


[print](#) | [close](#)

APIs by Example: Working with Database Files, Fields and More

[System iNetwork Programming Tips Newsletter](#)

[Carsten Flensburg](#)

Carsten Flensburg

Thu, 10/11/2007 (All day)

The past couple of installments of APIs by Example dealt with database-related topics and utilities, and showed API-driven examples of how to take advantage of APIs when supporting the everyday tasks of a business application programmer.

Today I continue down that path and present the Work with Database Files (WRKDBF) and Display File Field Descriptions (DSPFFD2) commands. Because I'm aiming to provide a useful set of database tools for programmers, I've also included links to a very powerful freeware utility called UNDEL2 that lets you undelete previously deleted records in a database file.

The WRKDBF command offers a front end to the commands presented earlier, the DSPFFD2 command included today, and native IBM file-related commands -- and finally (and optionally) the freeware tool UNDEL2, which was written by Dave McKenzie. I've included a couple of links at the end of this article pointing you to sites where you can download the UNDEL2 utility. Be sure to read and fully comprehend the README file included with the download before you attempt to install and run the UNDEL2 command on your system.

Here's the WRKDBF command prompt:

```

                                Work with Database Files (WRKDBF)

Type choices, press Enter.

File . . . . . Name, generic*,
*ALL
Library . . . . . *LIBL Name, *LIBL,
*CURLIB...
File type . . . . . *ALL *ALL, *PF, *LF,
*DDMF
Sort order . . . . . *FILE *FILE, *LIB

```

You can limit the list by file type to include only physical files (*PF), logical files (*LF), DDM files (*DDMF), or select all three types of database files (*ALL). Only physical files of type DTA (Data) are included. There's also an option to sort the list in either library, then file name or file name, then library order. Running the command

```

WRKDBF FILE(QADB*)
      TYPE(*PF)
      ORDER(*FILE)

```

should take you to a display panel similar to the one below:

Work with Database Files				
WYNDHAMW			06-10-07	
09:35:21				
Type options, press Enter.				
1=PDM 2=Change 3=Copy 4=Delete 5=Display data 6=Display fields 7=Display access paths 8=File description 9=Run query 10=Update data 13=Change description 14=Clear 15=Un-delete 16=Generate SQL DDL				
Opt	File	Library	Type	Text
	QADBCCST	QSYS	PF	Constraint Field Usage
Information	QADBFCST	QSYS	PF	File Level Constraint Cross
Reference File	QADBFDPEP	QSYS	PF	Cross reference dependency file
	QADBIFLD	QSYS	PF	Cross reference physical file
	QADBKFLD	QSYS	PF	Cross reference physical file
	QADBPKG	QSYS	PF	SQL Package physical file
	QADBXMQT	QSYS	PF	
	QADBXRDBD	QSYS	PF	RDB Directory physical file
	QADBXREF	QSYS	PF	Cross reference physical file
	QADBXSFLD	QSYS	PF	
More...				
Parameters or command				
===>				
F3=Exit	F4=Prompt	F5=Refresh	F9=Retrieve	F11=Display
full text				
F12=Cancel	F17=Top	F18=Bottom		

The availability of option *1=PDM* and option *15=Un-delete* depends on the presence of the Work with Objects using PDM (WRKOBJPDM) and Undelete Records (UNDEL2), respectively, since these are the commands evoked by said options. As for the remaining options, they provide access to the following database file related commands:

- 2=Change -- Runs or prompts the Change File command for the relevant type of file, either the Change Physical File (CHGPF), the Change Logical File (CHGLF) or the Change DDM File (CHGDDMF).
- 3=Copy -- Runs or prompts the Copy File (CPYF) command.
- 4=Delete -- Runs or prompts the Delete File (DLTF) command, following the presentation of a confirmation panel.
- 5=Display data -- Runs or prompts the Display Physical File Member (DSPPFM) command.
- 6=Display fields -- Runs or prompts the Display File Field Description (DSPFFD2) command.
- 7=Display access paths -- Runs or prompts the Display Physical File Access Paths (DSPPFAP) command.
- 8=File description -- Runs or prompts the Display File Description (DSPFD) command.
- 9=Run query -- Runs or prompts the Run Query (RUNQRY) command.
- 10=Update data -- Runs or prompts the Update Data with Temp Program (UPDDTA) command.
- 13=Change description -- Runs or prompts the Change Object Description (CHGOBJD) command.
- 14=Delete -- Runs or prompts the Clear Physical File Member (CLRPFM) command, following the presentation of a confirmation panel.
- 16=Generate SQL DDL -- Runs or prompts the Generate SQL DDL (GENSQLDDL) command.

Please refer to the WRKDBF command and display panel help text for further details. Links to the articles including the DSPPFAP and GENSQLDDL commands are provided at the end of this article. As mentioned earlier, the DSPFFD2 command is part of today's article, and the DSPFFD2 command prompt has the following appearance:

Display File Field Description (DSPFFD2)

Type choices, press Enter.

File	Name
Library *LIBL	Name, *LIBL,
*CURLIB	
Record format *FIRST	Name, *FIRST

Additional Parameters

```

System . . . . . *LCL                *LCL, *RMT,
*FILETYPE

```

Specify a database file name optionally qualified by a library to display a list of all fields contained in the specified record format. The System parameter allows you to define whether a local or remote file, or either depending of the type of the specified file name, should be selected. Here's an example of the resulting display panel:

Display File Field Description							
WYNDHAMW							
06-10-07							
11:27:42							
File :		QADBFDEP		Record length . . :		10425	
Library :		QSYS		Field count . . :		9	
Record format . . :		QDBFDEP					
File type :		PF		Include field . .			
Access path . . . :		*KEYED		Include text . . .			
Field	Data type	Buffer	Length	Dig	Dec	Key	Text
DBFFIL	Var Char	1	130			2 A	Dependency
name							
DBFLIB	Char	131	10			1 A	Dependency
Library name							
DBFFDP	Var Char	141	130			4 A	File name of
dependent							
DBFLDP	Char	271	10			3 A	Library name
of depende							
DBFTDP	Char	281	1				Dependency:
D-data,V-vi							
DBFRDP	Char	282	10			5 A	Format name
of dependen							
DBFLB2	Var Char	292	130				Library name
DBF_FSIG	Var Char	422	10002				Signature
DBF_PCNT	Binary	10424	2	4	0		Paramater
count							
Bottom							
F3=Exit	F7=Position to		F9=Display PF access paths				
F10=Display data base relations			F11=Display column headings				
F24=More keys							

For logical files there's also a header field specifying whether any select/omit criteria are defined for the logical file.

The *Include field* and *Include text* input fields let you subset the list to only display fields containing the specified string in the field name or text and column headings, respectively.

Pressing function key F7 displays a window where you can specify a field name and have the list positioned to that field. Other function keys provide access to commands similar to those available from the WRKDBF display panel's options:

- F9=Display Physical File Access Paths (DSPPFAP) command
- F10=Display Data Base Relations (DSPDBR) command
- F13=Display File Description (DSPFD) command
- F14=Run Query (RUNQRY) command
- F15=Display Select/Omit (DSPFD TYPE(*SELECT)) command
- F16=Generate SQL DDL (GENSQLDDL) command
- F21=Print File Field Description (PRTFFD) command

Press function key F24 to toggle through all available function keys, including those related to the list presentation. Again, online command and display panel help text is provided to explain the details.

I hope you find the data base tools provided and presented in this and previous articles useful, and that they help in the part of your daily job that involves database development and maintenance. If you have any other ideas for API-driven programmer tools and utilities that might be worth considering for an upcoming APIs by Example article, I'd be happy to hear about it!

This APIs by Example includes the following sources:

```
CBX178  -- RPGLE  -- Display File Field Description 2 - CPP
CBX178E -- RPGLE  -- Display File Field Description 2 - UIM Exit
Program
CBX178H -- PNLGRP -- Display File Field Description 2 - Help
CBX178M -- CLP    -- Display File Field Description 2 - Build Command
CBX178P -- PNLGRP -- Display File Field Description 2 - Panel Group
CBX178X -- CMD    -- Display File Field Description 2

CBX179  -- RPGLE  -- Work with Data Base Files - CCP
CBX179E -- RPGLE  -- Work with Data Base Files - UIM Exit Program
CBX179H -- PNLGRP -- Work with Data Base Files - Help
CBX179P -- PNLGRP -- Work with Data Base Files - Panel Group
CBX179V -- RPGLE  -- Work with Data Base Files - VCP
CBX179X -- CMD    -- Work with Data Base Files

CBX178M -- CLP    -- Display File Field Description 2 - Build Command
CBX179M -- CLP    -- Work with Data Base Files - Build Command
```

To create all above objects, compile and run CBX178M as well as CBX179M. Compilation instructions are found in the source headers as usual.

Speaking of freeware tools such as Dave McKenzie's UNDEL2, there's also a tool called WRKDBF in circulation. That tool was written by Bill Reger, but has since been withdrawn from distribution. If you have installed Bill's WRKDBF command, be sure to rename it before trying to install the

WRKDBF command presented here -- or alternatively, change the WRKDBF command name to a unique command name (for example WRKDBF2) in the CBX179CL command building CL program, before compiling and running that CL program.

I've also included a slightly adapted version of the previously published Print File Field Description (PRTFFD) command that can be evoked from the DSPFFD2 command's display panel:

```
CBX123  -- RPGLE  -- Print File Field Description - CPP
CBX123H -- PNLGRP -- Print File Field Description - Help
CBX123X -- CMD    -- Print File Field Description

CBX123M -- CLP    -- Print File Field Description - Build Command
```

Again, to create all above objects, compile and run CBX123M.

Dave McKenzie's UNDEL2 utility download sites:

Martin Rowe's dbg400.net:

<http://dbg400.net/cgi-bin/twiki/view/DBG400/UndelVersion2>

Leif Guldbrand's www.think400.dk:

<http://www.think400.dk/downloads.htm>

Previously published related articles:

APIs by Example: Print File Field Description:

<http://www.systeminetwork.com/article.cfm?id=19279>

APIs by Example: Reverse Engineering Database Files and Objects to SQL DDL Statements:

<http://www.systeminetwork.com/article.cfm?id=55321>

APIs by Example: Displaying and Locating a Physical File's Access Paths:

<http://www.systeminetwork.com/article.cfm?id=55516>

This article demonstrates the following DB & File API:

Retrieve Data Base File Description (QDBRTVFD) API:

<http://publib.boulder.ibm.com/infocenter/iserics/v5r4/topic/apis/qdbrtvfd.htm>

You can retrieve the source code for this API example from the following link:

http://www.pentontech.com/IBMContent/Documents/article/55705_345_DbFilesFieldsMore.zip

Source URL: <http://iprodeveloper.com/rpg-programming/apis-example-working-database-files-fields-and-more>