the “edit template mapping” option was selected, the “template mapping” panel is displayed. Use this panel to map columns to each other, and to overlay or scramble the data in selected columns during the copy operation.

On the left side of the screen, all of the output columns are shown. On the right side are columns from the input table that have been mapped to output columns. By default, columns with the same name are automatically mapped to each other. For example, a column named EMPNO has been automatically mapped, which is denoted by EMPNO being displayed side by side on both the left and the right column.

Output column named JOBTITLE is not mapped. In this example there is no column in the input table with the same name. To map a field with a different name from the input table to the output table, change the mapping with an S line command. Use an E line command to change data by editing the column. E line commands were entered next to the JOBTITLE and LASTNAME columns. Press Enter.

Enter scramble option



```
Process  Options  Utilities  Help
-----
FM/DB2 (D91F)                Column Attributes
Command ==> _____
More: +
Fixed Attributes:
  Column name  LASTNAME
  Type        VARCHAR(15)
Use Attributes:
  Heading     _____
  Output width _____
Create Attributes:
  Filler     _____
Data will be scrambled
in the output table
Repeat user pattern _____ YES or NO
Scrambling Options:
Scramble Type  Enter "/" to select option
  1. Random    - Value      Column In _____ Out _____
  2. Repeatab Dsn
  3. Translate
F1=Help      F2=Split    F3=Exit      F4=CRetriev  F7=Backward  F8=F
F9=Swap      F10=Actions F12=Cancel
F3
```

The “column attributes” panel is displayed for the LASTNAME column. In this example, the data will be scrambled. “1” (for random scrambling) is specified in the “scramble type” option. Scrambling might be needed if there is sensitive information in the input table. For example, creating a test table from a production table, it might be necessary to scramble things like customer names, addresses, and identification numbers. Notice that there are different scrambling algorithms to choose from, random, repeatable, and translate. Press F3.

Enter fill pattern for new column



```
Process  Options  Utilities  Help
-----
FM/DB2 (D91F)                Column Attributes
Command ==> _____ More:  +

Fixed Attributes:
  Column name  JOBTITLE
  Type        CHARACTER(12)

Use Attributes:
  Heading     _____
  Output width _____

Create Attributes:
  Filler      _____
  Action      _____
  Start character _____
  Pattern     'New Employee'
  Repeat user pattern y_ YES or NO

Scrambling Options:
  Scramble Type  Enter "/" to select option
  1. Random      _ Value  Column In _____ Out _____
  2. Repeatable Dsn _____
  3. Translate

F1=Help  F2=Split  F3=Exit  F4=CRetriev  F7=Backward  F8=F
F9=Swap  F10=Actions F12=Cancel

Data will be created in the output table

F3
```

The “column attributes” panel is displayed for the JOBTITLE column. A text string ‘New Employee’ is specified in the “Pattern” field. The value of this column will be replaced with this text string in every row that is copied. Since this is a new field, File Manager will be creating data in the field during the copy. Press F3.

Delete all rows before copy



```
Process  Options  Help
-----
FM/DB2 (D91F)          Template Mapping          Line 1 of 14
Command ==>>>          Scroll PAGE

To      TSS13.EMP4
From

Cmd CL#  -
1        You have requested to delete all existing rows of the
2        DB2 object:
3        TSS13.EMP4
4        Press ENTER to proceed with DB2 table copy.
5        Press EXIT or CANCEL to abort copy.
6
7        F1=Help      F2=Split    F3=Exit     F7=Backward
8        F8=Forward   F9=Swap     F12=Cancel
9
10 SEX          CH(1)          | 10 SEX
11 BIRTHDATE    DATE           | 11 BIRTHDATE
12 SALARY       DEC(9,2)        | 12 SALARY
F1=Help      F2=Split    F3=Exit     F4=CRetriev F5=RFind   F6=R
F7=Up        F8=Down     F9=Swap     F12=Cancel

Enter
```

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You may recall that an option called “delete existing rows” was selected on the “copy options” panel. This pop-up panel is displayed if that option is on, and it warns that all existing rows in the output table will be deleted if you continue. If you do not want to delete existing rows, press EXIT or CANCEL to cancel the copy. The “delete existing rows” “copy options” panel has to be changed before returning to this function. Enter is pressed to continue.

Copy completed



```
Process  Options  Utilities  Help
-----  -
FM/DB2 (D91F)                Copy Utility                42 row(s) copied
Command ==> _____

From DB2 Object:
Location . . . . . _____ Database . . . . . _____ (optional)
Owner . . . . . TSS13      + Table Space . . . . . _____ (optional)
Name . . . . . EMP _____ +

Copy count . . . . . ALL _____ Number of rows to copy

From Template:
Data set name . . . . . _____
Member . . . . . _____

Processing Options:
Template usage          Enter "/", "A"lways to select option
 3 1. Above             - Edit template
   2. Previous          - Copy panel values
   3. Generate from table
   4. Generate/Replace

F1=Help   F2=Split   F3=Exit   F4=Expand   F6=Select   F7=Backward
F8=Forward F9=Swap    F10=Left  F11=Right  F12=Cancel
```

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A message is displayed in the right corner of the screen indicating that 42 rows were copied.

Viewing the new table Data was copied and modified



Process Options Utilities Help

FM/DB2 (D91F) Table View Top of 42

Command ==> Scroll PAGE

42 rows fetched Format TABL

EMPNO	JOBTITLE	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONE
#1	#2	#3	#4	#5	#6	#7
CH(6)	CH(12)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)
<---->	<-----1->	<-----1->	-	<-----1----->	<->	<-->
***** **** Top of data ****						
000001	000010	New Employee	CHRISTINE<	I	IYJK<	A00 3978
000002	000020	New Employee	MICHAEL<	L	ZFYFNUNIC<	B01 1111
000003	000030	New Employee	SALLY<	A	CAYV<	C01 4738
000004	000050	New Employee	JOHN<	B	UAMIQ<	E01 6789
000005	000060	New Employee	IRVING<	F	XCCHL<	D11 6423
000006	000070	New Employee	EVA<	D	NUEPSTX<	D21 7831
000007	000090	New Employee	EILEEN<	W	KLUCBPLVR<	E11 5498
000008	000100	New Employee	THEODORE<	Q	HEPJTFN<	E21 0972
000009	000110	New Employee	VINCENZO<	G	PKOKEQTD<	A00 3490
000010	000120	New Employee	SEAN<		V'SIFPBCO<	A00 2167
000011	000130	New Employee	DOLORES<	M	WNECKPFF<	C01 4578
000012	000140	New Employee	HEATHER<	A	RFZEIAR<	C01 1793

F1=Help F2=Zoom F3=Exit F4=CRetrie F5=RFind F6=Exit/Sel
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

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Navigate to the view utility, and specify the name of the output table. Press Enter.

The table is fetched in view.

The EMPNO column was copied from the input table without changes. The JOBTITLE rows contain the value "New Employee", as specified in the template mapping panels. Data values in the LASTNAME column have been scrambled.

This is the end of the section, using the File Manager DB2 copy utility.

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