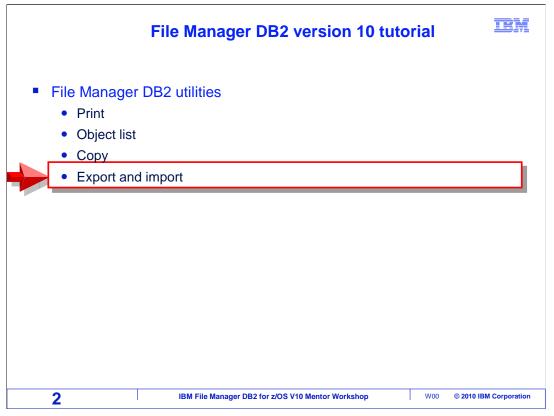
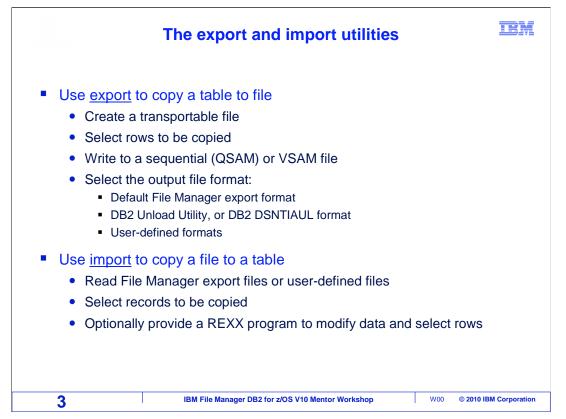


This is the tutorial for the DB2[®] feature of IBM's File Manager for z/OS[®], one of the IBM zSeries[®] problem determination tools.



In this section you will see how to use the File Manager DB2 Export and Import utilities.



Export and Import are often used together to copy data from a table to a sequential file, and then copy it back to another table. One advantage of doing this is that you can transport data from one DB2 subsystem to another.

You can use the Export utility to export to either a sequential or VSAM file. You can use a template to select which rows are copied. And you can choose from several output formats, including File Manager's own default export format, the DB2 Unload Utility format, or to DB2 DSNTIAUL format. There is also a "user defined" format you can customize, and you can even provide your own copybook to lay out the output records. When you create output files in any of these formats, File Manager automatically generates a template that the Import utility can use as a map to read the file back in.

You can also generate comma-delimited files, which might be used to download for spreadsheet programs or other workstation utilities.

The import utility is used to copy records from a file into a DB2 table. It can read a file created by the export utility, or you can use your own file, and provide a copybook that lays out the records. You can use a template to select which records are imported, and if you need even more control, you can write a REXX program that can select records and even create or modify data before it is written into the table.



In this example, the export utility will be used to create a file that can be used as input to the import utility. The input table will be specified, the utility will generate a template that will be used by the import utility, and an output export file will be created.

	Export to a file		IBM
<u>P</u> rocess <u>O</u> ptio	ns <u>U</u> tilities <u>H</u> elp		
FM/DB2 (D91F) Command ===> 7	Utility Functions		
	Print DB2 table or view Create and drop DB2 objects Copy data within DB2 Display and process DB2 object lists Manage DB2 privileges Import sequential or VSAM data into DB2 Export DB2 data to sequential or VSAM data Create DB2 test data DB2 utility job generation Print audit trail report Browse FM/DB2 print data set	set	
	nple, data from a DB2 table will be a file that will be then be imported		Enter
5	IBM File Manager DB2 for z/OS V10 Mentor Workshop	W00 @	0 2010 IBM Corporati

Access the export utility panels by selecting the export option from the utilities menu. Navigate to the utilities menu from the File Manager DB2 primary option menu, selection 3. From the utility functions menu, select option 7, Export. Press Enter.

<u>P</u> rocess <u>O</u> ptions	<u>U</u> tilities	Help
FM/DB2 (D91F) Command ===>		Export Utility
From DB2 Object: Location Owner Name Export count	ALLANSC EMP	Table or view to be exported Database
From Template: Data set name Member		This is optional
Processing Options: 3 1. Above 2. Previous 3. Generate from 4. Generate/Rep		Enter "/", "A"lways to select option / Edit options Edit template

The Export Utility panel is displayed. In the "From DB2 Object" fields, enter the name of the table to be exported. Export count will default to ALL, so all rows will be exported. This can be modified. If a template is being used, enter the name in the "From Template" field. In this example, all rows will be copied. So in the "template usage" option, 3 is selected to generate the template automatically from the table. Optionally, you can review your edit export options by entering a slash in the "edit options" field. A slash has been entered to review the export edit options. Press Enter.

Export option	ns are displayed
<u>Process Options Utilities H</u> elp	
FM/DB2 (D91F) Export Opti Command ===>	ons - (1 of 3)
Data Format: 1. FM/DB2 (SQLDA) format 2. DB2 UNLOAD format 3. DSNTIAUL format 4. User defined 5. Delimited variables (CSV)	
Execution options: 1. Online 2. Batch 3. Batch, using DB2 UNLOAD>	Enter "/" to select option Batch data set creation Edit DB2 UNLOAD options
	(For user-defined, CSV data formats) (For user-defined data format) F3
7 IBM File Manager DB2 f	or z/OS V10 Mentor Workshop W00 © 2010 IBM Corporation

On the export options panel, you can select the default output data format. In this example, the File Manager DB2 format, option 1, is selected. That is a good format if you plan to use the File Manager DB2 import utility to copy the file to another table. You can specify that the output records are compatible with the DB2 Load Utility, or the DB2 DSNTIAUL utility. The "User Defined" option gives you additional formatting control. Or you can generate a "delimited" output file. For example, you can create a comma delimited file.

You can also choose to run the export utility in batch. If you are exporting a large table, you might prefer that, so your TSO session is free while the export runs. In this example, Execution option 1, online, has been entered. PF3 to exit from the options panel and continue.

Enter 'To' output and template data set names	IBM
<u>P</u> rocess <u>O</u> ptions <u>U</u> tilities <u>H</u> elp	
EXPORT From ALLANSC.EMP Command ===>	
To Partitioned, Sequential or VSHM Data Set: Data set name 'TSS13.EMP.EXPORT' Member	i on
8 IBM File Manager DB2 for z/OS V10 Mentor Workshop W00 © 2010	BM Corporation

The 'To' export panel is displayed. Specify the name of the output file. You can re-use an existing file, but if you do make sure that it has appropriate file attributes. It can be simpler to specify a file name that does not already exist, and File Manager will automatically create it with the correct attributes.

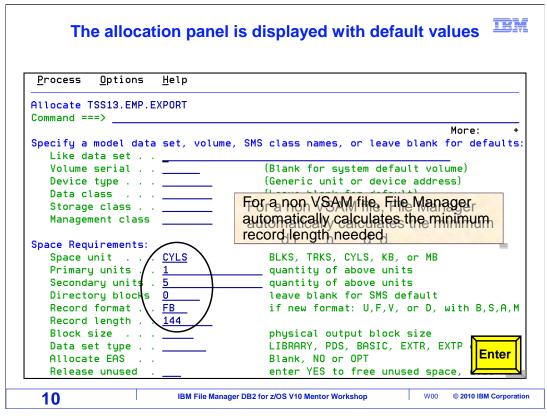
Next comes a very important part of the process. In this scenario, a file is being created that will be read later by the import utility. Import will need a layout of the records it reads. Import can use a template that the Export utility creates for that purpose.

Specify the name of the new template to be created in the "To Copybook or Template" field. This is typically a PDS member. Template PDSes have 80 byte blocked records. Under "Template Usage", specify option 4, "Generate and Save" to automatically create and save a Template. This is important. If you do not have a template that maps the records in the file, you will not be able to run the import utility. No template, no import.

Press Enter.

		This panel is displayed if the
Allocate TSS13.EMP.EXP	ORT	file needs to be created
Command ===>		
New Data Set Organizat	ion:	
	Instructions	
<u>(6</u> 1). ksds	The above data set does not exist.	
2. ESDS	To define or allocate a new data set select a data	
3. RRDS	set organizati	to It is easiest to use a sequential
	or PF12/CANCEL	to It is easiest to use a sequential
5. LDS		(non VSAM) file for output
6. Non VSAM		
		set, enter a data set name
	ретом то сору	existing allocation attributes.
Existing Data Set:		
Like data set		
Volume serial		

Since the output, or "to" file did not already exist, this panel is displayed to walk you through the creation of the file. You can create different types of files, such as VSAM, KSDS or ESDS files. It is easiest to use a sequential (non-VSAM) file for output. Option 6 Non VSAM is selected. Press Enter.



On this panel, you can control the file attributes. The record length has already been calculated by the export utility. This is why it is easiest to let it create its own output file, because you do not have to guess about the required record length. Review the primary and secondary allocations, and ensure that the file will be large enough to hold all of the data. Press Enter to continue.

<u>P</u> rocess <u>O</u> ptions <u>U</u> tilitie	es <u>H</u> elp
FM/DB2 (D91F) Command ===>	Export Utility 42 rows exporte
From DB2 Object:	
Location	Database (optiona
Owner <u>ALLANS</u> Name EMP	SC + Table Space (optiona
Name <u>EMP</u>	
Export count <u>ALL</u>	Number of rows to export
From Template:	
Member	
Processing Options:	
Template usage	Enter "/", "A"lways to select option
3 1. Above	Edit options
2. Previous	Edit template
Generate from table	
Generate/Replace	

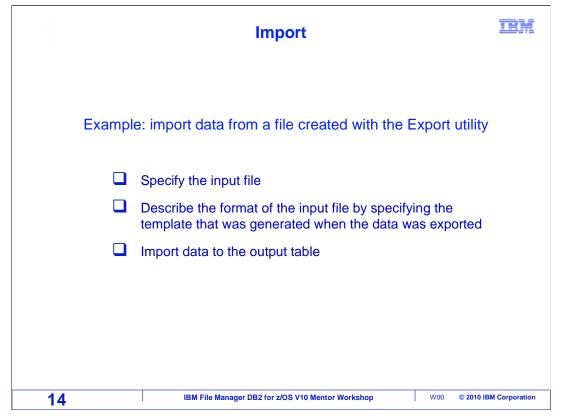
The export has completed successfully. The number of rows exported is displayed on the right, above the command line. Forty two rows were exported.

	Access File Manager View panel Select the exported 'To' data set
Process Option	s <u>H</u> elp
File Manager	View Entry Panel
Data set/path Member Volume serial	· · + Record sampling _
Data set name Member	(Blank or pattern for member list)
3 2. Previous	e Start position type Enter "/" to select option 1. Key _ Edit template _ Type (1,2,S) 2. RBA _ Include only selected records 3. Record number _ Binary mode, reclen <u>80</u>
12	IBM File Manager DB2 for z/OS V10 Mentor Workshop W00 © 2010 IBM Corporation

File Manager DB2 was exited and File Manager Base view option was accessed. In the input file name, enter the name of the newly created export file and press Enter.

	The expo	ort file is displa	iyed in View forma	t IBJ
Proces	ss <u>O</u> ptions <u>H</u> el	lp		
View	TSS13.E	EMP.EXPORT		Top of 42
Command	d ===>			Scroll PAGE
	Col 1 Inser	rt Length <u>144</u>	Record <u>AT TOP</u>	Format CHAR
	+10+	2+3+	+4+5+	6+7-
*****	**** Top of data	a ****		
000001	000010CHRISTINE	E IHAAS	A0039781965-0	
000002	000020MICHAEL	LTHOMPSON	B0111111973-1	0-10MANAGER
000003	000030SALLY	AKWAN	C0147381975-0	4-05MANAGER
		BGEYER	E0167891949-0	
000005	000060IRVING		D1164231973-0	9-14MANAGER
000006	000070EVA	DPULASKI	D2178311980-0	9-30MANAGER
000007	000090EILEEN	WHENDERSON	E1154981970-0	8-15MANAGER
000008	000100THEODORE	Q. SPENSER	E2109721980-0	6-19MANAGER
000009	000110VINCENZ0	GLUCCHESI	A0034901958-0	5-16SALESREP
000010	000120SEAN	O'CONNELL	A0021671963-1	2-05CLERK
000011	000130DOLORES	MQUINTANA	C0145781971-0	7-28ANALYST
000012	000140HEATHER	ANICHOLLS	C0117931976-1	2-15ANALYST
000013	000150BRUCE	ADAMSON	D1145101972-0	2-12ENGINEER
000014	000160ELIZABETH	R. PIANKA	D1137821977-1	0-11ENGINEER
000015	000170MASATOSH	I JYOSHIMURA	D1128901978-0	9-15ENGINEER
000016	000180MARILYN	SSCOUTTEN	D1116821973-0	7-07ENGINEER
000017	000190JAMES	HWALKER	D1129861974-0	7-26ENGINEER
13		IBM File Manager DB2 for z/OS \	/10 Mentor Workshop W(00 © 2010 IBM Corporat

Here is the export file. It has a columnar format, and there are some special binary fields that are needed for things like null indicators and to hold the length of variable length columns. This file can be used as input to the import utility.



Next, the import utility will be used. The name of the file and its format will be specified, and the data will be imported into a table.

Selec	ct 6 Import from the utility functions panel	TBM
<u>Process</u> Optio FM/DB2 (D91F) Command ===>6	ns <u>U</u> tilities <u>H</u> elp Utility Functions	
		Enter
15	IBM File Manager DB2 for z/OS V10 Mentor Workshop W00 © 20	10 IBM Corporation

In some cases you may need to switch to a different subsystem, so you can import the data into a table on another DB2 subsystem. You can do that with an SSID command, or by returning to the File Manager DB2 main menu and changing the subsystem ID there.

But in this case, the output table is in the same subsystem, so there is no need to switch. Select option 6, Import, from the utilities menu. Press Enter.

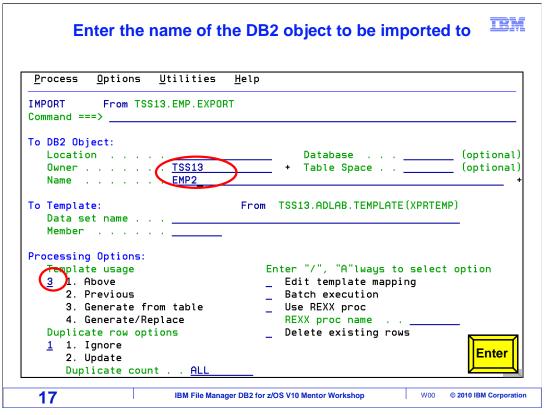
Enter the na	ame of the Export fi	le and the template	IBM
<u>P</u> rocess <u>O</u> ptions <u>U</u> 1	tilities <u>H</u> elp		
FM/DB2 (D91F) Command ===>	Import Utility		
Data set name 🤇 Member Volume		f rows to import	
	te: 'TSS13.ADLAB.TEMPLATE' XPRTEMP	>	
Processing Options: Template usage 1. Above 2. Previous	Enter "/", "A"lways _ Edit template	1. FM/DB2 (SQLDA) 2. DB2 UNLOAD forr 3. DSNTIAUL forma 4. User defined	nat
16	IBM File Manager DB2 for z/OS V10 Mente	or Workshop W00 © 2010	IBM Corporation

First, specify the name of the file that the Export utility created in the "from data set" fields. The "import count" field will default to "ALL". This can be modified.

You MUST provide a template or copybook to lay out the input records. Remember when the export utility was used, a template was automatically created, and the template name has been entered into the "From Copybook or Template" field.

You can optionally edit the template to provide selection criteria if you need to control which records are processed. Or you can use your own input file. If you do, provide a copybook as a layout.

Specify the "Data Format" option to match the input file. The File Manager DB2 Format was selected when the export was done, so the same format is selected here by entering a one in the "Data format" field. Press Enter.



Next, specify information about the output table in the "To DB2 object" fields. Typically, you do not specify a template for the output table. You can use an output template if you need to perform column mapping. You only have to do that if your output column names are different from the input column names.

Keep in mind that you can map columns, which means that your input and output tables are not required to have exactly the same column definitions.

In the "Duplicate row options", you control the action taken when there are duplicate keys. We have specified "1 Ignore" for duplicate row options. The "Delete existing rows" option, if selected, tells File Manager to delete ALL of the rows in the output table before it imports any data. This option has not been selected.

If you select the "batch execution" option, JCL will be generated to run the utility in batch. Or leave that option blank, as in this example, to run the utility online. Press Enter.

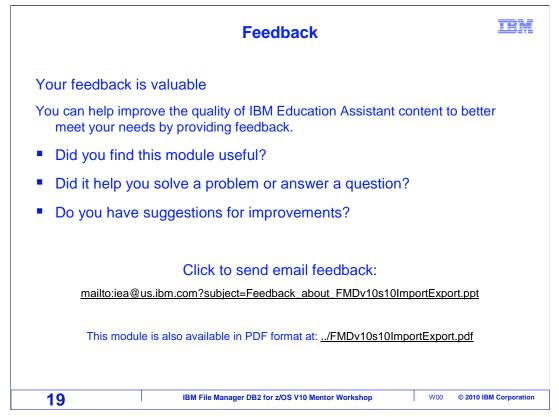
<u>P</u> rocess <u>O</u> ptions <u>U</u> til	lities <u>H</u> elp	
FM/DB2 (D91F) Command ===>	Import Utility	42 rows imported
From Partitioned, Sequent		
Data set name <u>'1</u> Member		
Volume		
Import Count <u>Al</u>	<u>L</u> Number of	rows to import
From Copybook or Template	.	
	 FSS13.ADLAB.TEMPLATE'	
Member XF	PRTEMP	
Processing Options:	Enter "/", "A"lways	Data format
1 1. Above		
2. Previous		2. DB2 UNLOAD format
		DSNTIAUL format

The import is done, and data from the input file was written to the table. File Manager DB2 has issued a message indicating that 42 rows were imported. This message is displayed in the right corner of the screen. The export function exported 42 rows, so all rows were successfully imported.

As you have seen there are a lot of different ways you can use the Export and Import utilities. If you plan to Export data and then Import it again, it is typically easiest to use the default File Manager data format.

Also, consider generating JCL for an export and import pair. Put them both in the same job, and you can submit the job whenever you need to copy a table.

This ends the section on using the File Manager DB2 export and import utilities.



You can help improve the quality of IBM Education Assistant content by providing feedback.

	IKM
Trademarks, copyrights, and disclai	mers
IBM, the IBM logo, ibm.com, DB2, z/OS, and zSeries are trademarks or registered trademarks of International Busine many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A c is available on the web at " <u>Copyright and trademark information</u> " at http://www.ibm.com/legal/copytrade.shtml	
THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES (MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRES "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS B/ PRODUCT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHAI ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR AN NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREA REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CON OR LICENSE GOVERNING THE USE OF IBM PRODUCTS OR SOFTWARE.	SENTATION, IT IS PROVIDED ASED ON IBM'S CURRENT LL NOT BE RESPONSIBLE FOR Y OTHER DOCUMENTATION. ATING ANY WARRANTIES OR
© Copyright International Business Machines Corporation 2010. All rights reserved.	
20 IBM File Manager DB2 for z/OS V10 Mentor Workshop	W00 © 2010 IBM Corporation