

File Manager for z/OS



# User's Guide and Reference for DB2 Data

*Version 12 Release 1*

**Note!**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 1009.

**First Edition (May 2012)**

This edition applies to Version 12 Release 1 Modification Level 0 of File Manager for z/OS DB2 Component (program number 5655-W68) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this document

This document provides guidance and reference information for users of File Manager for z/OS DB2 Component.

In the rest of this document, the term FM/DB2 refers to File Manager for z/OS DB2 Component.

This document consists of three parts:

### Part 1. Working with FM/DB2

Describes the concepts inherent within FM/DB2, provides step-by-step instructions on how to perform tasks using the FM/DB2 panels under ISPF. The information is presented in a task-based format, with panel and command definitions provided only when they are relevant to the current task. For a complete description of a particular panel or command, you should use the appropriate chapter in **Part 2 FM/DB2 Reference**.

Users who are new to FM/DB2 should find that Part 1 presents the tasks in logical groupings, helping you to use the guide as a learning tool, as well as enabling you to quickly find the specific task instructions you need.

### Part 2. FM/DB2 reference

Provides a lookup reference for FM/DB2 panels and commands. The information is presented in two chapters:

- **FM/DB2 panels and fields:** Lists the FM/DB2 panels, alphabetically by panel title. For each listed panel, cross-references are provided to one or more “parent” panels (the panels from which you can reach the panel in question) and also, if applicable, cross-references to any “child” panels (the panels you can reach from this panel). For several of the panels, there is a definition for each field in the panel including, where applicable, the value ranges that are valid for each field.
- **FM/DB2 commands:** Lists the primary commands you can use with FM/DB2, including a description of their syntax and usage.

Both new and experienced users of FM/DB2 can use Part 2 to quickly look up such things as the exact syntax of a command, or the acceptable values for a field in a panel.

### Part 3. Appendixes

The Appendix is made up of the File Manager DB2 Messages, and provides the full text explanation of all FM/DB2 batch error messages. The support information tells you about IBM Web sites that can help you answer questions and solve problems, followed by notices, bibliography, glossary and index.

File Manager for z/OS contains four “flavors” of File Manager, for working in different environments or with different data formats:

- **DB2 Component** (*described in this document*) for working with DB2® data
- **File Manager “base”** for working with QSAM data sets, VSAM data sets or PDS members
- **IMS Component** for working with IMS™ data
- **FM/CICS** for working with CICS® resources.

## About this document

This document describes only the **DB2 Component**. For more information about the File Manager “base” and IMS Component, see these books:

- *File Manager User's Guide and Reference*, SC19-3674
- *File Manager User's Guide and Reference for IMS Data*, SC19-3676
- *File Manager User's Guide and Reference for CICS*, SC19-3677

---

## Who should use this document

This document is for three kinds of DB2 users:

- Application programmers who need to test and debug programs
- Service support personnel who need to analyze and fix problems
- System administrators and system operators who need to do routine tasks such as moving large amounts of data

This document assumes that you are familiar with DB2 and with using ISPF.

To use FM/DB2 functions in batch jobs, you must already be familiar with JCL.

---

## Releases of DB2 supported

FM/DB2 supports:

- DB2 Version 9
- DB2 Version 10

Where variations exist within FM/DB2 depending on the version of DB2 you are using, these variations are highlighted in this document by indicators that identify the start and end of a section of text. For example:

**Note:** The examples shown in this document were produced using DB2 Version 9. If you are using DB2 Version 10, you may find minor variations in the appearance of FM/DB2 panels.

---

## National characters

File Manager uses the national characters shown in Table 1.

*Table 1. National characters*

Character	Hexadecimal value	Displayed as, in code pages 37 and 500
Dollar sign	X'5B'	\$
Pound sign	X'7B'	#
At sign	X'7C'	@

**Notes:**

1. The dollar sign (\$) and the pound sign (#) have special syntactical meaning in File Manager syntax.
2. The at sign (@) is the default value used for the “Null column input indicator”.
3. In countries using code pages other than 37 and 500:
  - a. The dollar sign (\$), pound sign (#), and at sign (@) as represented on terminal keyboards might generate a different hexadecimal representation, and this might cause an error or unwanted results. For example, in some countries the \$ character might generate a X'4A'.
  - b. The hexadecimal values in Table 1 might display as different characters to those shown.

When you enter File Manager commands in batch or online, use the keyboard characters that correspond to the hexadecimal values shown in Table 1 on page xii.

---

## Prerequisite and related information

FM/DB2 documentation supports the following tasks:

### Evaluating FM/DB2

*File Manager Fact Sheet*, provides an overview of the product to help the business professional decide if FM/DB2 has the functions needed.

### Planning for, installing, customizing, and maintaining FM/DB2

Refer first to the *File Manager Customization Guide*, which might then refer you to the *File Manager Program Directory* (included with the product tape) for some information.

### Using FM/DB2

This document, the *File Manager User's Guide and Reference for DB2 Data*, is a guide to using FM/DB2. When using FM/DB2 under ISPF, you can also refer to the online help.

For information about related products, see the "Bibliography" on page 1013.

---

## How to read syntax diagrams

The syntactical structure of commands described in this document is shown by means of syntax diagrams.

Figure 1 on page xiv shows a sample syntax diagram that includes the various notations used to indicate such things as whether:

- An item is a keyword or a variable.
- An item is required or optional.
- A choice is available.
- A default applies if you do not specify a value.
- You can repeat an item.



## Prerequisite and related information

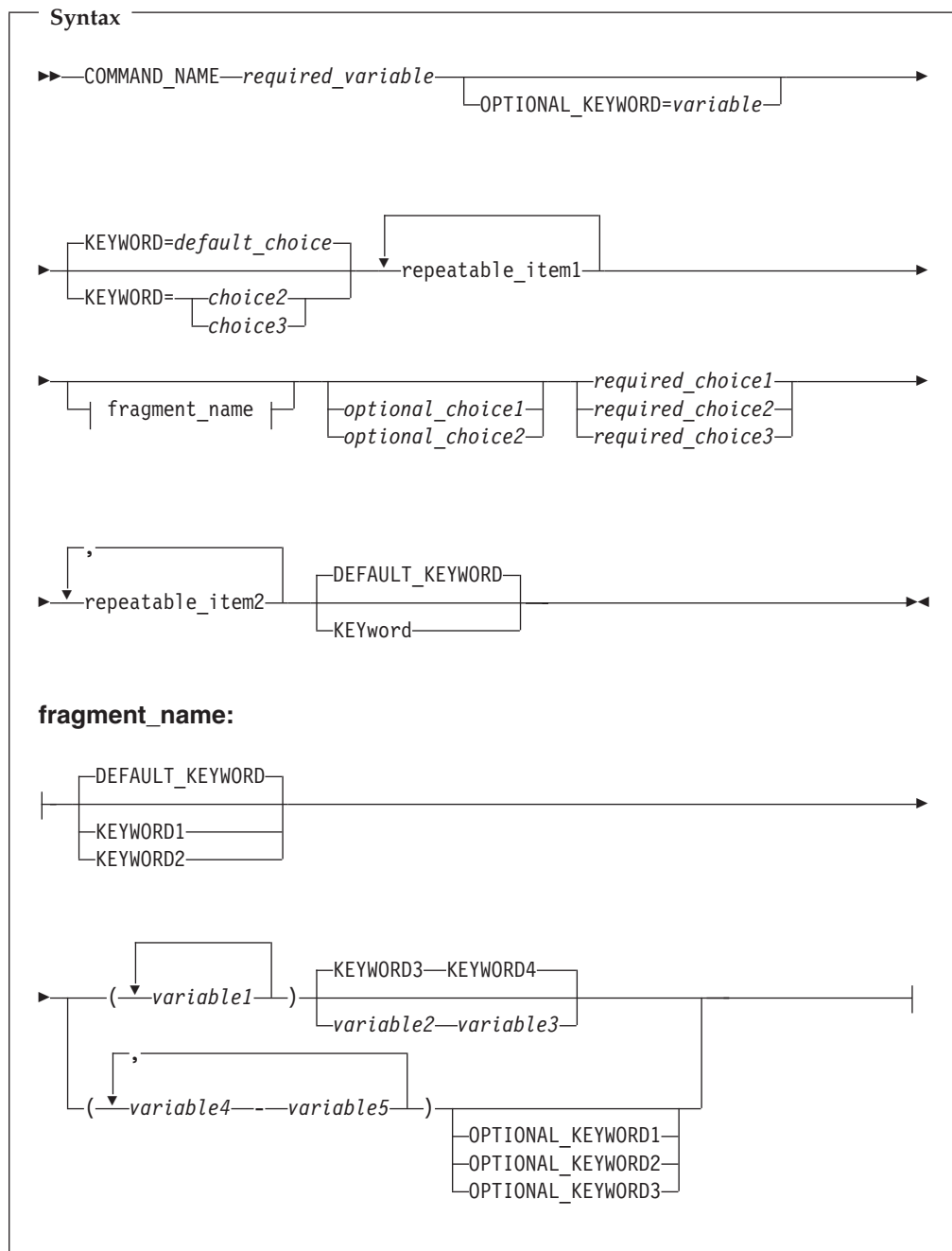


Figure 1. Sample syntax diagram

Here are some tips for reading and understanding syntax diagrams:

### Order of reading

Read the syntax diagrams from left to right, from top to bottom, following the path of the line.

The **▶▶** symbol indicates the beginning of a statement.

The **▶▶** symbol indicates that a statement is continued on the next line.

The ►— symbol indicates that a statement is continued from the previous line.

The —►◄ symbol indicates the end of a statement.

### Keywords

Keywords appear in uppercase letters.

►►—COMMAND\_NAME—►◄

Sometimes you only need to type the first few letters of a keyword, The required part of the keyword appears in uppercase letters.

►►—

DEFAULT\_KEYWORD

—  
—

KEYword

—►◄

In this example, you could type "KEY", "KEYW", "KEYWO", "KEYWOR" or "KEYWORD".

The abbreviated or whole keyword you enter must be spelled exactly as shown.

### Variables

Variables appear in lowercase letters. They represent user-supplied names or values.

►►—*required\_variable*—►◄

### Required items

Required items appear on the horizontal line (the main path).

►►—COMMAND\_NAME—*required\_variable*—►◄

### Optional items

Optional items appear below the main path.

►►—

OPTIONAL\_KEYWORD=variable

—►◄

### Choice of items

If you can choose from two or more items, they appear vertically, in a stack.

If you *must* choose one of the items, one item of the stack appears on the main path.

►►—

*required\_choice1*

  
—

*required\_choice2*

  
—

*required\_choice3*

—►◄

If choosing one of the items is optional, the entire stack appears below the main path.

## Prerequisite and related information



If a default value applies when you do not choose any of the items, the default value appears above the main path.



### Repeatable items

An arrow returning to the left above the main line indicates an item that can be repeated.



If you need to specify a separator character (such as a comma) between repeatable items, the line with the arrow returning to the left shows the separator character you must specify.



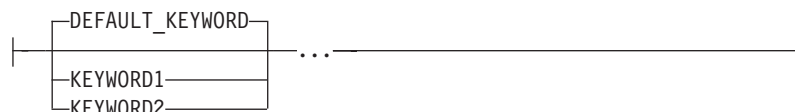
### Fragments

Where it makes the syntax diagram easier to read, a section or *fragment* of the syntax is sometimes shown separately.



⋮

**fragment\_name:**



## Using LookAt to look up message explanations

LookAt is an online facility that lets you look up explanations for most messages you encounter, as well as for some system abends and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can access LookAt from the Internet at: <http://www.ibm.com/eserver/zseries/zos/bkserv/lookat/> or from anywhere in z/OS or z/OS.e where you can access a TSO/E command line (for example, TSO/E prompt, ISPF, z/OS UNIX System Services running OMVS).

The LookAt Web site also features a mobile edition of LookAt for devices such as Pocket PCs, Palm OS, or Linux-based handhelds. So, if you have a handheld device with wireless access and an Internet browser, you can now access LookAt message information from almost anywhere.

To use LookAt as a TSO/E command, you must have LookAt installed on your host system. You can obtain the LookAt code for TSO/E from a disk on your z/OS *Collection* (SK3T-4269) or from the LookAt Web site's **Download** link.

---

## How to send your comments to IBM

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Use one of the following methods to send us your comments:

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2. Use the form on the Web at:  
[www.ibm.com/software/ad/rcf/](http://www.ibm.com/software/ad/rcf/)
3. Mail the comments to the following address:

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Include the following information:

- Your name and address
- Your email address
- Your telephone or fax number
- The publication title and order number:  
FM V12R1 User's Guide and Reference for DB2 Data  
SC19-3675-00
- The topic and page number related to your comment
- The text of your comment.

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## If you have a technical problem

Do not use the feedback methods listed above. Instead, do one of the following:

- Contact your IBM service representative
- Call IBM technical support
- Visit the IBM support portal at <http://www.ibm.com/systems/z/support/>

## Prerequisite and related information



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## Summary of changes

This edition of the document provides information applicable to File Manager Version 12 Release 1.

Changes in this edition include:

- A new version of the SQL Reverse Engineering code (GEN command) which includes full support for DB2 V10 syntax. For more details see “Reverse engineering” on page 259.
- Support for new DB2 V10 timestamp data types. For more details see “Column mapping rules” on page 92.
- The Object List utility shows new DB2 catalog table columns that were added in DB2 version 10. See “Object List Options (option 3.4)” on page 49.
- A new appendix has been added, listing every message that might be issued by File Manager DB2 component. See “Messages” on page 891.
- A number of minor documentation changes, mostly relating to sections describing DB2 version 8 (which is not supported by File Manager version 12).

## Summary of changes

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## Chapter 1. FM/DB2 overview

FM/DB2 provides a comprehensive, user-friendly set of tools for working with DB2 data. These tools include the familiar view, edit, copy and print utilities found in ISPF, enhanced to meet the needs of application developers.

This chapter provides an overview of the types of actions you can perform with FM/DB2 and detailed concept information about templates, a means of viewing DB2 data in FM/DB2.

---

### What you can do with FM/DB2

FM/DB2 is a powerful set of utility functions for editing, browsing, printing, copying, and maintaining DB2 data. For a description of the DB2 data types that FM/DB2 supports, see Chapter 14, “DB2 data types,” on page 367.

It also provides utilities for listing DB2 objects, managing DB2 privileges, generating JCL to run DB2 standalone utilities, exporting and importing DB2 tables to or from QSAM or VSAM data sets, creating data to populate DB2 tables, and prototyping SQL SELECT statements.

FM/DB2 is an ISPF application program. It uses panels that you can use to select options and to specify parameters, commands and program function (F) keys to simplify requests for common functions, and full-screen format for information display and editing. If data does not fit on the screen, ISPF provides scrolling in all four directions.

---

### Templates

FM/DB2 uses *templates* to provide a formatted view of your data, enabling you to view, edit, and manipulate data according to the columns and data types in the table you are working with.

#### What is a template?

An FM/DB2 template is a collection of information that you can use to select and format tables and columns in a DB2 object. If you use an FM/DB2 function that interfaces with non-DB2 data, the corresponding template describes the records and fields in the data set.

When you associate a template with data, you can:

##### **Manipulate columns**

You can select which columns you want to work with, adjust the order in which they are shown, and modify the column headings.

You can select to show leading zeros for numeric columns. (By default, leading zeros for numeric columns are suppressed. For example, 00057 is displayed as 57.)

##### **Map data**

If you are copying, importing, exporting, or loading data, you can “map” how data is transferred from the source to the destination.

## Templates

### Select rows

You can specify *row selection criteria* to restrict the data to the rows you want to work with.

### Create data

If you are creating a new table, or adding new columns when moving data, you can specify *create attributes* that FM/DB2 uses to initialize column values.

If you use an FM/DB2 function that uses a template for a DB2 object, you can select one of the following options:

- Specify the name of an existing template
- Use FM/DB2 to generate a template (using information from the DB2 catalog for the DB2 object)
- Use the template that was last used with the DB2 object
- Use FM/DB2 to generate a template and immediately save the template using a name you specify

#### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

## Where you can use templates

You can use templates to view, browse, edit, print, copy, import, export, create, or load data. The following table lists the panels where you can use templates:

Task	Panel
Browse data	View (option B)
View data	View (option 1)
Edit data	Edit (option 2)
Print data	Print (option 3.1)
Copy data	Copy (option 3.3)
Import data	Import (option 3.6) <sup>1</sup>
Export data	Export (option 3.7) <sup>1</sup>
Create data	Create (option 3.8)
Load data	Utilities (option 3.9), DB2 LOAD utility <sup>1</sup>
Unload data	Utilities (option 3.9), DB2 UNLOAD utilities <sup>1</sup>

#### Note:

1. You can use a template *or* a copybook with these functions. See “Using templates with non-DB2 data” on page 58.

#### RELATED TASKS

Chapter 4, “Viewing and changing DB2 data,” on page 95

“Printing the contents of a DB2 table” on page 263

“Copying data from one DB2 object to another” on page 195

“Copying data from a VSAM or QSAM file” on page 200

“Copying data to a VSAM or QSAM file” on page 223

Chapter 6, “Populating a DB2 table with data,” on page 193

“LOAD utility” on page 290

“UNLOAD (tables)” on page 310

“UNLOAD (table spaces)” on page 316



### RELATED REFERENCES

- "DB2 Browse panel" on page 540
- "DB2 View panel" on page 559
- "DB2 Edit panel" on page 544
- "Print Utility panel" on page 675
- "Copy Utility ("From") panel" on page 430
- "Import Utility ("From") panel" on page 639
- "Export Utility panel" on page 612
- "Data Create Utility panel" on page 533
- "LOAD Utility panel" on page 654
- "UNLOAD Utility (Tables) "From" panel" on page 793
- "UNLOAD Utility (Tables) with LISTDEF panel" on page 795
- "UNLOAD Utility (Table Spaces) panel" on page 790
- "UNLOAD Utility (Table Spaces) with LISTDEF panel" on page 791



---

## Chapter 2. Getting started with FM/DB2

This chapter provides answers to questions such as: "How do I enter and exit the application?", "How do I move around the application?", "How do I get help?", and "What do I need to do before I start working?" .

### RELATED TASKS

"Starting and exiting FM/DB2"

"Selecting the DB2 subsystem when more than one is available" on page 15

"Using the FM/DB2 interface" on page 19

"Getting help" on page 38

"Setting default processing options" on page 43

---

## Starting and exiting FM/DB2

FM/DB2 is an ISPF-developed application and is usually run from within an ISPF session. Exiting from FM/DB2 returns you to your ISPF session.

### RELATED TASKS

"Starting FM/DB2"

"Exiting from FM/DB2" on page 14

## TSO region size

The minimum supported TSO region size for FM/DB2 is 4MB. However, you are less likely to experience storage-related problems when running FM/DB2 if you use a TSO region size of 8MB or more.

If using the GEN prefix command, you will require more than 8MB of storage.

### RELATED TASKS

"Storage considerations" on page 106

"Viewing large tables or views" on page 107

## Starting FM/DB2

How you start FM/DB2 depends on how it has been installed on your system. Typically, FM/DB2 is installed as an option on your z/OS Primary Option Menu:

## Starting and exiting FM/DB2

```
Menu  Utilities  Compilers  Options  Status  Help

z/OS Primary Option Menu

0 Settings      Terminal and user parameters      User ID . : FMNUSER
1 View          Display source data or listings   Time. . . : 15:11
2 Edit          Create or change source data      Terminal. : 3278
3 Utilities     Perform utility functions        Screen. . : 1
4 Foreground    Interactive language processing  Language. : ENGLISH
5 Batch         Submit job for language processing Appl ID . : ISR
6 Command       Enter TSO or Workstation commands  TSO logon : ISPFPROC
7 Dialog Test   Perform dialog testing           TSO prefix: FMNUSER
8 LM Facility   Library administrator functions   System ID : FMD2
9 IBM Products  IBM program development products   MVS acct. : USER
10 SCLM         SW Configuration Library Manager  Release . : ISPF 5.0
11 Workplace    ISPF Object/Action Workplace
12 OS/390 System OS/390 system programmer applications
13 OS/390 User  OS/390 user applications
F File Manager  File Manager z/OS and OS/390
FD FM/DB2 File Manager/DB2

Option ==>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions   F12=Cancel
```

Figure 2. z/OS Primary Option Menu panel showing FM/DB2 option

To start FM/DB2:

1. Select the FM/DB2 option from the z/OS Primary Option Menu.

**Note:** If FM/DB2 is not an option on your menu, ask your systems administrator to explain the startup process used at your site.

When you start FM/DB2, the FM/DB2 Primary Option Menu is shown, with the current version information displayed in a pop-up message box.

```
Process  Options  Help

FM/DB2 (DF72)      Primary Option Menu

0 Settings      Set processing options      User ID . : FMNUSER
1 View          View DB2 object             System ID : FMD2
2 Edit          Edit DB2 table              Appl ID . : FMN2
3 Utilities     Perform utility functions    Version . : 9.1.0
4 SQL           Prototype, execute and analyze SQL Terminal. : 3278
5 DB2I          Start DB2 Interactive        Screen . . : 1
6 Command       Enter and execute a DB2 Command Date . . . : 2008/08/01
X Exit          Terminate FM/DB2            Time . . . : 10:31

DB2 SSID . DF72
OHNLEV

IBM* File Manager for z/OS Version 12 Release 1 DB2 Component
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Command ==> ABOUT
F1=Help      F2=Split      F3=Exit      F4=Expand      F7=Backward  F8=Forward
F9=Swap      F10=Left     F11=Right    F12=Cancel
```

Figure 3. FM/DB2 Primary Option Menu panel with version information

2. Press Enter to close the version window.

## Checking your FM/DB2 version

To display the full version information for FM/DB2, enter VER on the command line of any panel. The current FM/DB2 version number and the PTF number for each FM/DB2 component is displayed in a window. The pop-up also indicates whether or not FM/DB2 is APF-authorized.

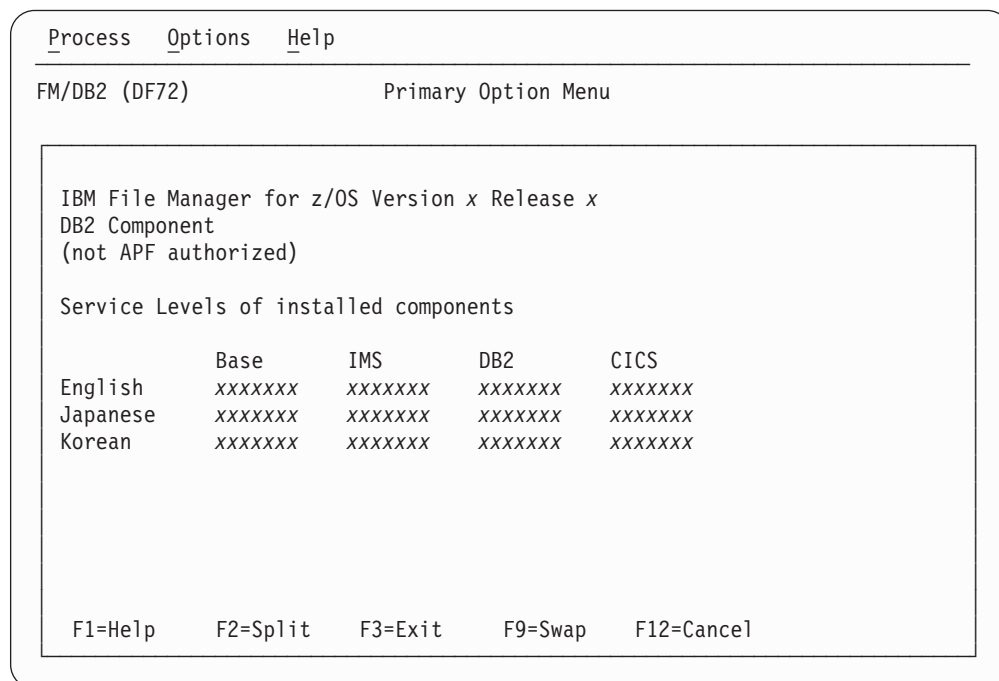


Figure 4. FM/DB2 Primary Option Menu panel with PTF information

An alternative way to display version information is to select **Help> 7. About** from the Action Bar on a panel. The current FM/DB2 version number and the PTF number of the DB2 component is displayed. The pop-up panel also shows the copyright information and any notes from IBM that are shipped with the product.

## Starting and exiting FM/DB2

Process	Options	Help
FM/DB2 (DF72)		Primary Option Menu
0	Settings	Set processing options
1	View	View DB2 object
2		
3		
4	IBM File Manager for z/OS Version x Release x	
5	DB2 Component	
6	PTF level: xxxxxxx	
X	xxxx-xxx (C) Copyright IBM Corporation xxxx, xxxx - All rights reserved Note to US Government Users -- Documentation related to restricted rights -- Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.	
F1=Help    F2=Split    F3=Exit    F9=Swap    F12=Cancel		
Command ==> ABOUT		
F1=Help    F2=Split    F3=Exit    F4=Expand    F7=Backward    F8=Forward		
F9=Swap    F10=Left    F11=Right    F12=Cancel		

### RELATED REFERENCES

“VER primary command” on page 859

“Action bar pull-down menu” on page 371

## Checking which COBOL compiler you're using

FM/DB2 uses the currently loaded COBOL compiler to create a template from a COBOL copybook.

To display details about the current COBOL compiler, enter SHOWCOB on the Command line of any panel. FM/DB2 displays details about the current COBOL compiler in a window.

### RELATED TOPICS

“SHOWCOB primary command” on page 853

## Exiting from FM/DB2

You can exit from FM/DB2 from the Primary Options Menu panel in any of the following ways:

- Press the Exit function key (F3).
- Enter X (or EXIT or END) on the command line.
- Select **Process> Exit FM/DB2** from the Action Bar.

To exit the application from a panel within FM/DB2:

- Enter =X on the command line.

### RELATED REFERENCES

“END primary command” on page 817

“Action bar pull-down menu” on page 371

---

### Selecting the DB2 subsystem when more than one is available

On most panels, FM/DB2 displays the currently connected DB2 subsystem immediately to the right of the product name. For instance, in Figure 5 on page 16, “FM/DB2 (DFA2)” (in the top lefthand corner) shows that the current DB2 subsystem is DFA2.

If your system contains only one active DB2 subsystem, FM/DB2 automatically connects to that subsystem without you having to select it.

If you are working in a system where there is more than one active DB2 subsystem, you can select the subsystem to which you want FM/DB2 to connect by:

- Entering a value in the **DB2 SSID** field on the Primary Option Menu, or
- Entering the SSID command in some FM/DB2 panels.

#### Notes:

1. FM/DB2 can only run on a system that has at least one active DB2 subsystem that uses DB2 Version 9, or DB2 Version 10.
2. The first time you use FM/DB2, if your system contains multiple active DB2 subsystems, FM/DB2 immediately displays the DB2 Subsystem Selection panel from which you can select the DB2 subsystem you want. Otherwise, if there is only one active DB2 system in your environment, the Primary Option Menu is displayed with the DB2 subsystem ID already entered in the **DB2 SSID** field without you having to select it.

#### RELATED TASKS

“Selecting the DB2 subsystem with the DB2 SSID field”

“Selecting the DB2 subsystem by entering the SSID command” on page 17

#### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“DB2 Subsystem Selection panel” on page 553

### Selecting the DB2 subsystem with the DB2 SSID field

When you start FM/DB2, the Primary Option Menu panel is displayed. You can also display this panel by exiting completely from any FM/DB2 panel; that is, by pressing the Exit function key (F3) the required number of times until FM/DB2 returns you to the Primary Option Menu panel.



## Selecting the DB2 subsystem when more than one is available

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2) Primary Option Menu			
0	Settings	Set processing options	User ID . : FMNUSER
1	View	View DB2 object	System ID : MVS8
2	Edit	Edit DB2 table	Appl ID . : FMN2
3	Utilities	Perform utility functions	Version . : 5.1.0
4	SQL	Prototype, execute and analyze SQL	Terminal . : 3278
5	DB2I	Start DB2 Interactive	Screen . : 1
X	Exit	Terminate FM/DB2	Date . . : 2004/09/24
			Time . . : 15:15
			DB2 SSID . DFA2
			SQL ID . . FMNUSER +
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
	F7=Backward	F8=Forward	

Figure 5. Primary Option Menu panel

The **DB2 SSID** field on the Primary Option Menu shows the ID of the DB2 subsystem to which FM/DB2 is currently connected. (The DB2 subsystem is also shown in the top lefthand corner of the panel.) In the example shown in Figure 5, FM/DB2 is connected to the DFA2 subsystem.

To select a DB2 subsystem using the DB2 SSID field, you can:

- Overtyping the ID of DB2 subsystem currently shown in the **DB2 SSID** field with the ID of the active DB2 subsystem you want, and pressing Enter.  
For example, in Figure 5, to change from the current DB2 subsystem to which FM/DB2 is connected (DFA2) to the DB2 subsystem DFB2, overtype DFA2 with DFB2 and press Enter.
- Entering an asterisk (\*), or blanks, in the **DB2 SSID** field and pressing Enter. FM/DB2 displays the DB2 Subsystem Selection panel showing a list of all the DB2 subsystems in your environment from which you can select the DB2 subsystem you want.
- Entering a partial ID, starting or ending with an asterisk (\*), or enclosed within two asterisks, in the **DB2 SSID** field and pressing Enter. FM/DB2 displays the DB2 Subsystem Selection panel showing a restricted list of DB2 subsystems from which you can select the DB2 subsystem you want.

The following examples demonstrate how you can use the (\*) wildcard if specifying a partial DB2 subsystem ID:

DB*	Lists all DB2 subsystems whose ID starts with "DB"
*TST	Lists all DB2 subsystems whose ID ends with "TST"
*2*	Lists all DB2 subsystems whose ID contains "2"

**Note:** To change the DB2 subsystem from a panel other than the Primary Option Menu panel, use the SSID command.

## Selecting the DB2 subsystem when more than one is available

### RELATED TASKS

- “Using the DB2 Subsystem Selection menu” on page 18
- “Selecting the DB2 subsystem by entering the SSID command”

### RELATED REFERENCES

- “Primary Option Menu panel” on page 670
- “DB2 Subsystem Selection panel” on page 553

## Selecting the DB2 subsystem by entering the SSID command

You can change the currently connected DB2 subsystem by using the SSID command (or its synonym, DB2SYS), followed by the name of the DB2 subsystem to which you want to connect.

### Note:

- At the time of installing FM/DB2, the name of this command (or its synonym) may have been customized to something other than SSID (or DB2SYS).

You can verify what the name of the command is by referring to the appropriate Tutorial Help panel:

- From the Primary Option Menu panel, press the Help function key (F1).

FM/DB2 displays the “FM/DB2 Tutorial - Table of Contents” panel.

- Select item **D** (DB2 SSID).

FM/DB2 displays the “FM/DB2 Tutorial - DB2 Subsystem Selection” panel. This panel shows the name of the command (and its synonym) as set when FM/DB2 was installed.

- You can abbreviate the command name to as few as 4 characters.
- In this document, this command is referred to as the SSID command. If some other name was specified at the time of installing FM/DB2 in your environment, substitute that name wherever reference is made to the SSID command in this document.

For example, to change to the DB27 subsystem, enter the command:

SSID DB27

When you use the SSID command, be aware of the following restrictions:

- The name you specify must be an active DB2 subsystem.
- The name you specify must not contain an asterisk (\*) or wildcard.
- You can only use the SSID command from certain panels:
  - Menu panels
  - Most function entry panels
  - Option panels (selected by option 0)
- Once an FM/DB2 dialog has started, you cannot use the SSID command to change the currently connected DB2 subsystem. If you attempt to do so, FM/DB2 issues a “Command not active” message.

To display a list of all the DB2 subsystems in your environment, use the **DB2 SSID** field on the Primary Option Menu panel.

### RELATED TASKS

- “Using the DB2 Subsystem Selection menu” on page 18
- “Selecting the DB2 subsystem with the DB2 SSID field” on page 15

## Selecting the DB2 subsystem when more than one is available

“Accessing Tutorial Help” on page 39

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

## Using the DB2 Subsystem Selection menu

You use the DB2 Subsystem Selection menu to select the DB2 subsystem to which you want FM/DB2 to connect. It shows a list of the DB2 subsystems in your environment and is displayed:

- The first time you use FM/DB2 (providing your system contains multiple active DB2 subsystems),
- If you enter any of the following in the **DB2 SSID** field on the Primary Option Menu:
  - An asterisk (\*)
  - Spaces
  - A partial ID, starting or ending with an asterisk (\*), or both

If you enter a partial ID in the **DB2 SSID** field on the Primary Option Menu, the list of DB2 subsystems is restricted accordingly.

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“DB2 Subsystem Selection panel” on page 553

## Selecting a subsystem

To select a DB2 subsystem from the DB2 Subsystem Selection menu:

1. Enter S (or /) in the **Sel** column for the DB2 subsystem you want.  
The status of the subsystem you select must be "ACTIVE" or "GROUP", and the subsystem must have been defined in the FM/DB2 installation module. For DB2 systems that do not meet these criteria, the selection field is disabled.
2. Press Enter.  
FM/DB2 displays the Primary Option Menu. The ID of the subsystem you selected is displayed in the **DB2 SSID** field showing that FM/DB2 is now connected to that DB2 subsystem.

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“DB2 Subsystem Selection panel” on page 553

## Refreshing the list of DB2 subsystems

To refresh the list of DB2 subsystems on the DB2 Subsystem Selection menu, use the Refresh (F5) function key or enter the primary command REFRESH.

The refreshed list of DB2 subsystems reflects any changes that have occurred since you last displayed the list (for example, the status of each DB2 subsystem).

### RELATED REFERENCES

“REFRESH primary command” on page 846

“DB2 Subsystem Selection panel” on page 553

## Restricting the list of DB2 subsystems

You can restrict the list of DB2 subsystems shown on the DB2 Subsystem Selection menu by using the SHOW primary command or the Show function key (F6).

Either of the following commands lists all DB2 subsystems:

## Selecting the DB2 subsystem when more than one is available

SHOW \*

SHOW

The following examples demonstrate how you can use the SHOW primary command to restrict the list of DB2 subsystems shown on the DB2 Subsystem Selection menu using the asterisk (\*) wildcard and a partial DB2 subsystem ID:

**SHOW MM\*** Restricts the list to DB2 subsystems with an ID starting with "MM"

**SHOW \*PBJ** Restricts the list to DB2 subsystems with an ID ending with "PBJ"

**SHOW \*V\*** Restricts the list to DB2 subsystems with an ID containing "V"

The Show function key (F6) works in the same way as the SHOW command, except that it uses the contents of the command line as the selection criteria. For example:

- If the command line is blank and you press the Show function key (F6), FM/DB2 lists all DB2 subsystems. (You would get the same result if the command line contained an asterisk (\*)).
- If you type DBT\* on the command line and press the Show function key (F6), FM/DB2 lists all DB2 subsystems whose ID begins with "DBT".
- If you type \*26 on the command line and press the Show function key (F6), FM/DB2 lists all DB2 subsystems whose ID ends with "26".
- If you type \*AB\* on the command line and press the Show function key (F6), FM/DB2 lists all DB2 subsystems whose ID contains "AB".

### RELATED REFERENCES

"DB2 Subsystem Selection panel" on page 553

"SHOW primary command" on page 852

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## Using the FM/DB2 interface

The FM/DB2 interface is based upon the ISPF model. Tasks are performed by processing a function, together with its applicable parameters. Panels provide a user-friendly way of selecting a function and supplying the parameter information. Some functions can be processed in your choice of "foreground" or "batch" mode. In foreground mode, the selected function is processed immediately and any results are returned to you on screen or directed to print outputs, as dictated by your default settings. In batch mode, JCL is generated from the panel information, and then presented to you for editing. You can modify this code and submit it to a processing queue.

This section provides instructions on how to navigate to panels within FM/DB2 and how to specify common panel information.

### Navigating in FM/DB2

You navigate around FM/DB2 panels in the same way as any other panels under ISPF. That is, you launch processing panels from menu panels, by entering the appropriate menu option number on the command line. FM/DB2 uses a Primary Options Menu panel to provide access to processing panels that are related to a particular function or group of functions. In some cases, an option on the Primary Options menu leads to another menu panel, from which you can select the required processing panel.

To access a panel, choose one of the following methods:

## Using the FM/DB2 interface

- Type the menu option number on the Command line and press Enter. Repeat for each nested menu until the required processing panel is displayed.
- From the Primary Option Menu, type the complete menu path to the required panel, separating each menu level with a period, then press Enter. For example, entering 3.4 takes you directly to the Object List Utility panel.
- Use "point-and-shoot" for fields on menu panels. To use this facility, place the cursor on the name of the menu option that is required, and press Enter.

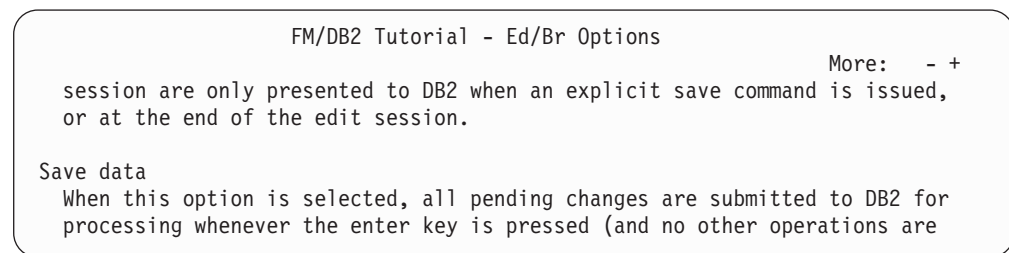
**Note:** ISPF provides an "=" parameter that you can specify before an option selection. For example, =3.4. When supported, the "=" parameter enables direct navigation to the specified menu option from another unrelated option within an ISPF application.

The "=" parameter is not supported by FM/DB2.

To exit from a panel, choose one of the following methods:

- Press the Exit function key (F3).
- Type X on the command line and press Enter.
- Type END on the command line and press Enter.

Many FM/DB2 panels have more information than can be seen in a single screen, particularly when you are running in 80x24 display. In this case, a "More" indicator is displayed near the top right corner of the panel with a plus sign (+), a minus sign (-), or both.



*Figure 6. Example panel showing "More" message*

A plus sign (+) adjacent to the word "More" indicates more information is available on a following panel. Press the NxtPage function key (F11) to display the next information panel.

A minus sign (-) adjacent to the word "More" indicates more information is available on a previous panel. Press the PrvPage function key (F10) to display the previous information panel.

To scroll down the panel, choose one of these methods:

- Press the Forward function key (F8). This scrolls down one screenful of lines.
- Enter FORWARD or DOWN on the command line. These commands scroll down one screenful of lines.
- Enter BOTTOM on the command line. This takes you to the bottom of the panel.

To scroll up the panel, choose one of these methods:

- Press the Backward function key (F7). This scrolls up one screenful of lines.
- Enter BACKWARD or UP on the command line. These commands scroll up one screenful of lines.

- Enter TOP on the command line. This takes you to the beginning of the panel.

## RELATED REFERENCES

- “Scrolling” on page 125
- “BACKWARD primary command” on page 804
- “BOTTOM primary command” on page 805
- “DOWN primary command” on page 815
- “END primary command” on page 817
- “FORWARD primary command” on page 831
- “TOP primary command” on page 856
- “UP primary command” on page 858
- “Screen size” on page 23

## FM/DB2 panel features

This section describes the general features of FM/DB2 panels.

Figure 7 shows a typical FM/DB2 panel.

Process		Options		Utilities		Help		A	
FM/DB2 (DFA2)				Table Edit				B	
TABLE FMUSER.EMP								0 of 42	
								Format TABL	
EMPNO		FIRSTNME		MIDINIT		LASTNAME		WORKDEPT	
#1		#2		#3		#4		#5	
CH(6)		VARCHAR(12)		CH(1)		VARCHAR(15)		CH(3)	
PH(4)		DATE							
PU-->		<---+-----1-->		-		<---+-----1----->		<-NF	
000001		000010		CHRISTINE<		I		HAAS<	
000002		000020		MICHAEL<		L		THOMPSON<	
000003		000030		SALLY<		A		KWAN<	
000004		000050		JOHN<		B		GEYER<	
000005		000060		IRVING<		F		STERN<	
000006		000070		EVA<		D		PULASKI<	
000007		000090		EILEEN<		W		HENDERSON<	
000008		000100		THEODORE<		Q		SPENSER<	
000009		000110		VINCENZO<		G		LUCCHESI<	
000010		000120		SEAN<		H		O'CONNELL<	
000011		000130		DOLORES<		M		QUINTANA<	
000012		000140		HEATHER<		A		NICHOLLS<	
000013		000150		BRUCE<		A		ADAMSON<	
Command ==>				E				Scroll PAGE	
F1=Help		F2=Zoom		F3=Exit		F4=CRetrieve		F5=RFind	
F7=Up		F8=Down		F9=Swap		F10=Left		F11=Right	
								F12=Cancel	
								F	

Figure 7. Typical FM/DB2 panel

In general, the following lines are displayed on FM/DB2 panels:

### **A** Action bar

Provides access to pull-down menus that give you a fast way to move around the product.

**Note:** The action bar is not displayed if you select Start DB2 Interactive (option 5).

### **B** Panel title

Identifies the function being carried out.

### **C** Row count information(editor sessions only)

Shows row number (of top row currently displayed) and total number of rows fetched for the current FM/DB2 editor session.

### **D** Panel body

Shows information pertaining to the panel.

### **E** Command line

Use to enter a command or, on a menu, to enter either a command or an option. The command can be any ISPF command or valid FM/DB2 primary command for the FM/DB2 function being carried out.

To change the position of the command line (the bottom or top of the panel, see the *ISPF User's Guide*.

### **F** Function keys

Displays the settings for the function keys (also known as "Programmable Function" or "PF" keys). For most FM/DB2 panels, these settings are the ISPF function key values. However, for some FM/DB2 panels, these settings are preset to correspond with the needed values for the FM/DB2 function.

For information about default function key values, and how to define your own function key values, see the *ISPF User's Guide*.

## Selecting an item from the action bar

To select an item from the action bar:

1. Move the cursor to the item on the action bar; for example, **Options** (see Figure 8).
2. Press Enter. FM/DB2 displays a pull-down menu with choices relating to the action bar item you selected.
3. Select a choice from the pull-down menu. Either:
  - Type the pull-down menu selection number (for example, 6 for **Print settings**), and press Enter, or
  - Move the cursor with the Up or Down arrow keys to the required choice, and press Enter.

An asterisk in front of a choice on a menu indicates that the choice is not available for the current panel.

Process	Options	Utilities	Help
FM/DB2 (	1. Print settings		Top of 42
42 rows	2. FM/DB2 system options		Format TABL
E	3. Job card specifications		WORKDEPT PHONENO HIREDATE
#	4. Compiler language selection	#5 #6 #7	
C	5. COBOL compiler specifications	CH(3) CH(4) DATE	
P	6. HLASM compiler specifications	<-NF <--> <---+---	
***** *	7. PL/I compiler specifications		
000001 0	8. Temporary Data Set Allocations	A00 3978 01.01.1965	
000002 0	9. Output Data Set Allocations	B01 3476 10.10.1973	
000003 0	10. ISPF settings	C01 4738 05.04.1975	
000004 0	11. Editor options	E01 6789 17.08.1949	
000005 0	12. Copy utility options	D11 6423 14.09.1973	
000006 0	13. Object list utility options	D21 7831 30.09.1980	
000007 0	14. Export utility options	E11 5498 15.08.1970	
000008 0	15. DB2 LOAD utility options	E21 0972 19.06.1980	
000009 0	16. DB2 Utility LISTDEF options	A00 3490 16.05.1958	
000010 0	17. DB2 Utility OPTIONS options	A00 2167 05.12.1963	
000011 0	18. DB2 Utility TEMPLATE options	C01 4578 28.07.1971	
000012 0	19. DB2 Unload utility options	C01 1793 15.12.1976	
Command			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
		F5=RFind	F6=RChange
		F11=Right	F12=Cancel

Figure 8. Action bar menu



## RELATED REFERENCES

“Action bar pull-down menu” on page 371

## Screen size

FM/DB2 is designed to handle screen sizes larger than 24 x 80 characters.

For information about ISPF settings affecting terminal characteristics, see the *ISPF User's Guide*.

## Scrollable input and display fields for long names

FM/DB2 uses scrollable fields on FM/DB2 panels to allow you to input and view values longer than the field length.

"There are two types of scrollable fields on FM/DB2 panels:

- |                |   |
|----------------|---|
| Input fields   | The fields on FM/DB2 panels where you can <i>enter</i> information, such as the name of an owner (or creator), the name of a DB2 object, or the name of a DB2 column. |
| Display fields | The fields on FM/DB2 panels that <i>display</i> information as a result of some action you have taken.  |

"The following two sections describe how to work with both types of scrollable fields."

### Working with scrollable input fields

On panels where you can enter the name of:

- The owner (or creator),
- A DB2 object, or
- A column

FM/DB2 provides scrollable input fields that allow you to enter values longer than length of the displayed entry field.

You can recognise a scrollable field by the presence of one of the following adjacent to the end of the entry field:

- + Plus sign. Indicates the field is scrollable to the right
- Minus sign. Indicates the field is scrollable to the left
- +- Plus sign and minus sign. Indicates the field is scrollable to the right or left

If the length of the input field displayed on the panel is insufficient for the value you want to enter, perform one of these actions:

- Progressively scroll to the right as you enter the value with the Right function key (F11) or by entering the RIGHT primary command (with the cursor positioned within the entry field),
- Press the Expand function key (F4), or enter the EXPAND primary command, to display a window that allows you to enter the full length of the value

Figure 9 on page 24 shows the format of the DB2 View panel. The “+” symbol adjacent to the **Owner** and the **Name** input fields indicates that both are scrollable fields.

## Scrollable input and display fields for long names

Process	Options	Utilities	Help
FM/DB2 (DFA2)		DB2 View	
Specify the DB2 Object:			
Location . . . . .	_____	Database . . . . .	_____ (optional)
Owner . . . . .	_____	Table space . . . . .	_____ (optional)
Name . . . . .	_____		_____ +
Row count . . . . .	100	Number of rows to browse	
Template:			
Data set name . . . . .	'FMNUSER.TEMPLATE'		
Member . . . . .	SALARY		
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	- Edit options		
- 2. Previous	- Edit template		
3. Generate from table	- Re-edit template		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F8=Forward	F9=Swap	F10=Left	F11=Right
			F5=Actions
			F7=Backward
			F12=Cancel

Figure 9. DB2 View panel: format displayed when connected to a DB2 V8 system

The **Owner** input field displayed on the panel allows for up to 16 characters to be entered. To enter the name of an owner that is longer than 16 characters, you must utilize the scrolling or expand capabilities of the **Owner** input field.

For example, to enter the 21-character name "HANSCHRISTIANANDERSON", you can perform either of these actions:

- Type the first 16 characters of the name (HANSCHRISTIANAND) in the **Owner** field, use the left arrow key (←) to position the cursor back in the **Owner** input field, press the Right function key (F11) to scroll right, and then type the remainder of the name (ERSON) in the **Owner** field,
- Press the Expand function key (F4), or enter the EXPAND primary command, to display a window that allows you to enter the full name, and then press the Exit function key (F3) to return to the DB2 View panel.

Figure 10 on page 25 shows the window for the Owner field with the full name entered.

## Scrollable input and display fields for long names

FMN2ECRE+0 Line 1 of 2

HANSCHRISTIANANDERSON

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F5=Rfind F6=Rchange F7=Up  
F8=Down F9=Swap F10=Left F11=Right F12=Cancel

Figure 10. Window when entering a long input name

When you press the Exit function key (F3) to return to the DB2 View panel, the **Owner** input field shows the first 16 characters of the name you entered:

Specify the DB2 Object:

Location . . . . . Database . . . . . (optional)  
Owner . . . . . HANSCHRISTIANAND + Table space . . . . . (optional)  
Name . . . . . +

To see the rest of the name in the **Owner** input field, scroll right by either pressing the Right function key (F11) or entering the RIGHT primary command (ensuring the cursor is positioned within the **Owner** input field):

Specify the DB2 Object:

Location . . . . . Database . . . . . (optional)  
Owner . . . . . ERSON + Table space . . . . . (optional)  
Name . . . . . +

**Deleting data in scrollable input fields:** If you want to delete all the data in a field that is displayed as a scrollable input field, take care to ensure that you do, in fact, delete all the data (and not just the displayed data).

If you use the field delete key combination to delete data, FM/DB2 deletes only the data that is currently displayed. If the field contains more data than is displayed, the undisplayed data is left undeleted.

## Scrollable input and display fields for long names

It is recommended that, before deleting data in a field that is displayed as a scrollable field, you first display the entire contents of the field by pressing the Expand function key (F4) or entering the EXPAND primary command. You can then use the field delete key combination to delete all data in the field at once.

### Working with scrollable display fields

Many FM/DB2 panels show data displayed in scrollable fields. FM/DB2 uses such fields where the length of the field containing the data to be displayed is longer than the field displayed on the panel.

You can recognise a scrollable field by the presence of one of the following adjacent to the end of the display field:

- + Plus sign. Indicates the field is scrollable to the right
- Minus sign. Indicates the field is scrollable to the left
- + - Plus sign and minus sign. Indicates the field is scrollable to the right or left

If the data to be displayed is longer than the length of the display field on the panel, you can view the rest of the data by performing either of these actions:

- Progressively scrolling to the right by pressing the Right function key (F11) or by entering the RIGHT primary command (with the cursor positioned within the display field),
- Pressing the Expand function key (F4) or entering the EXPAND primary command to display a window that allows you to view the entire contents of the field.

Figure 11 on page 27 shows the Table Details panel which includes a number of scrollable display fields (those with a “+” symbol adjacent to the end of the field: **Table owner**, **Table name**, **Created by**, **Created**, and **Altered**). Scrollable display fields indicate that, possibly, not all of the data held in the field is being displayed.

**Note:** The presence of a “+” symbol indicates that the field is scrollable and *may* contain more data than is currently being displayed. It does not necessarily mean that more data exists than is currently being shown.

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Table Details		
			More: +
Details about table (label) : KPS8610L01234567890123456789012345678901234567			
General Data:			
Table owner . . . .	: KPS8610L0	+ Table name . . . .	: DUMMY_TABLE_WI +
Created by . . . .	: KEISTEW	+ Database name . . .	: DSND804
Table space name .	: DUMMYRTA	DB ID for database :	4
Object ID for table	: 3	Primary key OBID .	: N/A
Maximum row length	: 69	Primary key columns	: N/A
Number of columns .	: 4	Edit procedure name	: N/A
Validation proc. .	: N/A	Check pending flag	: No
Parent relations .	: 0	Check constraints .	: None
Child relations . .	: 0	Encoding scheme . .	: E - EBCDIC
Auditing . . . . .	: AUDIT NONE	Status . . . . .	: No primary key
Data capture . . .	: No	Created . . . . .	: 2004-05-10-11. +
Restrict on DROP .	: No	Altered . . . . .	: 2004-05-10-11. +
Release created . .	: L	Dep. query tables .	: 0
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F8=Forward	F9=Swap	F10=Left	F11=Right
			F5=Actions
			F7=Backward
			F12=Cancel

Figure 11. Table Details panel: example showing scrollable fields

For example, to see more of the data in the **Created** display field (in the bottom righthand part of the Table Details panel), you can perform either of these actions:

- Scroll right by either pressing the Right function key (F11) or entering the RIGHT primary command (ensuring the cursor is positioned within the **Created** field).

The **Created** display field now shows more data:

:		
:	Data capture . . . .	: No
:	Created . . . . .	: 1.40.08.268623 -
:		

Note that the scroll symbol has changed from a “+” to a “-”, indicating that, in this case, you have scrolled to end of the field.

- Press the Expand function key (F4) or enter the EXPAND primary command to display a window that shows the entire contents of the **Created** display field:

## Scrollable input and display fields for long names

```
CREATEDT+0 Line 1 of 1
2004-09-24-11.40.08.268623

Command ==> Scroll ==> PAGE
F1=Help    F2=Split  F3=Exit    F5=Rfind   F6=Rchange F7=Up
F8=Down    F9=Swap   F10=Left   F11=Right  F12=Cancel
```

Figure 12. Window showing entire contents of display field

## Selecting options on FM/DB2 panels

There are several FM/DB2 panels, such as the DB2 View panel shown in Figure 13, where you can select one or more options for the FM/DB2 function you are using.

, \"A\"lways to select option' with options: Edit options, Edit template, and Re-edit template. At the bottom, there is a command line 'Command ==>' and a scroll line 'Scroll ==> PAGE'. Below these are function keys: F1=Help, F2=Split, F3=Exit, F4=Expand, F5=Actions, F7=Backward, F8=Forward, F9=Swap, F10=Left, F11=Right, and F12=Cancel."/>

```
Process Options Utilities Help
FM/DB2 (DFA2) DB2 View

Specify the DB2 Object:
Location . . . . . Database . . . . . (optional)
Owner . . . . . FMNUSER + Table space . . . . . (optional)
Name . . . . . EMP +

Template:
Data set name . . . . .
Member . . . . .

Processing Options:
Template usage
A 1 1. Above
2. Previous
3. Generate from table
4. Generate/Replace

Enter \"/>, \"A\"lways to select option
Edit options B
Edit template
Re-edit template

Command ==> Scroll ==> PAGE
F1=Help    F2=Split  F3=Exit    F4=Expand   F5=Actions  F7=Backward
F8=Forward  F9=Swap   F10=Left   F11=Right   F12=Cancel
```

Figure 13. FM/DB2 panel showing selectable options

The options on FM/DB2 panels are displayed in two different formats:

- **A** A list of numbered options in the form of a menu.  
To select one of these options, type the option number in the entry field provided. For example, in the DB2 View panel shown in Figure 13, to select **Previous**, type 2.
- **B** One or more options that you can select or deselect.

To select one of these options for the current session of the FM/DB2 function only, type a “/” in the entry field provided. To deselect the option, type a space in the entry field.

If the panel shows you can select the option by entering a “/” or an “A” (such as the DB2 View panel):

- To select an option for the current session of the FM/DB2 function only, type a “/”.
- To retain this option as selected from one session of the FM/DB2 function to the next, type an “A”. Use this selection character if you want FM/DB2 to *always* select this option before continuing processing the FM/DB2 function.

For example, if you always want to edit the template before viewing data, select **Edit template** on the DB2 View panel using the selection character “A”.

You must select all the required options before you press Enter.

### RELATED REFERENCES

“DB2 View panel” on page 559

## Specifying a DB2 object name

When you use any of the FM/DB2 functions listed below, you specify the name of the DB2 table or view you want to work with in the same way.

- View (option 1)
- Edit (option 2)
- Print (option 3.1)
- Copy (option 3.3)
- Import (option 3.6)
- Export (option 3.7)
- Create (option 3.8)
- Prototyping: Basic (option 4.1)
- Browse (B command on Primary Option Menu panel, or B prefix command against an object in a list of DB2 objects)

Figure 14 on page 30 shows a typical panel containing the entry fields for specifying a DB2 object,



## Scrollable input and display fields for long names

Process		Options		Utilities		Help	
FM/DB2 (DFA2)				Print Utility			
DB2 Object:							
<b>A</b>	Location	.....		<b>D</b>	Database	..... (optional)	
<b>B</b>	Owner	..... DSN8610		<b>E</b>	Table space	..... (optional)	
<b>C</b>	Name	..... EMP					
Row count		..... ALL		Number of rows to print			
DB2 Template:							
Data set name		.....					
Member		.....					
Processing Options:							
Print Mode		Template usage		Enter "/", "A" always to select			
1. Table		1. Above		- Edit template			
2. Single		2. Previous		- Batch execution			
		3. Generate from table		- Use uncommitted read			
		4. Generate/Replace		- Print HEX representation			
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=Expand	F5=Actions	F7=Backward		
F8=Forward	F9=Swap	F10=Left	F11=Right	F12=Cancel			

Figure 14. Print utility panel

The panels for each of the preceding FM/DB2 functions contain the following entry fields, all of which are optional apart from **Name**:

### **A** Location

The location of the table or view.

If the table or view that you want to work with is at your current location, leave this field blank. Otherwise, type:

- The full name of the remote location
- An asterisk (\*) to display all available remote locations, or
- A pattern using wildcard characters

If you specify an asterisk on its own or a pattern, FM/DB2 displays a selection list showing the locations that match the input specification. To select the location you want, type S against the required entry and press Enter. The location selection list is not available unless access to certain DB2 catalog tables has been granted to FM/DB2 users. When the access is not available, you can still access a remote DB2 system by specifying the exact location name.

When you enter a value in this field, synonym object names are not recognized and are not included in the selection list.

It is also possible to specify the location of a DB2 system using:

- The DB2 subsystem ID
- A location nickname defined for the DB2 system

**Note:** In what follows, the use of either the DB2 subsystem ID, or a location nickname, is referred to as an *alternative location reference*.

In order to be able to use these alternatives, the systems programmer must have defined the location value and location nickname in the FMN2SSDM macro definition for each DB2 system (FMN2POPT module). You can check whether a location and location nickname have been defined by selecting **About DB2** from the Help pull-down menu.

Process	Options	Utilities	Help
FM/DB2 (DFE2)		Copy Utility	
From DB2 Object:			
		DB2 Connection Information	
		DB2 Subsystem . . . : DFE2 SQLID . . . . . : PERTHAP Description . . . : DB2 Version 9.1 - Development system Release . . . . . : 0915 FM/DB2 Plan names . : FMN2PLNA : FMN2GENA Attach facility . . : CAF Auditing . . . . . : SAF-RULE CONTROLLED Location . . . . . : QXPMD2DFE2 Location nickname . : V9DEV DECFLOAT Round mode : ROUND Half Even	
		F1=Help    F2=Split    F3=Exit    F4=Expand    F9=Swap    F12=Cancel	
Command ==>			
F1=Help    F2=Split    F3=Exit    F4=Expand    F7=Backward    F8=Forward F9=Swap    F10=Left    F11=Right    F12=CanCommand ==> D2SSCI			

If a location value has been specified, you can use the DB2 subsystem ID (for example, DFE2) as an alternative to the actual location name. If location and location nickname values have been specified, you can use the location nickname (for example, V9DEV) as an alternative to the actual location name.

You cannot use wildcards when specifying an alternative location reference. When you specify an alternative location reference, the actual location appears in any location reference displayed by FM/DB2; that is, in the DB2 object name shown in an FM/DB2 editor session. Similarly, any DB2 object name specified in a DB2 batch job is the actual location name. Specifying an alternative location reference in an FM/DB2 batch job is not supported.

You can only access remote locations that have been defined to your local DB2 subsystem.

### **B** Owner

The authorization ID of the owner of the table, view, or alias.

If you leave this field blank, FM/DB2 uses the current SQL ID. Otherwise, type the full name of the owner, an asterisk (\*) to match any owner, or a pattern using wildcard characters.

To specify a synonym in the object name field, either leave this field blank, or specify a generic name that includes the current SQLID, or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the table space, database, or location fields are non-blank.

**Note:** DB2 alias names are recognised. DB2 synonyms are not recognised.

### **C** Name

The name of the DB2 object.

This entry field is mandatory. Type the full name of the DB2 object, an asterisk (\*) to display the names of all available objects, or a pattern using wildcard characters.

## Scrollable input and display fields for long names

To specify a synonym in this field, type the name of the synonym and ensure that the owner field is either blank, a generic name that includes the current SQLID, or the current SQLID. Synonyms are not recognized or included in the table selection list if any of the table space, database, or location fields are non-blank.

### **D** Database

The name of the database to which you want to restrict your selection.

Leave this field blank if you do not want to confine the selection to specific databases. Otherwise, type the full name of the database, an asterisk (\*) to match any database, or a pattern using wildcard characters.

When you enter a value in this field, synonym names are not recognized or included in the selection list.

### **E** Table space

The name of the table space to which you want to restrict your selection.

Leave this field blank if you do not want to confine the selection to specific table spaces. Otherwise, type the full name of the table space, an asterisk (\*) to match any table space, or a pattern using wildcard characters.

When you enter a value in this field, synonym names are not recognized or included in the selection list.

If you specify an asterisk (\*) or a pattern in one or more of the preceding entry fields (**Owner**, **Name**, **Database**, **Table space**), FM/DB2 displays a selection list showing the DB2 tables and views that match *all* the selection criteria entered in these fields. The selection list may also include synonyms entries under circumstances discussed above.

To select the table, view, or synonym you want, type S in the selection column next to the required entry.

For example, say you specified \_\_DB2 in the **Owner** entry field, \*EMP\* in the **Name** entry field, and FM\* in the **Database** entry field. FM/DB2 displays a selection list of DB2 tables and views where:

- The name of the owner is five characters long, with "DB2" as the last three characters,
- The name of the DB2 table or view contains the characters "EMP", and
- The name of the database starts with "FM".

To select, say, the view VEMP, type S in the selection column next to that entry.

#### RELATED TASKS

"Using an asterisk (\*) or a pattern in entry fields"

#### RELATED REFERENCES

"Table/View/Alias Selection panel" on page 775

"DB2 Location Selection panel" on page 549

## Using an asterisk (\*) or a pattern in entry fields

For entry fields on FM/DB2 panels where you can enter an asterisk (\*) or wildcards, you can use:

- An asterisk (\*) on its own to match all values, or
- A pattern using wildcard characters to select all objects that match the pattern.

## Scrollable input and display fields for long names

In either case, FM/DB2 displays a selection list. To select the listed item you want, type S against the required entry and press Enter.

You can specify a pattern using the following characters:

**asterisk (\*) in combination with one or more other wildcard characters**

Represents a string of zero or more characters. Acts the same as a percent sign (%).

**percent sign (%)**

Represents a string of zero or more characters. Acts the same as an asterisk (\*).

**underscore (\_)**

Represents any single character, including a trailing blank.

**Other characters**

Any other characters that are valid for the entry field.

The following examples show how various patterns work if used to select entries from the following list:

- AGE
- AGREE
- GUM
- IGLOO
- MAN
- MANE
- MANY
- MANAGE
- MANAGES

**Pattern**

**\*AGE\***

**MAN\_**

**MANAGE%**

**\_G\***

**%G\_\_**

**Entries selected**

AGE, MANAGE, and MANAGES

MAN, MANE, and MANY

MANAGE and MANAGES

AGE, AGREE, and IGLOO

AGE, MANAGE, and MANAGES

## Specifying the SQLID

You can specify the SQLID to be used as part of the connection to DB2 by typing the required value in the **SQL ID** field on the FM/DB2 Primary Option Menu panel. The default is your TSO logonid.

You cannot change the SQLID value until FM/DB2 is successfully connected to a DB2 system.

You require authorization to change the SQLID value to something other than your TSO logonid. See your DB2 systems administrator if you require this capability.

You can also change the SQLID value dynamically by using the SQLID primary command.

You can determine the current value for the SQLID by selecting "About DB2" from the Help pull-down menu.

### RELATED REFERENCES

"Primary Option Menu panel" on page 670

"SQLID primary command" on page 855

### Specifying a data set and a member name

Some FM/DB2 panels require you to specify the data set that you wish to use for the current process. If the data set is a PDS, a CA-Panvalet library, or a library accessed using the Library Management System Exit, you also must enter the member name. These panels are collectively referred to as Entry panels.

To specify your data set on any entry panel:

1. In the **Data set name** field, enter a fully-qualified data set name or a name pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated Member field must be empty.

**Note:** In the case of a copybook, this can be the name of a CA-Panvalet library or the name of a library accessed using the Library Management System Exit.

If you do not enclose the data set name in quotes, then the TSO prefix for your user ID is used as the high-level qualifier.

If you enter a pattern, when the Entry panel is processed FM/DB2 displays a list of the data sets that match the pattern.

Patterns can contain a percent sign (%) to represent a single character, and an asterisk (\*) to represent any number of characters within one qualifier. Two asterisks (\*\*) represent any number of characters within any number of qualifiers.

For performance reasons, you should qualify the data set name as much as you can.

2. If you specified the name of a partitioned data set (PDS), the name of a CA-Panvalet library, or the name of a library accessed using the Library Management System Exit, in the **Data set name** field (without including a member name or name pattern in parenthesis), then enter a name or name pattern in the **Member** field.

A member name pattern can consist of any characters that are valid in a member name and the following two special pattern characters:

**asterisk (\*)**

Represents any number of characters. As many asterisks as required can appear anywhere in a member name. For example, if you enter \*d\*, a list of all members in the data set whose name contains "d" is displayed.

**percent sign (%)**

A place-holding character representing a single character. As many percent symbols as necessary may appear anywhere in a member name. For example, if you enter %%%%, a list of all members in the data set whose name is four characters in length is displayed.

If you perform either of these actions:

- Do not include a member name or name pattern in parenthesis in the **Data set name field**, and leave the **Member** field blank, or you specify a pattern in the **Member** field,
- Include a member name pattern in parenthesis in the **Data set name field**, and leave the **Member** field blank,

FM/DB2 displays a member name list when the Entry panel is processed and the data set has been specified or selected.

3. For data sets which have not been catalogued, enter the serial number of the volume which contains the data set in the **Volume serial** field.

4. Complete the remaining panel-specific fields, and then press Enter to process the panel function.  
If both the data set name and the member name have been fully specified, the panel action will proceed to its next stage.  
If you entered a pattern for the data set name or member name, the Data Set Selection panel is displayed, followed by the Member Selection panel, as needed. When you have made your selections from these panels, the Entry panel action will proceed to its next stage.
5. When the Data Set Selection panel is displayed, select your data set by entering an S in the **Sel** field adjacent to the required data set. You can only select one name from this list.
6. When the Member Selection panel is displayed, select your members by typing an S in the **Sel** field next to each member, and then pressing Enter.  
You can select as many names as required from this list. When the panel is processed, the first member on the list is used in the relevant function. When the function is completed, the next member in list is used. For example, if you are selecting several members to be edited, the first member is displayed in the Edit Session panel. When you exit this panel, the next member is displayed, and so on, until all selected members have been processed.

### Examples of data set name patterns

The examples below assume that the following data sets exist under the USERID high-level qualifier:

```
USERID.FMN.DATA  
USERID.FMN.TEMPLATES  
USERID.COBOL.COPY  
USERID.COBOL.SOURCE  
USERID.PLI.COPY  
USERID.PLI.SOURCE  
USERID.MISC.DATA.BACKUP  
USERID.WORK
```

#### Example 1

Entering the following pattern (with a single asterisk):

```
'USERID.*'
```

displays the only item with exactly one level of qualifier after USERID:

```
USERID.WORK
```

#### Example 2

Entering the following pattern (with two asterisks):

```
'USERID.**'
```

displays the complete list of data sets with the USERID high-level qualifier.

#### Example 3

Entering the following pattern:

```
'USERID.*.****'
```

displays the following list (containing those data sets with exactly three qualifiers, whose third-level qualifier contains exactly four characters):

## Scrollable input and display fields for long names

```
USERID.FMN.DATA  
USERID.COBOL.COPY  
USERID.PLI.COPY
```

### Examples of specifying a member name or pattern

The examples below assume that the following members exist within the data set named, FMNUSER.DATA:

```
DATA1  
FMNCDATA  
FMNCTAM  
FMNCTEM  
FMNCTMP  
NEWDATA  
NEWSTUFF  
TEMPA  
TEMPB
```

#### Example 1

Entering the following details on an Entry panel:

```
⋮  
Data set name . . . . . FMNUSER.DATA  
Member . . . . . _____  
⋮
```

displays the entire member name list:

```
DATA1  
FMNCDATA  
FMNCTAM  
FMNCTEM  
FMNCTMP  
NEWDATA  
NEWSTUFF  
TEMPA  
TEMPB
```

#### Example 2

Entering the following details on an Entry panel:

```
⋮  
Data set name . . . . . FMNUSER.DATA  
Member . . . . . FMNCT*  
⋮
```

displays the member name list:

```
FMNCTAM  
FMNCTEM  
FMNCTMP
```

#### Example 3

Entering the following details on an Entry panel:

## Scrollable input and display fields for long names

```
⋮
Data set name . . . . . FMNUSER.DATA(NEWDATA)
Member . . . . . _____
⋮
```

displays details for the member NEWDATA in data set FMNUSER.DATA.

### Example 4

Entering the following details on an Entry panel:

```
⋮
Data set name . . . . . FMNUSER.DATA(TEM*)
Member . . . . . _____
⋮
```

displays the member name list:

```
TEMPA
TEMPB
```

### Example 5

Entering the following details on an Entry panel:

```
⋮
Data set name . . . . . FMNUSER.DATA(*)
Member . . . . . _____
⋮
```

displays the entire member name list:

```
DATA1
FMNCDATA
FMNCTAM
FMNCTEM
FMNCTMP
NEWDATA
NEWSTUFF
TEMPA
TEMPB
```

### RELATED REFERENCES

- “Copy Utility (“From”) panel” on page 430
- “Copy Utility (“To”) panel” on page 438
- “Data Create Utility panel” on page 533
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- “Export “To” panel” on page 609
- “Export Utility panel” on page 612
- “Import Utility (“To”) panel” on page 641
- “Import Utility (“From”) panel” on page 639
- “LOAD from panel” on page 652



## Scrollable input and display fields for long names

“LOAD Utility - Using Templates panel” on page 657

“UNLOAD Utility (Tables) "To" panel” on page 794

“Print Utility panel” on page 675

## Canceling long-running DB2 queries

On occasions, when you are working with very large amounts of DB2 data, you may experience long response times associated with the FM/DB2 query that FM/DB2 is processing.

When you are using one of the following FM/DB2 utilities, you can use the *attention interrupt key* to cancel the query.

- View
- Browse
- Edit
- Print
- Copy
- Import
- Export
- Create
- SQL

**Note:** Pressing the attention interrupt key when DB2 is processing displays the Confirm Cancel panel. Any un-actioned commands you have typed before or after you press the attention interrupt key are processed after FM/DB2 displays the Confirm Cancel panel. This may result in unexpected behavior.

To cancel the query (whilst waiting for one of the above FM/DB2 utilities to complete processing):

1. Press the attention interrupt key.  
FM/DB2 displays the Confirm Cancel panel.
2. To cancel the query, press the Abort function key (F6) or type ABORT to confirm the cancel request.  
(Alternatively, to continue the query, press the Continue function key (F5) or type CONTINUE to return to the current session and continue processing.)

### RELATED REFERENCES

“Confirm Cancel panel” on page 425

---

## Getting help

FM/DB2 offers two levels of help information: Tutorial Help and, for input fields (and some output fields), field-level help information. Tutorial Help is a context-sensitive help system that provides detailed explanations of the FM/DB2 panels and the processes in which they are used. The field-level help information provides a description of the current field. In addition, all error messages have an associated full text explanation, which can help you to determine the cause of a problem.

This section explains how to find the help information that you need.

### RELATED TASKS

“Accessing Tutorial Help” on page 39

“Displaying field-level help information” on page 41

“Displaying the expanded form of error messages” on page 41

## Accessing Tutorial Help

The Tutorial Help system is both context-sensitive and structurally organised. You can get directly to the information you need, using the context-sensitive access method or you can enter the Help system at a specific location and navigate to any topic information within the structure.

To access a context-sensitive Tutorial Help page:

1. Place your cursor on the Command Line or anywhere in the panel that is outside of a field entry line.
2. Press the Help function key (F1). The Tutorial Help page associated with the current panel is displayed.

When you access the Tutorial Help in this way, the first page that is displayed may be a main topic page, with a menu listing the associated sub-topics, or it may be a sub-topic page, depending upon the context from which you started.

3. Navigate through the Tutorial Help pages, to find the information you require (see below for a list of navigation commands).
4. When you have finished, press the Exit function key (F3) to return to your starting panel.

The Tutorial Help system is organised with a Table of Contents structure that is based upon the FM/DB2 Primary Options menu. Each entry within the Table of Contents leads to a main topic with a number of associated sub-topics. In addition, there is an index that lists selected topics from the Tutorial Help, alphabetically by subject.

To choose your starting point in Tutorial Help:

1. Select the Help pull-down menu from a panel Action Bar.
2. Enter the option number for the Tutorial Help entry point that you require. These are:

### 1. Help for help

Displays the Help panel for the Tutorial Help system.

### 2. Extended help

Displays the Tutorial Help panel associated with the current FM/DB2 panel (equivalent to pressing F1 from the FM/DB2 panel). When on the Primary Options menu, this is the Tutorial Help Table of Contents panel.

### 3. Keys help

Displays a panel that provides help for the Function Keys that are active on the current FM/DB2 panel.

### 4. Help index A-M

Displays the Help Index for subjects starting with "A" to "M".

### 5. Help index N-Z

Displays the Help Index for subjects starting with "N" to "Z".

### 6. Tutorial

Displays the Tutorial Help Table of Contents panel.

### 7. About

Displays the FM/DB2 version, PTF level, and copyright information in a window.

### 8. About DB2

Displays the DB2 subsystem, DB2 version and release information, FM/DB2 plan names, and audit options in a window.

**Note:** For more information about audit options, see “SAF-rule controlled auditing” on page 51.

### 9. News about FM/DB2

Displays a panels providing general information about the current FM/DB2 version/release.

To navigate Tutorial Help, enter one of the following commands in the Command line on any Tutorial page:

#### **BACK or B**

To back up to the previously viewed page.

#### **SKIP or S**

To skip the current topic and go on to the next topic.

#### **UP or U**

To display a higher level list of topics.

#### **TOC or T**

To display the Table of Contents.

#### **INDEX or I**

To display the Tutorial Index. Once the Index has been displayed, use the Right function key (F11) and the Left function key (F10) to scroll through the list, then position your cursor on a subject and press Enter to display the topic.

Alternatively, you may use the following keys whenever you are in the tutorial:

#### **Enter (Ctrl)**

To display the next sequential page within a topic.

#### **Help (F1)**

To display the Help Tutorial page within the Tutorial Help system (that is, the page that describes how to use Tutorial Help).

#### **End (F3)**

To terminate the tutorial.

#### **Up (F7)**

To display a higher level list of topics (instead of typing UP ).

#### **Down (F8)**

To skip to the next topic (instead of typing SKIP ).

#### **Right (F11)**

To display the next sequential page within a topic (instead of pressing Enter).

#### **Left (F10)**

To display the previous sequential page within a topic (instead of typing BACK ).

**Note:** The listed keys are the default key mappings. As you can customize key mappings, they may be different on your system.

## RELATED REFERENCES

“Primary Option Menu panel” on page 670

## Displaying field-level help information

To display the field-level help information for a field on an FM/DB2 panel:

1. Place your cursor on the field entry line.
2. Press the Help function key (F1). The field-level help information is displayed in a pop-up window.

If further information is needed, press the Extended Help function key (F5) to access the Tutorial Help page for the current panel.

Pressing Help while the field information window is displayed takes you to the Help Tutorial page within the Tutorial Help system (that is, the page that describes how to use Tutorial Help).

3. When you have finished reading the message or the relevant Tutorial Help page, press the Exit function key (F3) to return to your starting panel.

For example, Figure 15 shows the message seen when F1 is pressed from the PAGESIZE field in the Set Print Processing Options panel.

Process	Options	Utilities	Help			
FM/DB2 (DFE2)		Set Print Processing Options				
Set processing options as desired and enter EXIT (F3) to save your changes. Enter RESET to restore installation defaults.						
Print Options:						
PRINTO	Set Page Size		, TERMINAL or REXX			
PRINTD	<div> <p>Range: 1-999 Default: 60, unless changed in your File Manager installation.</p> <p>Specifies the number of lines per page on any File Manager print output.</p> </div>		a printed page			
PRINTL						
PAGESI						
PRTRRA						
PRTDIS						
PAGESK						
WIDEPR						
Command =		F1=Help	F2=Split	F3=Exit		
F1=Help		F4=Resize	F5=Ex-help	v	F6=Reset	F7=Backward
F8=Forwa						

Figure 15. Field-level help information for the PAGESIZE field

## Displaying the expanded form of error messages

If an error occurs when FM/DB2 attempts to process a panel, a short text message displays in the upper right corner of the screen. Figure 16 on page 42 shows an example where FM/DB2 cannot find the DB2 object specified.

Process	Options	Utilities	Help
FM/DB2 (DFE2)		DB2 View	<b>Object not found (DFE2)</b>
Specify the DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	DSN8910	Table space . . . . .	(optional)
Name . . . . .	EMPX		+
Row count . . . . .	ALL		
Template:			
Data set name . . . . .	'FMNUSER.FMSKELS'		
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	Edit options		
2. Previous	Edit template		
3. Generate from table	Re-edit template		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

Figure 16. DB2 View showing short text message

While this message is displayed, pressing the Help function key (F1) displays the expanded text of the error message at the bottom of the screen as shown in Figure 17.

Process	Options	Utilities	Help
FM/DB2 (DFE2)		DB2 View	<b>Object not found (DFE2)</b>
Specify the DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	DSN8910	Table space . . . . .	(optional)
Name . . . . .	EMPX		+
Row count . . . . .	ALL		
Template:			
Data set name . . . . .	'FMNUSER.FMSKELS'		
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A" always to select option		
<b>No DB2 object matches the combination of object details entered in DB2 system DFE2. Press Help for more information.</b>			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

Figure 17. DB2 View showing expanded message

Some messages, like the one shown in Figure 17 have "Press Help for more information." in the text of the long message. In this case, you can press the Help function key (F1) (again) when the long message is displayed to show a help panel

with additional information like that shown in Figure 18.

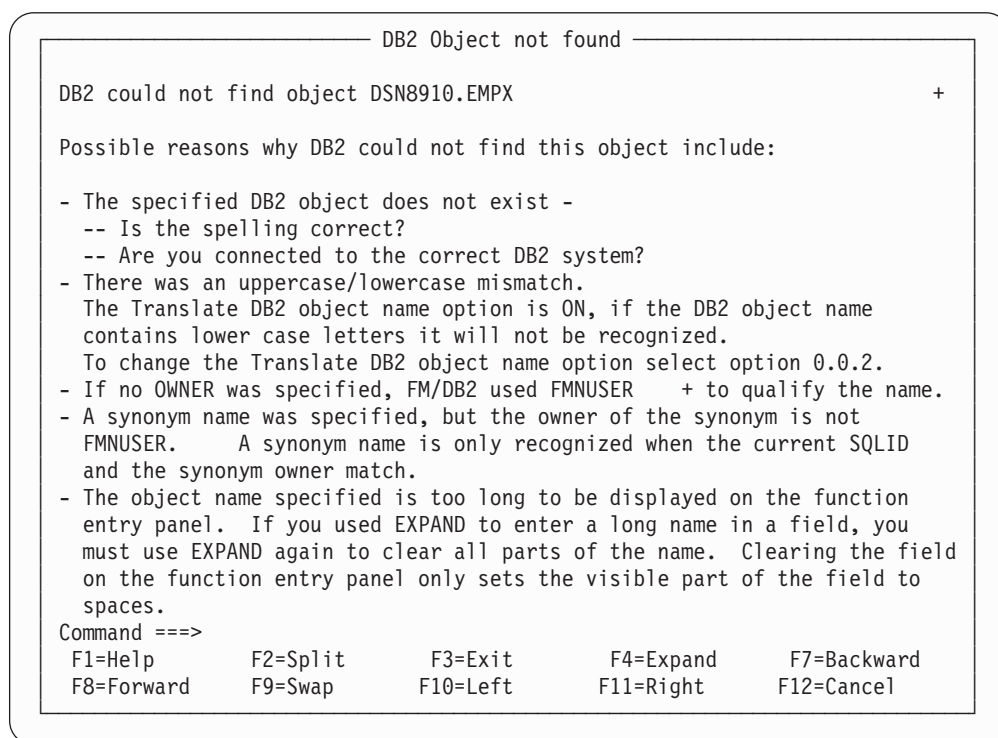


Figure 18. Help panel displaying additional information relating to a long error message

## Setting default processing options

Many of the processing operations performed by File Manager utilize default values that can be set from within the FM/DB2 application. By adjusting these values, you can customize FM/DB2 so that its behavior is best suited to your needs.

When you first use FM/DB2, you will probably find that the default values for processing options (as set at the time of installation) are sufficient. As you become more familiar with working with FM/DB2, you may choose to change some of these options to better suit your needs.

You can update these default values by accessing the relevant processing option panel (for example, the FM/DB2 System Options panel, Editor Options panels, and so on). Changes are saved in your ISPF user profile for future FM/DB2 sessions. They remain in effect until you change the option again.

To access a processing option panel, use either of the following methods:

- From the FM/DB2 Primary Option Menu panel:
  1. Select Option 0 (Settings). The Set Processing Options panel is displayed.

## Setting default processing options

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Set Processing Options	
0	System	System options	
1	View	View options	
2	Edit	Edit options	
3	Utilities		
3.3	Copy	Copy utility options	
3.4	Object List	Object list utility options	
3.7	Export	Export utility options	
3.L	Load	DB2 LOAD utility options	
3.UL	LISTDEF	DB2 Utility LISTDEF options	
3.UO	OPTIONS	DB2 Utility OPTIONS options	
3.UT	TEMPLATE	DB2 Utility TEMPLATE options	
3.UU	Unload	DB2 Unload utility options	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

Figure 19. Set Processing Options menu

2. Select the required processing options type from the menu.

For example, to display the current FM/DB2 system options, enter 0.2 on the command line and press Enter to display the FM/DB2 System Options (1 of 3) panel.

**Note:** You can navigate directly to the options panel you want by entering the path as shown on the Set Processing Options panel (such as 0.2, 3.7, and so on). Alternatively, for the system and utility options, you can enter 0 or 3 to first display the Set System Processing Options or Set Utility Processing Options panels respectively from which can then select the option you want.

- From any FM/DB2 panel, use the **Options** pull-down menu to select the required processing options type:

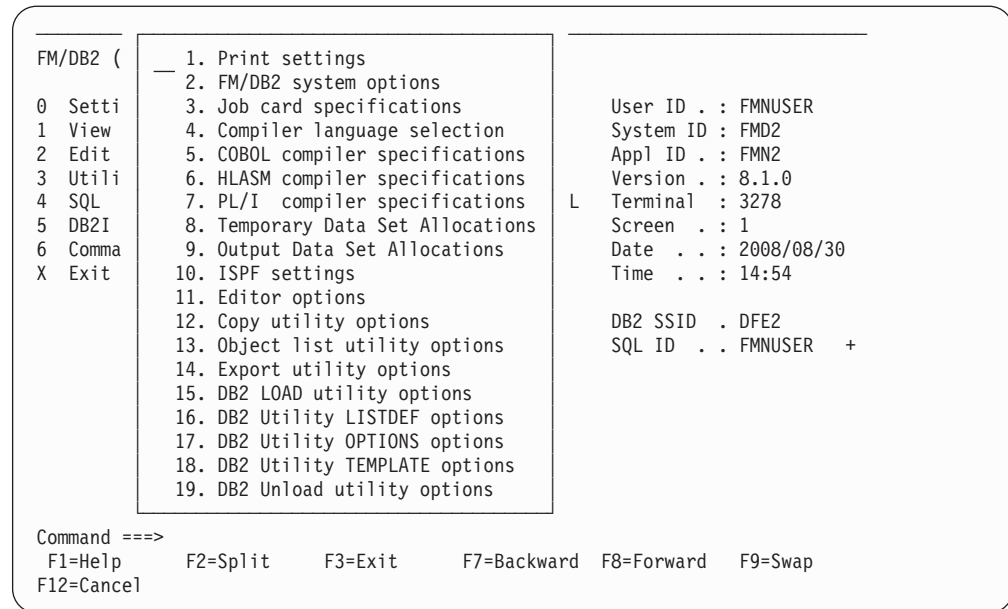


Figure 20. Options pull-down menu

When you select an option processing type, File Manager displays a panel listing those options and their current values. The following notes apply to all of these option panels:

- To change the value of an option, overwrite its current value.
- To save the options you have changed and exit the panel, press the Exit function key (F3).
- To exit a panel without saving changes, press the Cancel function key (F12).
- The options on these panels only affect the behavior of FM/DB2 panels.

## RELATED TASKS

“Selecting an item from the action bar” on page 22

## RELATED REFERENCES

“Set Processing Options panel” on page 738

“Set System Processing Options panel” on page 740

“Set Utility Options panel” on page 742

## System Options (option 0)

System options displays the Set System Processing Options panel from which you can select and display subsequent system options panels.

## RELATED REFERENCES

“Set System Processing Options panel” on page 740

“Set Print Processing Options panel” on page 735

“FM/DB2 Systems Options (1 of 4) panel” on page 623

“Set Batch Job Card Information panel” on page 726

“Compiler Language Selection panel” on page 425

“Set COBOL Processing Options panel” on page 727

“Set PL/I Processing Options panel” on page 733

“Set Temporary Data Set Allocation Options panel” on page 743

“Set Output Data Set Allocation Options panel” on page 731

“Set Trace options panel” on page 744

“ISPF Settings panel” on page 647



### Print settings (option 0.1)

The Print settings options control such things as the destination of your print output and the page format to use.

#### RELATED TASKS

“Printing the contents of a DB2 table” on page 263

#### RELATED REFERENCES

“Set Print Processing Options panel” on page 735

### FM/DB2 system options (option 0.2)

The FM/DB2 system options control such things as the translation of DB2 object names and input SQL statements to uppercase, the use of double quotes for SQL identifiers, and the external format for TIME columns.

#### RELATED REFERENCES

“FM/DB2 Systems Options (1 of 4) panel” on page 623

“FM/DB2 Systems Options (2 of 4) panel” on page 625

“FM/DB2 Systems Options (3 of 4) panel” on page 627

### Job card specifications (option 0.3)

On the Set Batch Job Card Information panel, you can specify batch job card information to be used for generating batch job submission JCL. The Batch Job Card Information panel provides a number of blank lines (**Batch Submission Job Statement Information**) where you can enter this information.

FM/DB2 assumes any non-blank lines define a JCL job card and copies the information from these lines into generated JCL. If all the lines are blank, the JCL generation process generates a basic job card using information from system variables.

#### RELATED REFERENCES

“Set Batch Job Card Information panel” on page 726

### Compiler language selection (option 0.4)

The Compiler language selection options allow you to select which compiler is used to generate templates from the COBOL or PL/I copybook for FM/DB2 import and export utilities.

#### RELATED TASKS

“How FM/DB2 compiles a copybook into a template” on page 59

“Copying data from a VSAM or QSAM file” on page 200

“Copying data to a VSAM or QSAM file” on page 223

#### RELATED REFERENCES

“Compiler Language Selection panel” on page 425

### COBOL compiler specifications (option 0.5)

The COBOL compiler specifications control various options used by the COBOL compiler to generate templates from COBOL copybooks used by the FM/DB2 import and export utilities.

### RELATED TASKS

- “How FM/DB2 compiles a copybook into a template” on page 59
- “Copying data from a VSAM or QSAM file” on page 200
- “Copying data to a VSAM or QSAM file” on page 223

### RELATED REFERENCES

- “Set COBOL Processing Options panel” on page 727

## HLASM compiler specifications (option 0.6)

The HLASM compiler specifications control various options used by the HLASM compiler to generate templates from HLASM copybooks used by the FM/DB2 import and export utilities.

### RELATED TASKS

- “How FM/DB2 compiles a copybook into a template” on page 59
- “Copying data from a VSAM or QSAM file” on page 200
- “Copying data to a VSAM or QSAM file” on page 223

### RELATED REFERENCES

- “Set HLASM Processing Options panel” on page 729

## PL/I compiler specifications (option 0.7)

The PL/I compiler specifications control various options used by the PL/I compiler to generate templates from PL/I copybooks used by the FM/DB2 import and export utilities.

### RELATED TASKS

- “How FM/DB2 compiles a copybook into a template” on page 59
- “Copying data from a VSAM or QSAM file” on page 200
- “Copying data to a VSAM or QSAM file” on page 223

### RELATED REFERENCES

- “Set PL/I Processing Options panel” on page 733

## Temporary Data Set Allocations (option 0.8)

The temporary data set allocations allow you to specify UNIT, DATA CLASS, STORAGE CLASS, and MANAGEMENT CLASS names for the allocation of a temporary data set.

### RELATED REFERENCES

- “Set Temporary Data Set Allocation Options panel” on page 743

## Output Data Set Allocations (option 0.9)

The output data set allocations allow you to specify UNIT, DATA CLASS, STORAGE CLASS, and MANAGEMENT CLASS names for the allocation of an output data set.

### RELATED REFERENCES

- “Set Output Data Set Allocation Options panel” on page 731

## Trace options (option 0.10)

The Trace options displays the Set Trace options panel.

## Setting default processing options

### RELATED REFERENCES

“Set Trace options panel” on page 744

## ISPF settings (option 0.11)

The ISPF settings option displays the ISPF Settings panel.

### RELATED REFERENCES

“ISPF Settings panel” on page 647

## View and Edit options (options 1 and 2)

The View and Edit options (both these options lead you to the first of the Editor Options panels) control various options used to format the display of data when viewing or editing.

**Note:** If you are viewing or editing data, and you use the **Options** pull-down menu to change these options, then your changes do not take effect until your next FM/DB2 editor session. To temporarily change the behavior for the current FM/DB2 editor session only, use the **Edit options** option on the DB2 View or DB2 Edit panels.

### RELATED TASKS

Chapter 4, “Viewing and changing DB2 data,” on page 95

“Setting options for the current FM/DB2 editor session” on page 99

### RELATED REFERENCES

“Editor Options (1 of 7) panel” on page 571

## Utilities (option 3)

Utilities displays the Set Utility Processing Options panel from which you can select and display subsequent utility options panels.

### RELATED REFERENCES

“Set Utility Options panel” on page 742

“Copy Options panel” on page 427

“Export Options (1 of 3) panel” on page 602

“LOAD Utility Options panel” on page 659

“LISTDEF Options panel” on page 649

“OPTIONS Options panel” on page 665

“TEMPLATE Options (1 of 2) panel” on page 779

“UNLOAD Options panel” on page 787

## Print utility options (option 3.1)

The Print utility options control such things as print mode (table or single, null column indicator character, batch execution, uncommitted read, and hexadecimal representation).

### RELATED TASKS

“Printing the contents of a DB2 table” on page 263

### RELATED REFERENCES

“Print Utility Options panel” on page 673

## Copy utility options (option 3.3)

The Copy utility options control such things as concurrency, table locking, and duplicate key processing when copying data between DB2 tables.

### RELATED TASKS

“Copying data from one DB2 object to another” on page 195

### RELATED REFERENCES

“Copy Options panel” on page 427

## Object List Options (option 3.4)

The object list utility options affect the behavior of catalog table displays produced in the following utility functions:

- Object List utility (3.4)
- Manage DB2 Privileges (3.5)
- Explain Utilities (4.5)

### RELATED REFERENCES

“FM/DB2 Object List Options (1 of 2) panel” on page 618

“FM/DB2 Object List Options (2 of 2) panel” on page 621

## Export utility options (option 3.7)

The Export utility options allow you to tailor the way in which the Export utility operates.

### RELATED TASKS

“Copying data to a VSAM or QSAM file” on page 223

### RELATED REFERENCES

“Export Options (1 of 3) panel” on page 602

“Export Options (2 of 3) panel” on page 605

“Export Options (3 of 3) panel” on page 607

## DB2 LOAD utility options (option 3.L)

The Load utility options control the way in which FM/DB2 generates JCL for the DB2 LOAD utility.

### RELATED TASKS

“LOAD utility” on page 290

### RELATED REFERENCES

“LOAD Utility Options panel” on page 659

## DB2 Utility LISTDEF options (option 3.UL)

The Listdef utility options displays the LISTDEF Options panel.

### RELATED TASKS

“Setting options for DB2 utilities” on page 282

### RELATED REFERENCES

“LISTDEF Options panel” on page 649

### DB2 Utility OPTIONS options (option 3.UO)

The Option utility options displays the OPTIONS Options panel.

#### RELATED TASKS

“Setting options for DB2 utilities” on page 282

#### RELATED REFERENCES

“OPTIONS Options panel” on page 665

### DB2 Utility TEMPLATE options (option 3.UT)

The Template utility options displays the TEMPLATE Options panel.

#### RELATED TASKS

“Setting options for DB2 utilities” on page 282

#### RELATED REFERENCES

“TEMPLATE Options (1 of 2) panel” on page 779

“TEMPLATE Options (2 of 2) panel” on page 781

### DB2 Unload utility options (option 3.UU)

The Unload utility options displays the Unload Options panel.

The Unload Utility options apply when you use the LOAD utility in Utilities (3.9) to transfer data.

#### RELATED TASKS

“Setting options for DB2 utilities” on page 282

“UNLOAD utility” on page 310

#### RELATED REFERENCES

“UNLOAD Options panel” on page 787

## Displaying or editing DBCS characters

If you want to display or edit DBCS characters in FM/DB2 and you have a DBCS capable terminal, you must ensure that your ISPF settings specify a terminal type that supports these characters.

To specify the Terminal Type in ISPF:

1. Exit from FM/DB2 and return to the z/OS Primary Options Menu panel.  
Although you can change the ISPF Terminal Type setting while FM/DB2 is running, the change will not be reflected until the next time that FM/DB2 is invoked.
2. Select option 0. Settings. The ISPF Settings panel is displayed.

```

Log/List  Function keys  Colors  Environ  Workstation  Identifier  Help
-----
                                ISPF Settings
                                More:  -
- Session Manager mode          Command delimiter . ;
/ Jump from leader dots
/ Edit PRINTDS Command
/ Always show split line
- Enable EURO sign

Terminal Characteristics
Screen format  1  1. Data   2. Std   3. Max   4. Part

Terminal Type  3
               1. 3277      2. 3277A   3. 3278   4. 3278A
               5. 3290A     6. 3278T   7. 3278CF  8. 3277KN
               9. 3278KN 10. 3278AR 11. 3278CY 12. 3278HN
              13. 3278H0 14. 3278IS 15. 3278L2 16. BE163
              17. BE190  18. 3278TH 19. 3278CU 20. DEU78
              21. DEU78A 22. DEU90A 23. SW116 24. SW131
              25. SW500

Command ==>
F1=Help    F2=Split   F3=Exit    F7=Backward F8=Forward F9=Swap
F10=Actions F12=Cancel

```

Figure 21. ISPF Settings panel

3. Select either 3277KN or 3278KN from the list of Terminal Types. (You may need to scroll down this panel to find the list of Terminal Types.)
4. Press Exit (F3) to save your selection and return to the z/OS Primary Options Menu panel.
5. Restart FM/DB2.

#### RELATED TASKS

"Starting FM/DB2" on page 11

"Exiting from FM/DB2" on page 14

## SAF-rule controlled auditing

The way in which auditing is performed during an FM/DB2 session may be determined by SAF rules, depending on the auditing requirement of your installation.

### Determining when SAF-rule controlled auditing is in effect

You can determine if SAF-rule controlled auditing is in effect by selecting "About DB2" on the Help pull-down menu:

- When SAF-rule controlled auditing is effect, the **Auditing** line of the "About DB2" pop-up panel shows "SAF-RULE CONTROLLED".
- When SAF-rule controlled auditing is active and no auditing is to occur, the message indicates that auditing is prohibited.
- When SAF-rule controlled auditing is active and auditing might occur, the message states only that SAF-rule controlled auditing is active.

**Note:** The final decision as to whether to audit or not depends on the FM/DB2 function and the appropriate SAF XFACILIT rules defined for the DB2 object names, SQL statements, or DB2 commands that are accessed by the FM/DB2 function.

### SAF rules for auditing

When auditing is determined by SAF rules:

- Auditing can be specified independently for each DB2 system accessed by FM/DB2, to either your audit log data set, to SMF, or to both destinations.
- All FM/DB2 functions that allow the execution of SQL statements are subject to audit, with the exception of SQL statements used to access the DB2 catalog tables for the internal processes of FM/DB2.
- It determines if and where the **Create audit trail (\*)** option is displayed on FM/DB2 panels. "(" is appended to the **Create audit trail** option to show auditing is under SAF control.

For select statements applying to a DB2 object, SAF rules can be specified at a DB2 object name level allowing audit for READ, UPDATE, or both types of operations. An UPDATE operation includes any SQL statement that changes DB2 data such as INSERT, DELETE, and UPDATE.

### SAF-rule controlled auditing not in effect

When SAF-rule controlled auditing is *not* in effect (that is, auditing is controlled by the settings in the FMN2POPT), the **Create audit trail** option is displayed on the first *global* editor options panel. The value shown reflects the current behaviour. When you display the first *local* editor options panel, the **Create audit trail** option is not displayed since it appears on the editor function entry panel.

### SAF-rule controlled auditing in effect, no auditing

When SAF-rule controlled auditing *is* in effect, and *no* auditing is to occur for the DB2 system, the **Create audit trail (\*)** option is not displayed on either the editor function entry panel, or on the first editor options panel.

### SAF-rule controlled auditing in effect, auditing possible

When SAF-rule controlled auditing *is* in effect, and auditing *is* to occur for the DB2 system, the actual decision on whether or not to create an audit log depends on the DB2 object name being processed.

Therefore, when you press Enter on the editor function entry panel, a check is made to see if auditing should occur for the current editor type (browse or edit) and the DB2 object name.

If the **Create audit trail (\*)** option is set appropriately (that is, it matches the auditing requirement as specified in the relevant SAF rule), processing continues, the data is displayed, and audit records are written, or not, depending on the option selection.

If you have not selected the **Create audit trail (\*)** option and auditing is required, the function entry panel is re-displayed with a message to indicate that auditing is required. You will not be able to process the object until the audit option is selected.

If you have selected the **Create audit trail (\*)** option and auditing is not required, the function entry panel is re-displayed with a message to indicate that auditing is not required. You will not be able to process the object until the audit option is un-selected.

Note that both the previous scenarios assume that you do not have audit control access for the DB2 object in question. If you do have control level audit access for the DB2 object, the current value of the **Create audit trail (\*)** option determines whether or not audit records are written.

### RELATED REFERENCES

“Editor Options (1 of 7) panel” on page 571

“DB2 Edit panel” on page 544

“DB2 View panel” on page 559



## Setting default processing options

---

## Chapter 3. Working with templates

FM/DB2 uses *templates* to provide a formatted view of your data, enabling you to view, edit, and manipulate data according to the columns and data types in the table you are working with.

Initially, FM/DB2 generates a template from the DB2 catalog table. After you have saved the template, you can then use FM/DB2 to enhance it.

The following sections describe how you use templates with FM/DB2.

---

### Associating a template with a DB2 object

To use an existing template with an FM/DB2 panel, you supply the name of the template in the template **Data set name** entry field (and optionally the template **Member** entry field) then, in the **Template usage** entry field, select option 1 (Above).

```
Template:
Data set name . . . FMUSER.TEMPLATE
Member . . . . . SALARIES

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

If you have previously used a template with the input DB2 object, you can select option 2 (Previous) instead. The Previous option instructs FM/DB2 to ignore the contents of the Template fields, and instead use the template most recently associated with the input data set. If you want to edit the template before using it, select the **Edit template** field.

To generate a template for the specified DB2 object, select option 3 (Generate from table). This option instructs FM/DB2 to ignore the contents of the Template fields and use information from the DB2 catalog table to generate a template for the DB2 object. This is the default setting.

To generate a template for the specified DB2 object and immediately save the template, enter the name you want FM/DB2 to use for the template in the template **Data set name** entry field (and optionally the template **Member** entry field) then, in the **Template usage** entry field, select option 4 (Generate/Replace).

#### RELATED TASKS

“Editing a template” on page 63

#### RELATED REFERENCES

“Copy Utility (“From”) panel” on page 430

“Copy Utility (“To”) panel” on page 438

“Data Create Utility panel” on page 533

“DB2 Browse panel” on page 540

## Associating a template with a DB2 object

“DB2 Edit panel” on page 544  
“DB2 View panel” on page 559  
“Export “To” panel” on page 609  
“Export Utility panel” on page 612  
“Import Utility (“To”) panel” on page 641  
“Import Utility (“From”) panel” on page 639  
“LOAD from panel” on page 652  
“Print Utility panel” on page 675  
“UNLOAD Utility (Tables) “From” panel” on page 793  
“UNLOAD Utility (Tables) “To” panel” on page 794

---

## Information stored in a template

The following section describes the information that a template can contain, and where and how FM/DB2 uses the information.

**Note:** In this chapter, “transferring data” refers to using any of the following FM/DB2 functions:

- Copy (option 3.3)
- Import (option 3.6)
- Export (option 3.7)
- Utilities (option 3.9), DB2 LOAD utility, DB2 UNLOAD utility

### Row selection criteria

Determines which rows are to be selected.

Rows that do not match the row selection criteria are excluded when comparing, copying<sup>1</sup> or printing.

### Column selection

Determines which columns are displayed (if you are browsing or editing) or printed.

Except for when you are exporting data, this information is ignored when transferring or creating DB2 objects. (When you are copying, importing, exporting, or loading data, if you want to exclude some data in the input from being transferred to the output, you need to “map” the “To” template without those fields.)

### Column sequence

Overrides the default order in which columns are displayed (if you are browsing or editing) or printed. By default, columns are displayed or printed in the order in which the columns are defined in the object in the DB2 catalog (the COLNO column of SYSIBM.SYSCOLUMNS).

This information is ignored when transferring or creating DB2 objects. (When copying, importing, exporting, or loading data, if you want to exclude some data in the input from being transferred to the output, you need to “map” the “To” template without those fields.)

### Column headings

Overrides the default column headings when browsing, editing or printing. (The default column headings are the column names defined in the DB2 catalog.)

### Column fixed attributes

The column name and data type as defined in the DB2 catalog on which the template was based.

### Column use attributes

Consist of two attributes:

#### Output width

Defines the number of positions allocated to the column if you are browsing, editing or printing.

The default width depends on the data type and relates to the "external" format for the data. For example, the default width for a TIMESTAMP column is 26 bytes (the usual external length).

If a numeric field contains a valid numeric value, but the value is too large to fit in the output width, then, if you are browsing or editing, the value is truncated and highlighted.

#### Leading zeros (numeric columns only)

Defines whether or not the column value is shown with leading zeros if you are browsing, editing or printing.

### Column create attributes

Defines the value to which the column is initialized if you are transferring data, or creating a table.

If you are transferring data, FM/DB2 uses this information in the "To" template. In a "From" template, this information is ignored.

### Column mapping

Defines which columns in the "From" template map to columns in the "To" template if you are transferring data.

If you are transferring data, FM/DB2 uses this information in the "To" template. In a "From" template, this information is ignored.

### Scrambling options

Determine how the contents of the column are scrambled (if at all) during a copy, import, or export process.

### Notes:

1. When copying, FM/DB2 uses this information in the "From" template. In a "To" template, this information is ignored. However, when comparing, the selection information in both the "Old" and "New" templates is used.

### RELATED TASKS

"Copying data from one DB2 object to another" on page 195  
"Copying data from a VSAM or QSAM file" on page 200  
"Copying data to a VSAM or QSAM file" on page 223  
"LOAD utility" on page 290  
"UNLOAD utility" on page 310  
"Mapping data" on page 86

### RELATED REFERENCES

Chapter 14, "DB2 data types," on page 367  
"Copy Utility ("From") panel" on page 430  
"Import Utility ("From") panel" on page 639  
"Export Utility panel" on page 612  
"Data Create Utility panel" on page 533  
"DB2 Utilities panel" on page 556

## Printing a template

To print a template, use the TP primary command.

## Information stored in a template

### RELATED TASKS

“Looking at the print output from your FM/DB2 session” on page 268

### RELATED REFERENCES

“TP primary command” on page 856

“PB primary command” on page 840

---

## Using templates with non-DB2 data

Some FM/DB2 functions interface with non-DB2 data:

- You can *retrieve* non-DB2 data with these FM/DB2 functions:
  - Import (option 3.6) — for retrieving non-DB2 data from a VSAM or QSAM data set.
  - The DB2 LOAD utility in Utilities (option 3.9) — for retrieving data from a sequential data set.
- You can *write* data to non-DB2 files with these FM/DB2 functions:
  - Export (option 3.7) — for writing data to a VSAM data set, a sequential data set, or a member of a partitioned data set.
  - The DB2 UNLOAD utility in Utilities (option 3.9) — for unloading data to a sequential data set.

Because this is non-DB2 data, FM/DB2 is not able to create a template from the DB2 catalog table. Instead, you have to provide a source for the template. The source is either a (non-DB2) template or a copybook. This describes the records and fields in the data set or member. If you specify a copybook, FM/DB2 compiles it into a template. You can save it and reuse it with any application data set that has the same record structure.

A copybook is a data set containing COBOL, HLASM, or PL/I source statements that describe the record structure of an application data set:

### COBOL data description entries

Each level-01 group item in the copybook describes a record type in the application data set; elementary items in the group describe fields in the record type.

For example, the following entries describe the record structure of an application data set that contains two record types, ORDER and ITEM:

```
01 ORDERS.
  02 ORDER-ID      PIC X(5).
  02 CUSTOMER-ID   PIC X(5).
  02 ORDER-DATE.
    03 ORDER-YEAR  PIC X(4).
    03 ORDER-MONTH PIC X(2).
    03 ORDER-DAY   PIC X(2).
01 ITEM.
  02 PRODUCT-ID    PIC X(9).
  02 QUANTITY      PIC 9(4) BINARY.
  02 UNIT-COST     PIC 9(8) BINARY.
```

ORDER records contain five fields: ORDER-ID, CUSTOMER-ID, ORDER-YEAR, ORDER-MONTH and ORDER-DAY. ITEM records contain three fields: PRODUCT-ID, QUANTITY and UNIT-COST.

**HLASM DSECT definitions**

HLASM copybooks are similar to COBOL copybooks, in that the major structures (DSECT names) describe record types and elementary names describe fields:

```
ORDER      DESCCT
ORDERID    DS   CL9
CUSTOMERID DS   CL5
ORDERDATE  DS   0CL8
ORDERYEAR  DS   CL4
ORDERMONTH DS   CL2
ORDERDAY   DS   CL2
ITEM       DESCCT
PRODUCTID  DS   CL9
QUANTITY   DS    H
UNITCOST   DS    F
```

**PL/I DECLARE statements**

Similar to COBOL copybooks, major structures (level-1 names) describe record types, and elementary names describe fields:

```
DECLARE 1 ORDER,
        2 ORDER_ID      CHAR(9),
        2 CUSTOMER_ID   CHAR(5),
        2 ORDER_DATE,
          3 ORDER_YEAR   CHAR(4),
          3 ORDER_MONTH  CHAR(2),
          3 ORDER_DAY    CHAR(2);
DECLARE 1 ITEM,
        2 PRODUCT_ID    CHAR(9),
        2 QUANTITY       BIN(15),
        2 UNIT_COST      BIN(31);
```

A copybook can contain the entire source of a COBOL, HLASM, or PL/I program, or only COBOL data description entries, HLASM DSECT definitions, or PL/I DECLARE statements. FM/DB2 ignores everything in the copybook except for COBOL data description entries, HLASM DSECT definitions, or PL/I DECLARE statements.

FM/DB2 supports copybooks stored in any of the following:

- PDS
- PDSE
- CA-Panvalet library
- Library accessed using the Library Management System Exit

**Notes:**

1. Library members may not be packed by ISPF.
2. For details about enabling File Manager to use a CA-Panvalet library, or a library accessed using the Library Management System Exit, see the *File Manager Customization Guide*.

**RELATED TASKS**

“How FM/DB2 compiles a copybook into a template”

**How FM/DB2 compiles a copybook into a template**

If you specify a copybook, FM/DB2:

1. Checks (if the compiler language selected is not HLASM) whether the copybook is a complete source program, or contains only COBOL data declarations or PL/I DECLARE statements. If the copybook is not a complete program, FM/DB2 includes the copybook in a shell program.

## Using templates with non-DB2 data

2. Calls the selected compiler to check the syntax of the copybook, and to produce an ADATA file.

You can use the Settings: Compiler language selection panel (option 0.0.4) to specify whether FM/DB2 calls the COBOL, HLASM, or PL/I compiler.

For COBOL and PL/I copybooks, you can select the **Auto detect** option on the Compiler Language Selection panel to instruct File Manager to detect the language of the copybook and call the appropriate compiler. In this case, FM/DB2 analyzes the source to determine whether the language of the source is COBOL or PL/I and creates a template based on the result.

To instruct File Manager to process an Assembler copybook, you must set the language option on the Compiler Language Selection panel to HLASM. Once you have set the option to HLASM, every function that supports copybooks can be used with an Assembler copybook. Use the HLASM compiler specifications to provide extra SYSLIB and change ALIGN and DBCS processing options.

You can specify the acceptable return code level for the compilation in the compiler specifications panel for the selected language.

If the compilation produces a return code with a value less than or equal to the specified maximum, FM/DB2 processes the information in the ADATA file to create a template.

If the compilation produces a return code with a value greater than the specified maximum, FM/DB2 displays a pop-up menu. From the pop-up menu, you can:

- View the compilation listing using Print Browse (option 3.11).
- Cancel the template creation process.
- Try the compilation again. Before you select this option, first view the compilation listing and correct any errors in the copybook. While you are viewing the compilation listing, you can use the ISPF split screen facility to swap to another ISPF session and use your editor to correct the errors in the copybook.
- Ignore the errors and proceed with creating the template. This option is only available if FM/DB2 is able to create a template. Some compilation errors, such as warnings, might have no effect on the creation of the template. If you are unsure, view the compilation listing. If the compilation error is too severe, FM/DB2 cannot create a template.
- Try the compiler for the other language. The option is not available if the HLASM compiler language has been selected.

### RELATED TASKS

“Compiler language selection (option 0.4)” on page 46

“Compiler Language Selection panel” on page 425

### RELATED REFERENCES

“Set COBOL Processing Options panel” on page 727

“Set PL/I Processing Options panel” on page 733

“Set HLASM Processing Options panel” on page 729

## Support for COBOL data description entries

In the COBOL data description entries specified in a copybook, FM/DB2 supports:

- ASSIGN clause
- OCCURS clause (including OCCURS DEPENDING ON)
- PICTURE clause (except for numeric editing)
- REDEFINES clause

- RENAME clause
- USAGE clause
- VALUE clause

FM/DB2 ignores:

- BLANK WHEN ZERO clause
- DATE FORMAT clause
- EXTERNAL clause
- GLOBAL clause
- JUSTIFIED clause
- Numeric editing in the PICTURE clause
- SYNCHRONIZED clause

FM/DB2 supports all data item level numbers except 88 (condition-names).

## Support for HLAASM data description entries

In the HLAASM data description entries specified in a copybook, FM/DB2 produces a record, or segment, for each DSECT it finds with corresponding DS/DC fields.

For more information, see the section "Using HLAASM copybooks with File Manager" in the base *File Manager User's Guide and Reference*.

## Support for PL/I data description entries

In the PL/I data description entries specified in a copybook, FM/DB2 supports:

- PL/I data attributes VARYING and VARYINGZ for single and double-byte character strings.
- PL/I bit variables including the VARYING attribute.
- Binary, decimal, floating point and numeric picture data (excluding symbols).
- REFER variables for array extents. Both upper and lower bound array elements may be declared for each dimension. The number of extents for each dimension is always:

upper bound - lower bound + 1

**Note:** A zero extent is not allowed for a PL/I dimension. If a bound is not specified PL/I assumes a value of 1.

- REFER variable to declare the length of a string variable, character (AN), varying-length character (VC) or zero-terminated character string (ZC) in bytes.
- FM/DB2 also supports PL/I double-byte character variables (DB), varying-length double-byte character (VD) and zero-terminated double-byte characters (Z2) as byte pairs. FM/DB2 also supports bit strings (BT) and varying bit string (VB) variables.
- REFER variables can be declared as integer, fixed binary, packed decimal, floating point, or character string variables.
- UNION declarations at any level which can have varying length (REFER string length or REFER array extents).

**Note:** UNIONS can contain overlays of different data types, which may require template workbench record selection criteria or SHOW control if data is not displayable.

FM/DB2 ignores:

- INIT data values



## Using templates with non-DB2 data

- REFER start expression, for example,  
VAR(, expr Refer abc, ) or  
CHAR(expr Refer abc).
- EXTERNAL attributes
- DEFINED structure overlays
- LIKE structure attributes

**Note:** In general, FM/DB2 treats Numeric Edited fields as alphanumeric. A special code, ZA, is used for unsupported zoned decimals.

## Support for variable-length arrays

A variable-length array is defined in a COBOL copybook by an OCCURS DEPENDING ON (ODO) clause, and in a PL/I copybook by a dimension attribute where the lower or upper bounds (or both) are defined by REFER options.

The following considerations apply if you are using a template that contains variable-length arrays:

- A record structure can contain multiple variable-length arrays; however, the fields that define the size of the arrays (the ODO or refer “objects”) must all be in the record before the first variable-length array item.
- If any of the following are true:
  - (COBOL copybook only.) The object is out of the range specified by the ODO clause.
  - The record length does not match the calculated length of a record with the number of array items specified by the object.

then, if you are editing the data set, the prefix area contains the description =LGTH, indicating that the record was not selected because of incorrect length.

- If you change the value of an object field, then the number of items in the array expands or contracts automatically.

New items are inserted at the end of the current array (and before any fields that follow the array); numeric items are initialized to zero, and alphanumeric items are initialized to blanks.

Similarly, items are deleted from the end of the array, and any fields subsequent to the end of the table are not affected.

For PL/I, the number of items in an array is determined by subtracting the lower bound of the dimension attribute from the upper bound and then adding one. If both the lower and upper bounds are specified using REFER options, changing the value of either of the refer object fields inserts or deletes array items accordingly.

- (COBOL copybook only.) You cannot change the object field to a value outside the range specified by the ODO clause. (FM/DB2 supports an ODO lower value of 0.)
- (COBOL copybook only.) Inserting a new record results in a record with the minimum number of array items specified by the ODO definition. For example:
  - Given the following ODO clause:  
ODO-ONE OCCURS 0 TO 10 TIMES DEPENDING ON ODO-CNTRL-ONE.

if you insert a new record, the ODO-CNTRL-ONE field is initialized to zero, with no ODO-ONE array items in the new record.

- Given the following ODO clause:  
ODO-ONE OCCURS 5 TO 7 TIMES DEPENDING ON ODO-CNTRL-ONE.

ODO-CNTRL-ONE is initialized to 5, with five ODO-ONE array items in the new record.

- (PL/I copybook only.) Inserting a new record results in a record with zero array items. Upper and lower bound refer object fields are initialized to zero.

#### RELATED TASKS

“Copying data from a VSAM or QSAM file” on page 200

“LOAD utility” on page 290

“Copying data to a VSAM or QSAM file” on page 223

---

## Editing a template

FM/DB2 always uses a template to display DB2 data.

The discussion in this section provides examples based on editing a template while you are browsing the sample data shown in Figure 123 on page 759.

You can use either of the following methods to edit a template:

- On an entry panel where you can use templates:
  1. Specify the template you want FM/DB2 to use (by selecting the appropriate **Template usage** option and, if required, specifying the name of the template).
  2. Select the **Edit template** field.
  3. Press Enter.

FM/DB2 presents the template for editing, then runs the function after you have finished editing.

If you edit a template in this way, you can change all parts of the template (including row selection criteria).

- If you are using Browse (option B), View (option 1), or Edit (option 2) to browse, view, or edit data, you can use the TEDIT primary command.

#### Notes:

1. You can *only* use the TEDIT primary command from within an FM/DB2 editor session (if you have the data displayed). You cannot use TEDIT from either the DB2 View or DB2 Edit function panels.
2. If you use the TEDIT primary command, you cannot change the **Order**, **A/D**, or **Row Selection Criteria** input fields.

The reason you cannot alter these parts of the template is that an FM/DB2 editor session is in progress and the session can contain uncommitted changes to data. Altering the preceding parts of the template might require data to be retrieved from DB2 using a new (and possibly different) SQL statement.

When you edit a template (using either of the preceding methods), FM/DB2 displays the Column Selection/Edit panel.

When you have finished editing the template using the Column Selection/Edit panel, you can:

- Use the edited template “on the fly” without saving it by pressing the RunTemp function key (F6),
- Optionally save the edited template before returning to the FM/DB2 function panel by pressing the Exit function key (F3), or
- Return to the FM/DB2 function panel without saving the template by pressing the Cancel function key (F12).

## Editing a template

### RELATED TASKS

“Where you can use templates” on page 8  
Chapter 4, “Viewing and changing DB2 data,” on page 95

### RELATED REFERENCES

“TEDIT primary command” on page 856  
“Column Selection/Edit panel” on page 419

## Adding a description to a template

When you are creating or modifying a template, you can issue the DESCRIBE primary command to add a description to the template.

To add or modify a description for a template:

1. Display the Column Selection/Edit panel for the template concerned by:
  - Selecting the **Edit template** field on an entry panel where you can the template, or
  - Issuing the TEDIT primary command from within an FM/DB2 editor session that is using the template to display the data
2. Enter the DESCRIBE primary command.  
FM/DB2 displays the DB2 Template Description panel.
3. Enter or modify the description for the template in the **Description** entry field.
4. Press the Exit function key (F3) to return to the Column Selection/Edit panel.

### RELATED REFERENCES

“DESCRIBE primary command” on page 814  
“TEDIT primary command” on page 856  
“Column Selection/Edit panel” on page 419  
“DB2 Template Description panel” on page 555

---

## Selecting rows

Before you view or edit data, you can select the rows you want to view by editing a template and specifying *row selection criteria*.

To specify row selection criteria, you must first display the Column Selection/Edit panel by selecting the **Edit template** field on an entry panel where you can use templates. (If you use the TEDIT primary command to display the Column Selection/Edit panel, you cannot change the row selection criteria.)

You can specify row selection criteria:

- By column, or
- In freeform style

The following sections describe these two methods.

For a full-screen edit, use the SQL primary command or press the SQL function key (F4).

### Row selection by column

To enter row selection criteria by column, type 1 on the command line on the Column Selection/Edit panel and press Enter. FM/DB2 displays the Row Selection Criteria panel.

On the line for each column for which you want to specify selection criteria, you specify an operator (like = or >) in the **Op** column and, in most case, a value in the **Value** column.

For example, to select only employees with a surname of SMITH from a table of employees:

1. On the line for the column LASTNAME, type = in the Op column and SMITH (optionally enclosed in single quotes) in the Value column:

```

Cmd Con ( Column name           Op Value )
<-> - <-----1-----+-----2-----3-----> <-> <-----1-----+-----2-----+-----3----->
*** **** Top of data ****

:
_ AND _ LASTNAME                = SMITH _

```

2. Press the Exit function key (F3).

FM/DB2 displays the Column Selection/Edit panel showing the generated row selection criteria (WHERE clause) in the **Row Selection Criteria** field at the top of the panel:

```

Process Options Utilities Help
-----
FM/DB2 (DFA2) Column Selection/Edit Line 1 of 16
TABLE FMNUSER.EMP
----- Row Selection Criteria ----- (Use SQL/PF4 for full screen edit) -----
1 Sel: WHERE "LASTNAME" = 'SMITH' +
:

```

3. Press Exit function key (F3)

FM/DB2 displays the selected data:

```

Process Options Utilities Help
-----
FM/DB2 (DFA2) Table Edit Template saved
TABLE FMNUSER.EMP Format TABL
EMPNO FIRSTNME MIDINIT LASTNAME WORKDEPT PHONENO HIREDATE
#1 #2 #3 #4 #5 #6 #7
CH(6) VARCHAR(12) CH(1) VARCHAR(15) CH(3) CH(4) DATE
PU--> <-----1--> - <-----1-----> <-NF <-> <----->
000000 **** Top of data ****
000001 000250 DANIEL< S SMITH< D21 0961 30.10.1969
000002 000300 PHILIP< X SMITH< E11 2095 19.06.1972
000003 **** End of data ****
:

```

If you now want to select, say, employees with a surname of SMITH or JONES, you need to modify the row selection criteria. To do this, you must return to the Row Selection Criteria panel:

1. From the panel of displayed data, press the Exit function key (F3) to return to the DB2 Edit entry panel.
2. Select the **Edit template** field and press the Exit function key (F3) to display the Column Selection/Edit panel.

You will notice on this panel that the **Row Selection Criteria** field (showing your previous WHERE "LASTNAME" = 'SMITH' clause) is protected. This is

## Selecting rows

because row selection criteria entered by column or as a free-form expression are not interchangeable. You can change row selection criteria that has been entered by column, by returning to the Row Selection Criteria panel. You can convert row selection criteria entered by column to a free-form expression by issuing the SQL command on the Column Selection/Edit panel, and saving the data. The conversion removes the specification by column. You cannot convert a free-form expression to a row selection criteria entered by column.

3. Enter 1 on the command line to display the Row Selection Criteria panel.
4. To select more than one value for the same column (as in this case, where you want to select two values, SMITH and JONES), there are two methods you can use:
  - Use multiple lines for the column:
    - a. Type the R (Repeat) prefix command in the **Cmd** column to repeat the line for the column name concerned
    - b. On the repeated line (or lines) for the column name, change the connector (in the **Con** column) to “OR” by overtyping the AND with O or OR
    - c. Type the value in the **Value** column

For our example, the selection lines now look like this:

```
Cmd Con ( Column name                               Op Value )
<-> - <---+---1---+---2---+---3---> <-> <---+---1---+---2---+---
*** **** Top of data ****
:
:
  AND  LASTNAME                                     = SMITH
  OR   LASTNAME                                     = JONES
```

- Use the IN operator:
  - a. On the line for LASTNAME, change the operator (from =) to IN. The IN operator lets you specify a list of values you want to select.
  - b. In the value column, type the values you want to select. For alphanumeric columns, when you specify a list of values, each value *must* be enclosed in quotes and separated by a comma.

For our example, the selection line now look like this:

```
Cmd Con ( Column name                               Op Value )
<-> - <---+---1---+---2---+---3---> <-> <---+---1---+---2---+---
*** **** Top of data ****
:
:
  AND  LASTNAME                                     IN 'SMITH','JONES'
```

5. Press the Exit function key (F3) twice to display the selected data. Whichever method you used to specify row selection criteria for SMITH or JONES, the same results are achieved:

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Table Edit	Template saved
TABLE FMNUSER.EMP			Format TABL
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+---1-->	-	<---+---1--->
000000	****	Top of data	****
000001	000210	WILLIAM<	T JONES<
000002	000250	DANIEL<	S SMITH<
000003	000300	PHILIP<	X SMITH<
000004	****	End of data	****
:			

Continuing with this same example, if you now want to select employees with a surname of SMITH or JONES who are in department D21, you again need to modify the row selection criteria.

This time, in order to avoid any ambiguity, you may need to use parentheses to define the sequence of evaluation for the resultant WHERE clause. On the Row Selection Criteria panel, you can use the ( and ) columns to enclose groups of expressions in parentheses.

For our example, the selection lines may now look like this:

Cmd	Con	(	Column name		Op	Value	)
<->	-	<---+---1---+---2---+---3--->	<->	<---+---1---+---2---+---	-		-
***	****		Top of data		****		
:							
---	AND	(	LASTNAME		=	SMITH	
---	OR		LASTNAME		=	JONES	)
---	AND		WORKDEPT		=	D21	-

The selected data now appears as:

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Table Edit	Template saved
TABLE FMNUSER.EMP			Format TABL
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+---1-->	-	<---+---1--->
000000	****	Top of data	****
000002	000250	DANIEL<	S SMITH<
000004	****	End of data	****
:			

### Toggleing the display (80-character screens only)

On wide screens, FM/DB2 displays both the **Column Name** and the **Data type(length)** details for each column on the Row Selection Criteria panel. However, for 80-character screens, by default FM/DB2 displays only the **Column Name** details.

## Selecting rows

To toggle between the **Column Name** and the **Data type(length)** details appearing, press the PF11 function key (the cursor must not be positioned on a **Value** input field).

### Verifying the format of DATE, TIME, and TIMESTAMP columns

If the row selection criteria you are specifying includes a DATE, TIME, or TIMESTAMP column, the value you specify (in the **Value** entry field) for that column must be in the correct format.

If you are not sure of the format you should use:

1. Type the required operator (such as "=") in the **Op** entry field
2. Type "=" in the **Value** entry field
3. Press Enter

FM/DB2 displays the field in the format required, showing the current value.

For example, if you enter "=" in the **Value** entry field for a TIMESTAMP column, FM/DB2 returns the current date and time in the format required for a TIMESTAMP column:

Cmd	Con	( Column name	Op	Value	)
<->	-	<---+---1---+---2---+---3--->	<->	<---+---1---+---2---+---	-
***	****	Top of data	****		
:					
:					
:		AND - TSTAMP	=	2004-09-24-09.19.36.774910	
:					
:					

Using the same format, you can now overtype the value that FM/DB2 returns with the value you want to use as part of your row selection criteria.

#### RELATED TASKS

"Scrolling the Row Selection Criteria field" on page 70

"Expanding the Row Selection Criteria field" on page 71

#### RELATED REFERENCES

"Column Selection/Edit panel" on page 419

"Row Selection Criteria panel" on page 710

## Row selection criteria in freeform style

To enter freeform row selection criteria, you use the **Row Selection Criteria** entry field at the top of the Column Selection/Edit panel. The entry field is protected and you cannot update it if:

- It already contains a WHERE clause which was generated by column, or
- You have used the TEDIT command to display the Column Selection/Edit panel

In this entry field, enter any valid SQL WHERE clause to specify selection criteria to select the data you want to view or edit.

For example, if you have two columns, WORKDEPT and LASTNAME, and you want to display only details of people in department A00 whose family name starts in the range "A" to "M":

1. Enter the following selection criteria:

WORKDEPT = 'A00' AND LASTNAME BETWEEN 'A%' AND 'M%'

Alternatively, you can use the FM/DB2 reference numbers as abbreviations for the column names. For example, you can write the preceding expression as:

#5 = 'A00' AND #4 BETWEEN 'A%' AND 'M%'

If you use abbreviations for column names, FM/DB2 expands them to the full column name when you press Enter. If you omit the keyword WHERE, FM/DB2 inserts it when you press Enter.

The Column Selection/Edit panel now looks like this:

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Column Selection/Edit	Line 1 of 16
TABLE FMNUSER.EMP			
----- Row Selection Criteria ---- (Use SQL/PF4 for full screen edit) -----			
1 Sel: WORKDEPT = 'A00' AND LASTNAME BETWEEN 'A%' AND 'M%'			+
Cmd Seq	SHE CL#	Column name	Data type(length) Null Default Order A/D
**** Top of data ****			
___ S	1	EMPNO	CHARACTER(6) None ___ -
___ S	2	FIRSTNME	VARCHAR(12) None ___ -
___ S	3	MIDINIT	CHARACTER(1) None ___ -
___ S	4	LASTNAME	VARCHAR(15) None ___ -
___ S	5	WORKDEPT	CHARACTER(3) Y Null ___ -
___ S	6	PHONENO	CHARACTER(4) Y Null ___ -
___ S	7	HIREDATE	DATE Y Null ___ -
___ S	8	JOB	CHARACTER(8) Y Null ___ -
___ S	9	EDLEVEL	SMALLINT Y Null ___ -
___ S	10	SEX	CHARACTER(1) Y Null ___ -
___ S	11	BIRTHDATE	DATE Y Null ___ -
___ S	12	SALARY	DECIMAL(9,2) Y Null ___ -
Command ==>			ScroTl PAGE
F1=Help	F2=Split	F3=Exit	F4=SQL
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F6=RunTemp
			F12=Cancel

Figure 22. Primary Column Selection/Edit panel showing row selection criteria

2. Press the Exit function key (F3).

FM/DB2 displays the selected rows:



## Selecting rows

Process	Options	Utilities	Help
FM/DB2 (DFA2)			
TABLE FMNUSER.EMP		Table Edit	3 rows fetched
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+-----1->	-	<---+-----1----->
000000	****	Top of data	****
000001	000110	VINCENZO<	G
000002	200010	DIAN<	J
000003	000010	CHRISTINE<	I
000004	****	End of data	****
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
		F5=RFind	F6=RChange
		F11=Right	F12=Cancel
		Scroll	PAGE

Figure 23. Example showing selected columns

### RELATED TASKS

- “Using the SQL Edit session” on page 71
- “Scrolling the Row Selection Criteria field”
- “Expanding the Row Selection Criteria field” on page 71

### RELATED REFERENCES

- “Row Selection Criteria panel” on page 710

## Scrolling the Row Selection Criteria field

To scroll the **Row Selection Criteria** entry field on the Column Selection/Edit panel, you can use the:

- Right function key (F11) and Left function key (F10), or
- RIGHT and LEFT primary commands

In either case, you must position the cursor on the **Row Selection Criteria** entry field before pressing either function key, or pressing Enter to issue either primary command.

The scroll indicator (+ or –) to the right of the expression indicates which directions you can scroll:

- + Entry field scrollable to the right
- Entry field scrollable to the left

To control how far you scroll, enter a scroll amount in the **Scroll** field:

**Scroll amount**   **Scrolls...**

- MAX** To the first or last position of the expression
- PAGE** One viewable width of data at a time
- HALF** Half a viewable width of data at a time
- DATA** One character less than a viewable width of data at a time

**CSR** When scrolling to the right, FM/DB2 positions the field with the character at the cursor being moved to the leftmost position in the viewable expression.

When scrolling to the left, FM/DB2 positions the field with the character at the cursor being moved to the rightmost position in the viewable expression.

*nnnn* *nnnn* characters at a time

To change the scroll amount, enter a new value into the **Scroll** field. If you enter MAX, FM/DB2 restores the scroll amount to its previous value after the operation. If you enter any other scroll amount, it remains in effect until you change it again.

#### RELATED TASKS

- “Row selection by column” on page 64
- “Row selection criteria in freeform style” on page 68

#### RELATED REFERENCES

- “RIGHT primary command” on page 848
- “LEFT primary command” on page 835

## Expanding the Row Selection Criteria field

You can expand the **Row Selection Criteria** entry field by:

- Entering the command SQL, or pressing the SQL function key (F4), to display an ISPF edit session containing the SQL expression
- Using the EXPAND command:
  1. Type EXPAND on the command line
  2. Position the cursor on the **Row Selection Criteria** entry field
  3. Press Enter.

FM/DB2 displays an expanded entry panel that allows you to enter row selection criteria up to 32,767 bytes long.

#### RELATED TASKS

- “Row selection by column” on page 64
- “Row selection criteria in freeform style” on page 68
- “Using the SQL Edit session”

#### RELATED REFERENCES

- “Column Selection/Edit panel” on page 419
- “EXPAND primary command” on page 822

## Using the SQL Edit session

To start an SQL Edit session, use the SQL primary command. The Edit session contains the SQL statement that FM/DB2 is using to retrieve data from DB2.

You can use the SQL Edit session to change the row selection criteria (WHERE clause), before retrieving data from DB2.

If you use the SQL primary command from within an editor session, FM/DB2 displays a panel such as that shown in Figure 24 on page 72.

## Selecting rows

```

  _Process  _Options  _Utilities  _Help
-----
EDIT      SYS02203.T120510.RA000.FMUSER.R0113662      Columns 00001 00072
***** ***** Top of Data *****
=NOTE= All changes made during this Edit session will be discarded at the end
=NOTE= of the Edit session.
=NOTE= Use the CREATE or REPLACE commands to take a copy of the SQL.
000001 SELECT "EMPNO", "FIRSTNME", "MIDINIT", "LASTNAME", "WORKDEPT",
000002         "PHONENO", "HIREDATE", "JOB", "EDLEVEL", "SEX", "BIRTHDATE",
000003         "SALARY", "BONUS", "COMM"
000004 FROM   "DSN8610"."EMP"
000005 WHERE  "WORKDEPT" = 'A00' AND "LASTNAME" BETWEEN 'A' AND 'M'
000006 WITH   UR
000007 FOR    FETCH ONLY
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left     F11=Right    F12=Cancel

```

Figure 24. SQL Edit session: SQL command issued from within an editor session

If you are editing a template (before displaying data) and you use the SQL primary command (or press the SQL function key (F4)), FM/DB2 displays a panel such as that shown in Figure 25.

```

  _File  _Edit  _Edit_Settings  _Menu  _Utilities  _Compilers  _Test  _Help
-----
EDIT      SYS02248.T145911.RA000.FMUSER.R0103542      Columns 00001 00072
***** ***** Top of Data *****
=NOTE= Only changes to the WHERE clause will be recognized at the end of the
=NOTE= Edit session. All other changes will be ignored.
=NOTE= Use the CREATE or REPLACE commands to take a copy of the SQL.
=NOTE=
=NOTE= Columns for "DSN8610"."EMP"
=NOTE=
=NOTE=  C1# Column name          Data type(length)  Null
=NOTE=  1  EMPNO                CHARACTER(6)
=NOTE=  2  FIRSTNME              VARCHAR(12)
=NOTE=  3  MIDINIT               CHARACTER(1)
=NOTE=  4  LASTNAME              VARCHAR(15)
=NOTE=  5  WORKDEPT              CHARACTER(3)        Y
=NOTE=  6  PHONENO               CHARACTER(4)        Y
=NOTE=  7  HIREDATE              DATE                Y
=NOTE=  8  JOB                   CHARACTER(8)        Y
=NOTE=  9  EDLEVEL               SMALLINT            Y
=NOTE= 10  SEX                   CHARACTER(1)        Y
=NOTE= 11  BIRTHDATE             DATE                Y
Command ==>
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left     F11=Right    F12=Cancel

```

Figure 25. SQL Edit session: SQL command issued when editing a template

You can use the ISPF editor commands CREATE and REPLACE to take a copy of the SQL statement into another, permanent, data set.

Column details for the DB2 object might be shown as note lines (=NOTE=) at the top of the ISPF edit session. These are only displayed if the WHERE clause can be changed.

### RELATED REFERENCES

“SQL primary command” on page 854

## Making changes

The note lines (=NOTE=) at the top of the SQL Edit session indicate whether you can make changes to the SQL statement. When data is displayed in an FM/DB2 editor session, you cannot change the SQL statement without first ending the current editor session. To interactively test and change SQL statements, use Prototyping: Enter (option 4.3), or use the **Re-edit template** option on the DB2 View or DB2 Edit panel.

You can use FM/DB2 reference numbers as abbreviations for the column names.

When you exit the SQL Edit session by pressing the Exit function key (F3), FM/DB2 converts FM/DB2 reference numbers to the corresponding DB2 column name, and validates the statement. If the validation fails, FM/DB2 redisplay the SQL statement with an error message.

### Notes:

1. You cannot change any part of the SQL statement before the WHERE keyword. This includes the list of columns in the SELECT clause (see the following note item).
2. All columns in the table are included in the SELECT clause (following the SELECT keyword) of the SQL statement, even if you have edited the template to deselect some columns. If you deselect a column, it causes FM/DB2 not to display that column; it does not affect the SQL command used by FM/DB2 to retrieve the data from DB2.
3. The maximum length for the WHERE clause that can be specified in the ISPF editor session displayed by the SQL command is 32767 characters.

### RELATED TASKS

“Ending an FM/DB2 editor session” on page 102

“Entering, executing, and explaining SQL statements” on page 354

“Selecting rows” on page 64

“Selecting columns” on page 74

### RELATED REFERENCES

“DB2 View panel” on page 559

“DB2 Edit panel” on page 544

“SQL primary command” on page 854

## Saving changes

You can only save any changes you make in the SQL Edit session if the WHERE clause can be changed, and the resultant SQL statement is acceptable to DB2.

When you have made the required changes, press the Exit function key (F3) to redisplay the Column Selection/Edit panel. The row selection criteria section of the panel shows the changes you made to the WHERE clause in the Edit session.

To return to the Column Selection/Edit panel without saving your changes, press the Cancel function key (F12).

### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

## Selecting rows

### Long WHERE clauses

You can use the FM/DB2 SQL Edit session to enter long WHERE clauses (subject to any limits imposed by your host DB2 system). See the *DB2 UDB for z/OS SQL Reference*.

If the SQL expression is too large to be displayed in the **Row Selection Criteria** section of the Column Selection/Edit panel, FM/DB2 displays as much of the expression as possible. In this situation, if you make any changes to the expression on the Column Selection/Edit panel, FM/DB2 displays an ISPF Edit session containing the complete SQL expression.

The maximum length for the WHERE clause that can be specified in the ISPF editor session displayed by the SQL command is 32767 characters.

#### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

---

## Manipulating columns

FM/DB2 offers a number of ways to manipulate columns within rows. Using the Column Selection/Edit panel, you can:

- Select columns
- Change the order in which columns are displayed
- Change column headings
- Access column attributes panels to change individual column attributes

#### RELATED TASKS

“Selecting columns”

“Changing the sequence of displayed or printed data” on page 76

“Changing the column heading” on page 80

“Changing column attributes” on page 79

#### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

## Selecting columns

To select which columns are displayed in an FM/DB2 editor session, use the Column Selection/Edit panel. Selected columns are displayed with an “S” in the **S** column. To toggle between selecting and deselecting a column, enter S in the **Cmd** column of the Column Selection/Edit panel.

By default, FM/DB2 selects all of the columns in the DB2 object for display, in the order that they are defined to DB2. The initial display shows all columns as selected, with the exception of any ROWID column.

**Note:** Deselecting a column does not alter the SQL statement that FM/DB2 uses to retrieve data from DB2. In an FM/DB2 editor session, FM/DB2 always generates an SQL statement that specifies every column in the DB2 object.

### Toggling the selection status of more than one column at a time

You can toggle between selecting or deselecting more than one column at a time by entering one of the following selection commands:

**SS**      Selects or deselects a block of columns.

Enter SS twice: first in the **Cmd** column at the start of the block you want to select or deselect, and again at the end of the block. FM/DB2 toggles the selection status of each column in the selected block.

**Sn** Selects or deselects  $n$  columns.

Enter  $Sn$  in the **Cmd** field of the first column you want to select or deselect. FM/DB2 toggles the selection status of each column, starting from the first column selected for  $n$  columns.

**S\*** Selects or deselects a block of columns, starting from the first column selected and then all subsequent columns.

Enter  $S^*$  in the **Cmd** field of the first column you want to select or deselect. FM/DB2 toggles the selection status of each column, starting from the first column selected to the last column.

**Note:** If every column in a template is deselected, FM/DB2 selects every column in the template for processing.

### RELATED TASKS

“ROWID columns” on page 82

### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

## Holding columns (when scrolling left or right)

You can hold columns so that, if you scroll left or right in TABL display format, those columns are always displayed on the left of the panel (regardless of how far you scroll). To hold a column, enter H in the **Cmd** column of the Column Selection/Edit panel. To free the column, enter H again in the **Cmd** column.

If you hold a column, “H” is displayed in the H column on the Column Selection/Edit panel, and “1” is displayed in the **Seq** column to show it is the first held column. If you hold a second column, “2” is displayed in the **Seq** column to show it is the second held column, and so on.

### Notes:

1. The sequence numbers shown in the **Seq** column for held columns are independent of any sequence number you might enter to change the sequence of displayed columns. Held columns are always displayed as the leftmost columns on the panel (in the order that you held them when editing the template) and take priority (as far as the left-to-right sequence in which columns are displayed is concerned) over other columns.
2. If you hold a number of columns, there might be little or no room left on the display for non-held columns. This is a particular problem if using an 80-byte display. In this situation you might not be able to scroll right.

## Toggle the hold status of more than one column at a time

You can toggle between holding or freeing more than one column at a time by entering one of the following hold commands in the **Cmd** column of the Column Selection/Edit panel:

**HH** Holds or frees a block of columns.

Enter HH twice: first in the **Cmd** column at the start of the block of columns you want to hold or free, and again at the end of the block. FM/DB2 toggles the hold status of each column in the selected block.

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**Hn** Holds or frees *n* columns.

Enter **Hn** in the **Cmd** field of the first column you want to hold or free. FM/DB2 toggles the hold status of each column, starting from the first column selected for *n* columns.

### RELATED TASKS

“Changing the sequence of displayed or printed data”

### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

## Changing the sequence of displayed or printed data

You can edit a template to change:

- the order in which *columns* are displayed or printed
- the sequence in which *rows* are displayed or printed

### RELATED TASKS

“Changing the sequence of displayed or printed columns”

“Changing the sequence of displayed or printed rows” on page 77

## Changing the sequence of displayed or printed columns

By default, FM/DB2 displays or prints columns in the sequence they are defined in the DB2 catalog. This is the same sequence that the column names are displayed in the Column Selection/Edit panel.

To change the order in which columns are displayed or printed, use the **Seq** field on the Column Selection/Edit panel to specify an alternative order.

**Note:** The **Seq** field on the Column Selection/Edit panel affects only the sequence in which FM/DB2 displays or prints columns. It has no effect on the sequence in which columns are exported when you use the Export utility function (3.7).

For example, on the Column Selection/Edit panel shown in Figure 26 on page 77, to make the JOB column be shown first, then the HIREDATE column (followed by the remaining columns):

1. In the **Seq** column against the JOB column, type 1.
2. In the **Seq** column against the HIREDATE column, type 2.

The Column Selection/Edit panel now looks like this:

Process	Options	Utilities	Help
<hr/>			
FM/DB2 (DFA2)	Column Selection/Edit		Line 1 of 16
TABLE FMUSER.EMP			
----- Row Selection Criteria ---- (Use SQL/PF4 for full screen edit) -----			
1 Sel: _____			+
<hr/>			
Cmd Seq	SHE CL#	Column name	Data type(length) Null Default Order A/D
**** Top of data ****			
____ S	1	EMPNO	CHARACTER(6) None _____ -
____ S	2	FIRSTNME	VARCHAR(12) None _____ -
____ S	3	MIDINIT	CHARACTER(1) None _____ -
____ S	4	LASTNAME	VARCHAR(15) None _____ -
____ S	5	WORKDEPT	CHARACTER(3) Y Null _____ -
____ S	6	PHONENO	CHARACTER(4) Y Null _____ -
____ 2 S	7	HIREDATE	DATE Y Null _____ -
____ 1 S	8	JOB	CHARACTER(8) Y Null _____ -
____ S	9	EDLEVEL	SMALLINT Y Null _____ -
____ S	10	SEX	CHARACTER(1) Y Null _____ -
____ S	11	BIRTHDATE	DATE Y Null _____ -
____ S	12	SALARY	DECIMAL(9,2) Y Null _____ -
Command ==>			Scroll PAGE
F1=Help	F2=Split	F3=Exit	F4=SQL
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

Figure 26. Primary Column Selection/Edit panel showing column sequence selection

- Press the RunTemp function key (F6).

The data is displayed showing the revised order of the columns:

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp			
FM/DB2 (DFA2)		Table Browse				
TABLE FMUSER.EMP		42 rows fetched				
JOB	HIREDATE	EMPNO	FIRSTNME	MIDDLE INITIAL	LASTNAME	WORKDEP
#8	#7	#1	#2	#3	#4	#5
CH(8)	DATE	CH(6)	VARCHAR(12)	CHARACTER(1)	VARCHAR(15)	CH(3)
<---+--->	<---+--->	PU---+>	<---+---1->	-	<---+---1----->	<-NF
**** Top of data ****						
PRES	01/01/1965	000010	CHRISTINE<	I	HAAS<	A00
MANAGER	10/10/1973	000020	MICHAEL<	L	THOMPSON<	B01
MANAGER	04/05/1975	000030	SALLY<	A	KWAN<	C01
MANAGER	08/17/1949	000050	JOHN<	B	GEYER<	E01
MANAGER	09/14/1973	000060	IRVING<	F	STERN<	D11
MANAGER	09/30/1980	000070	EVA<	D	PULASKI<	D21
MANAGER	08/15/1970	000090	EILEEN<	W	HENDERSON<	E11
MANAGER	06/19/1980	000100	THEODORE<	Q	SPENSER<	E21
SALESREP	05/16/1958	000110	VINCENZO<	G	LUCCHESE<	A00
CLERK	12/05/1963	000120	SEAN<		O'CONNELL<	A00
ANALYST	07/28/1971	000130	DOLORES<	M	QUINTANA<	C01
ANALYST	12/15/1976	000140	HEATHER<	A	NICHOLLS<	C01
Command ==>				Scroll PAGE		
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve	F5=RFind	F6=RChange	
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel	

#### RELATED TASKS

“Copying data to a VSAM or QSAM file” on page 223

#### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

### Changing the sequence of displayed or printed rows

To change the order in which rows are displayed or printed, use the **Order** field and, optionally, the **A/D** field on the Column Selection/Edit panel. For the most significant column, type “1” in the **Order** field; for the next most significant



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column, type "2" in the **Order** field, and so on. If you use the **Order** field, rows are displayed in ascending sequence by default. To display the rows in descending sequence, type "D" in the **A/D** field.

If you use either the **Order** or **A/D** fields on the Column Selection/Edit panel, FM/DB2 adds an ORDER BY clause to the SQL SELECT statement used to retrieve the data from DB2.

For example, on the Column Selection/Edit panel shown in Figure 27, the **Order** and **A/D** fields specify rows to be shown in the sequence LASTNAME (ascending) within WORKDEPT (descending).

Process		Options		Utilities		Help			
FM/DB2 (DFA2)				Column Selection/Edit		Line 1 of 16			
TABLE FMNUSER.EMP									
----- Row Selection Criteria ----- (Use SQL/PF4 for full screen edit) -----									
1 Sel: _____ +									
Cmd	Seq	SHE	CL#	Column name	Data type(length)	Null	Default	Order	A/D
				**** Top of data ****					
---	---	S	1	EMPNO	CHARACTER(6)		None	---	-
---	---	S	2	FIRSTNME	VARCHAR(12)		None	---	-
---	---	S	3	MIDINIT	CHARACTER(1)		None	---	-
---	---	S	4	LASTNAME	VARCHAR(15)		None	2	A
---	---	S	5	WORKDEPT	CHARACTER(3)	Y	Null	1	D
---	---	S	6	PHONENO	CHARACTER(4)	Y	Null	---	-
---	---	S	7	HIREDATE	DATE	Y	Null	---	-
---	---	S	8	JOB	CHARACTER(8)	Y	Null	---	-
---	---	S	9	EDLEVEL	SMALLINT	Y	Null	---	-
---	---	S	10	SEX	CHARACTER(1)	Y	Null	---	-
---	---	S	11	BIRTHDATE	DATE	Y	Null	---	-
---	---	S	12	SALARY	DECIMAL(9,2)	Y	Null	---	-
Command ==>				ScroTT PAGE					
F1=Help		F2=Split		F3=Exit		F4=SQL		F5=RFind	
F7=Up		F8=Down		F9=Swap		F10=Left		F11=Right	
								F6=RunTemp	
								F12=Cancel	

Figure 27. Primary Column Selection/Edit panel showing row sequence selection

When the data is displayed, it appears in the revised sequence:

Process	Options	Utilities	Help
FM/DB2 (DFA2)			
Table Browse			
42 rows fetched			
Format TABL			
TABLE FMUSER.EMP			
EMPNO	FIRSTNME	MIDINIT	LASTNAME
WORKDEPT	PHONENO	HIREDATE	JOB
#1	#2	#3	#4
CH(6)	CHAR(12)	CH(1)	CHAR(15)
CH(3)	CH(4)	DATE	CH(8)
PU-->	<---+---1-->	-	<---+---1--->
<-NF	<-->	<---+--->	<---+---
**** Top of data ****			
200340	ROY<	R	ALONZO<
E21	5698	05/05/1947	FIELDR
000340	JASON<	R	GOUNOT<
E21	5698	05/05/1947	FIELDR
000330	WING<		LEE<
E21	2103	02/23/1976	FIELDR
000320	RAMLAL<	V	MEHTA<
E21	9990	07/07/1965	FIELDR
000100	THEODORE<	Q	SPENSER<
E21	0972	06/19/1980	MANAGE
200330	HELENA<		WONG<
E21	2103	02/23/1976	FIELDR
000090	EILEEN<	W	HENDERSON<
E11	5498	08/15/1970	MANAGE
000290	JOHN<	R	PARKER<
E11	4502	05/30/1980	OPERAT
000280	ETHEL<	R	SCHNEIDER<
E11	8997	03/24/1967	OPERAT
200280	EILEEN<	R	SCHWARTZ<
E11	8997	03/24/1967	OPERAT
000310	MAUDE<	F	SETRIGHT<
E11	3332	09/12/1964	OPERAT
000300	PHILIP<	X	SMITH<
E11	2095	06/19/1972	OPERAT
Command ==>			
			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve
F5=RFind	F6=RChange	F7=Up	F8=Down
F9=Swap	F10=Left	F11=Right	F12=Cancel

Figure 28. Table Browse panel

#### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

## Changing column attributes

To change the attribute of a column, use the Column Selection/Edit panel and enter E in the **Cmd** field against the column. You can enter E against as many columns as you want. For each column you select, FM/DB2 displays a Column Attributes panel.

The attributes you can change are:

- Column heading
- Output width
- Whether to show leading zeros (numeric columns)
- Values to use for creating new columns

#### Notes:

1. For numeric, DATE, TIME, and TIMESTAMP columns, you can change the column heading as for an alphanumeric column.
2. For DATE, TIME, and TIMESTAMP columns, you can change the output width as for an alphanumeric column.
3. For very long columns, change the display width to a smaller value to see more data on the display.

The attributes are used to determine how to display, print, or create a column.

#### RELATED TASKS

“Changing the attributes for an alphanumeric column” on page 80

“Changing the attributes for a numeric column” on page 81

#### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

“Column Attributes panel (alphanumeric)” on page 407

“Column Attributes panel (numeric)” on page 412

“Column Attributes panel (DATE)” on page 410

“Column Attributes panel (TIME)” on page 415

“Column Attributes panel (TIMESTAMP)” on page 417

### Changing the attributes for an alphanumeric column

If you enter E in the **Cmd** field for an alphanumeric column, the alphanumeric Column Attributes panel is displayed. You use this panel to change attributes for an alphanumeric column, or to set the pattern if you are creating alphanumeric columns.

**Changing the column heading:** By default, FM/DB2 use the column name (as defined in the DB2 catalog) as the column heading. However, you can change this by editing the template and specifying an alternative column heading.

To change the heading for a column, enter the new heading into the **Heading** entry field.

The column heading might change the width of the display column. For example, in Figure 28 on page 79, to see how the display changes if you change the heading for the MIDINIT column to the longer heading, “MIDDLE INITIAL”:

1. Enter the TEDIT primary command.  
FM/DB2 displays the Column Selection Edit panel.
2. On the line for the MIDINIT column, enter E in the **Cmd** field.  
FM/DB2 displays the Column Attributes panel for the MIDINIT column.
3. Type the new heading, MIDDLE INITIAL, in the **Heading** entry field.
4. Press the Exit function key (F3).  
FM/DB2 displays the Column Selection/Edit panel.
5. Press the Exit function key (F3) again.  
FM/DB2 displays the Template Save panel.
6. Press the RunTemp function key (F6).  
FM/DB2 displays the data with the new heading.

Figure 29 on page 81 shows how the change of heading has changed the width of the third column from what it was when originally displayed in Figure 28 on page 79.

Process	Options	Utilities	Help
FM/DB2 (DFA2)			
Table Browse			42 rows fetched
TABLE FMUSER.EMP			Format TABL
EMPNO	FIRSTNME	MIDDLE INITIAL	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CHARACTER(1)	VARCHAR(15)
PU-->	<---+---1-->	-	1t;---+---1--->
**** Top of data ****			
200340	ROY<	R	ALONZO<
000340	JASON<	R	GOUNOT<
000330	WING<		LEE<
000320	RAMLAL<	V	MEHTA<
000100	THEODORE<	Q	SPENSER<
200330	HELENA<		WONG<
000090	EILEEN<	W	HENDERSON<
000290	JOHN<	R	PARKER<
000280	ETHEL<	R	SCHNEIDER<
200280	EILEEN<	R	SCHWARTZ<
000310	MAUDE<	F	SETRIGHT<
000300	PHILIP<	X	SMITH<
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F6=RChange
			F12=Cancel

Figure 29. Table Browse panel showing width of displayed column changed due to longer heading

**Changing the output width:** To change the output width, enter the new width into the **Output width** entry field.

The output width is the number of character positions used by view, edit, browse, and print panels to show the column in TABL display or print format. The default output width is the maximum of the number of characters needed to show the column heading (or column name, if no heading is specified), and the number of characters needed to show the value of the column, as determined from the column definition in the copybook.

The minimum width is six characters. The maximum is 30 or the column width + 10 (whichever is the greater).

#### RELATED REFERENCES

“Column Attributes panel (alphanumeric)” on page 407

### Changing the attributes for a numeric column

If you enter E in the **Cmd** field for a numeric column, the numeric Column Attributes panel is displayed. You use this panel to change attributes for a numeric column, or to set the pattern if you are creating numeric columns.

**Changing the column heading:** For numeric columns, you change the column heading as for an alphanumeric column.

#### RELATED TASKS

“Changing the attributes for an alphanumeric column” on page 80

**Changing the output width:** To change the output width, enter the new width into the **Output width** column. The output width is the number of character positions used by view, edit, browse, and print panels to show the column in TABL display or print format. The default output width is the maximum of the number of characters needed to show the column heading (or column name, if no

## Manipulating columns

heading is specified), and the number of characters needed to show the value of the column, as determined from the column definition in the copybook, including a sign character and decimal point.

The allowable widths are 6 to 32 characters.

**Showing leading zeros:** To show leading zeros, enter YES into the **Leading zeros** column. The default setting is NO (suppress leading zeros). Figure 30 shows the leading zeros shown for SALARY (but not for the other two numeric columns shown).

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Table Browse	42 rows fetched
TABLE FMUSER.EMP			Format TABL
JOB	EDLEVEL SEX	BIRTHDATE	SALARY
#8	#9 #10	#11	#12
CH(8)	SMINT CH(1)	DATE	DEC(9,2)
<----->	<----+>	<----->	<-----+>
**** Top of data ****			
PRES	18 F	08/14/1933	0052750.00
MANAGER	18 M	02/02/1948	0041250.00
MANAGER	20 F	05/11/1941	0038250.00
MANAGER	16 M	09/15/1925	0040175.00
MANAGER	16 M	07/07/1945	0032250.00
MANAGER	16 F	05/26/1953	0036170.00
MANAGER	16 F	05/15/1941	0029750.00
MANAGER	14 M	12/18/1956	0026150.00
SALESREP	19 M	11/05/1929	0046500.00
CLERK	14 M	10/18/1942	0029250.00
ANALYST	16 F	09/15/1925	0023800.00
ANALYST	18 F	01/19/1946	0028420.00
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

Figure 30. An example display with leading zeros shown for a column (SALARY)

### RELATED REFERENCES

"Column Attributes panel (numeric)" on page 412

## ROWID columns

You can use ROWID columns to create a unique index for tables that have no obvious unique index column or columns.

After a row has been inserted, you cannot update the data in a ROWID column. You can only specify a ROWID value on insert operations for ROWID columns defined as GENERATED BY DEFAULT. See the *DB2 UDB for z/OS SQL Reference*.

When FM/DB2 generates the template for a table containing a ROWID column, the ROWID column is deselected and is not initially displayed in an FM/DB2 editor session.

## Specifying scrambling options

Scrambling data allows you to create test data based on production (or "live") data, but with the ability to change the values of certain columns.

When you use the Copy Utility (option 3.3), Import Utility (option 3.6), or Export Utility (option 3.7), you can choose to scramble some or all of the columns being copied. You specify the columns you want scrambled by marking those columns for scrambling in the output template.

You mark a column for scrambling by setting the scrambling options for that column in the template.

You can specify or change scrambling options on the Column Attributes panel. The panel comes in two flavors: one for alphanumeric columns and the other for numeric columns.

“Selecting a column for specifying scrambling options”

“Scrambling data” on page 234

“Column Attributes panel (alphanumeric)” on page 407

“Column Attributes panel (numeric)” on page 412

“Value List Edit panel” on page 798

“Scramble Exit Specification panel” on page 722

## Selecting a column for specifying scrambling options

You select a column from the Column Selection/Edit panel. To select a column for specifying scrambling options, enter E in the **Cmd** field adjacent to the required column. You can enter E against as many columns as you like. For each column you select, File Manager displays a Column Attributes panel.

After you have updated the scrambling options for a column (or any of the other column attributes), when you return to the Column Selection/Edit panel you will see an "E" for that column in the E column (under the "SHE" heading) indicating that the attributes for that column have changed.

The scrambling options you can specify are:

- Scramble type
- Value option
- Value input column
- Value output column
- Minimum and maximum values for a numeric range
- Value data set name

The scrambling options determine how the input data is scrambled (if at all) when it is copied, imported or exported.

### RELATED TOPICS

“Specifying the scramble type”

“Specifying the value option” on page 84

“Specifying value input and out columns” on page 85

“Specifying range values” on page 85

“Specifying a value data set name” on page 85

“Specifying and editing a value list” on page 86

## Specifying the scramble type

The **Scramble Type** option determines how data is scrambled when it is copied, imported, or exported.

Set the scramble type to one of these values:

**Blank** Data is not scrambled.

## Specifying scrambling options

### 1 ("Random")

Data scrambled to produce a random output value on each invocation.

### 2 ("Repeatable")

Data scrambled to produce the same output value on each invocation.

### 3 ("Translate")

Data scrambled using input and output values held in the value data set (specified in the **Dsn** field).

This option requires you to select the **Value** option with an input and output column (**In** and **Out**) and value data set name (**Dsn**). All records in the translate data set are loaded into memory for the copy operation. The input and output columns provide the location of the input and output field values as stored in the data set. Their lengths are determined by the respective input and output columns that have been mapped for the copy, import, or export operation. If a matching input column value is found, then the corresponding output column value is obtained from the matching record. If no match is found, then the column is initialized to zero, or the value determined by the data create attributes.

### 4 ("Exit")

Data scrambled using a scrambling exit (as specified on a separate panel). For details about writing a scrambling exit, see the *File Manager Customization Guide*.

#### RELATED TOPICS

"Specifying the value option"

"Specifying value input and out columns" on page 85

"Specifying range values" on page 85

"Specifying a value data set name" on page 85

## Specifying the value option

The **Value** option and corresponding fields control the output of the scrambling process.

The way in which you select, or specify, this option differs according to whether the associated column is alphanumeric or numeric:

- For alphanumeric column, do one of these:
  - Deselect the **Value** option by entering a blank.
  - Select the **Value** option by entering a "/".
- For numeric columns, do one of these:
  - Deselect the **Value** option by entering a blank.
  - Select a range by entering "1".
  - Select the **Value** option by entering "2".

### Value option selected ("/")

Selecting this option allows you to provide:

- **A translate data set.** This applies when you select **Scramble Type** 3 ("Translate") with input and output columns and a value data set.
- **A lookup data set.** This applies when you select a **Scramble Type** of 1 ("Random") or 2 ("Repeatable") along with a value data set name. The data set is loaded into memory and the output value is randomly or repeatably selected from one of the loaded records. The output column determines the location of the value that is selected for this column.

- **A value list.** This applies when you select a **Scramble Type** of 1 ("Random") or 2 ("Repeatable") *without* a value data set name and allows you to enter the selection values for this column on the panel displayed when you hit Enter. One of the values you provide is randomly or repeatably selected during a copy, import, or export operation. The values you enter are stored in the template. Value lists are described in more detail later.

### Value option deselected (blank)

Deselecting this option scrambles the input column to produce a random or repeatable output value. **Scramble Type** must be set to 1 ("Random") or 2 ("Repeatable").

### Specifying value input and out columns

The input column field (**In**) defines the start location of the input field value on the value data set and is used when the translate process is run during a copy, import, or export operation to match the input column with a value on the value data set. The length of the field is set to the length of the input column that is mapped to this column during the copy, import, or export process.

**Note:** This value is only required when you select **Scramble Type** 3 ("Translate").

The output column field **Out** defines the start location of the output field value on the value data set and is used in these ways during a copy operation:

- **Translate.** If an input column value is matched on the value data set, then the corresponding output value is used.
- **Random** or **Repeatable.** The input value is used to randomly, or repeatably, select an output value from the value data set.

**Note:** This value is required when you select **Scramble Type** 3 ("Translate").

If you select **Scramble Type** 1 ("Random") or 2 ("Repeatable"), and you have also selected the **Value** option, then the output column defaults to 1 if you have specified a value data set name (**Dsn**).

### Specifying range values

When you are specifying scramble options for a numeric column, you can specify a range of values from which the resultant scrambled value is to be selected.

You specify the minimum value of the range in the **Min** field and the maximum value of the range in the **Max** field.

You can only select the range option with random and repeatable scrambling. The output value is randomly or repeatably selected from a number within the specified range.

### Specifying a value data set name

The output data set name field **Dsn** field defines the value data set. It can be any catalogued sequential, partitioned or VSAM data set containing data that is used to determine the output column value during a copy, import, or export process.

If you select **Scramble Type** 3 ("Translate"), then the data set must contain the input and output values in the locations provided in the input and output columns.



## Specifying scrambling options

If you select **Scramble Type** 1 ("Random") or 2 ("Repeatable"), then the data set must contain the output value in the locations provided in the output column.

**Note:** This field is required when you select **Scramble Type** 3 ("Translate"). If you select **Scramble Type** 1 ("Random") or 2 ("Repeatable"), and also select the **Value** option, then you can optionally provide a data set name. If you leave this field blank having selected the **Value** option, you are prompted to enter the value list to be stored in the template.

### Specifying and editing a value list

A value list is a list of values which is used in conjunction with the scrambling options to select a value with which a column is populated during a copy, import, or export operation. When the output column is being populated, one of the values in this list is selected. Scrambling options combine the originating value with the random or repeatable seed to select a value from the list.

For random and repeatable scrambling, you can specify a value list inline by leaving the value data set field (**Dsn**) blank and selecting the **Value** option.

To edit the related value list, select the **Value** option and press Enter. FM/DB2 displays the Value List Edit panel.

The values you provide must be valid for the corresponding data type. Deleting a value list turns off the value list option on the previous panel.

To enter hexadecimal values, use the X'hhhh' format:

```
x'C1C2C3'
```

To provide leading blanks or a blank value, use a quoted string:

```
'    SMITH'
```

Blank value lines (no quotes) are ignored.

Use the FIND and LOCATE commands to bring a value containing or starting with a given string to the current line.

You can use prefix commands to copy, insert, move, repeat or delete lines.

To save the values, press F3. To ignore changes, press Cancel.

#### RELATED TOPICS

"Value List Edit panel" on page 798

---

## Mapping data

Mapping tells FM/DB2 how you want columns transferred from an old table to a new table. You can set up mapping so that, in the extreme case, a column is copied to a column of a different name, with a different length, and with a different, but compatible, data type. Most mappings are more straightforward.

Other types of mapping supported by FM/DB2 include:

- Mapping the columns of one table to another.  
You can use this type of mapping with the FM/DB2 Copy utility.
- Mapping the columns of a table to the fields in a file.

You can use this type of mapping with the FM/DB2 Export utility and the DB2 UNLOAD utility.

- Mapping the fields in a file to the columns of a DB2 table.

You can use this type of mapping with the FM/DB2 Import utility and the DB2 LOAD utility.

## Where you can map data

You can use templates to map data with the following FM/DB2 functions:

- Copy (option 3.3)
- Import (option 3.6)
- Export (option 3.7)
- Utilities (option 3.9)

### RELATED TASKS

“Copying data from one DB2 object to another” on page 195

“Copying data from a VSAM or QSAM file” on page 200

“Copying data to a VSAM or QSAM file” on page 223

“LOAD utility” on page 290

## Letting FM/DB2 do the mapping

If you want, you can use FM/DB2 to set up the mappings. This happens automatically if you do not select the **Edit template mapping** on the Copy “To” panel. If no mapping exists in the “To” template, FM/DB2 performs a corresponding move by going through the following two steps:

1. Generates mappings based on column names. That is, columns in the “From” template are mapped to like-named columns in the “To” template. FM/DB2 provides mappings for as many columns as it can in this way.
2. For the remaining “unmatched” columns in the “From” template (if any), FM/DB2 generates mapping based on data attributes:
  - FM/DB2 compares the attributes of the first unmatched column in the “From” template with the attributes of the first unmatched column in the “To” template. If the attributes of the two columns are the same, FM/DB2 generates mapping between the two columns.
  - FM/DB2 repeats the preceding step with the next pair of unmatched columns in the two templates until either it has generated mapping for all the columns in the “From” template, or if it finds the attributes of the two columns do not match.

### RELATED REFERENCES

“Copy Utility (“To”) panel” on page 438

“Import Utility (“To”) panel” on page 641

“Export “To” panel” on page 609

“LOAD from panel” on page 652

“UNLOAD Utility (Tables) “To” panel” on page 794

## Specifying your own mapping

If you want to set up your own mappings, indicate that you want to edit the “To” template by selecting the **Edit template mapping** option on the “To” panel for the relevant FM/DB2 function. If you select this option, FM/DB2 displays the Template Mapping panel (see Figure 31 on page 88).

Process		Options		Utilities		Help	
FM/DB2 (DFA2)				Template Mapping			
To	FMUSER.EEMP						
From	FMUSER.EMP						
Cmd	CL#	To Column name	Datatype	NI	CL#	From Column name	Datatype NI
**** Top of data ****							
---	1	EMPNO	CH(6)	NN	1	EMPNO	CH(6) NN
---	2	FIRSTNME	VC(12)	NN	2	FIRSTNME	VC(12) NN
---	3	MIDINIT	CH(1)	NN	3	MIDINIT	CH(1) NN
---	4	LASTNAME	VC(15)	NN	4	LASTNAME	VC(15) NN
---	5	WORKDEPT	CH(3)		5	WORKDEPT	CH(3)
---	6	PHONENO	CH(4)		6	PHONENO	CH(4)
---	7	HIREDATE	DATE		7	HIREDATE	DATE
---	8	JOB	CH(8)		8	JOB	CH(8)
---	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(9,2)
---	13	BONUS	DEC(9,2)		13	BONUS	DEC(9,2)
---	14	COMM	DEC(9,2)		14	COMM	DEC(9,2)
S	15	RID	CH(4)				
---	16	TSTAMP	TIMESTAMP				
**** End of data ****							
Command ==>							Scroll PAGE
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F5=RFind	F6=RunTemp		
F7=Up	F8=Down	F9=Swap	F12=Cancel				

Figure 31. Template Mapping panel

Note that, in Figure 31, there is no “From” columns against the “To” columns RID and TSTAMP. This shows that, for these two columns in the “To” template, there is no corresponding column in the “From” template. When the table is copied, FM/DB2 creates new values in RID and TSTAMP.

## RELATED REFERENCES

- “Template Mapping panel” on page 783
- “Copy Utility (“To”) panel” on page 438
- “Import Utility (“To”) panel” on page 641
- “Export “To” panel” on page 609
- “LOAD from panel” on page 652
- “UNLOAD Utility (Tables) “To” panel” on page 794

## Setting up mapping for a column

To set up or change the mapping for a column, enter S in the **Cmd** field against the column name. The From Column Mapping panel is displayed.

Process		Options		Utilities		Help	
FM/DB2 (DFA2)				From Column Mapping			
To DB2 object . . . : DSN8610.EEMP							
From DB2 object . . : DSN8610.EMP							
To column . . . . : #15 RID							
From column . . . . :							
Sel	Cl#	From Column	Data Type(length)				
**** Top of data ****							
—	D	Delete "From column"					
—	1	EMPNO	CHARACTER(6)				
—	2	FIRSTNME	VARCHAR(12)				
—	3	MIDINIT	CHARACTER(1)				
—	4	LASTNAME	VARCHAR(15)				
—	5	WORKDEPT	CHARACTER(3)				
S—	6	PHONENO	CHARACTER(4)				
—	7	HIREDATE	DATE				
—	8	JOB	CHARACTER(8)				
—	9	EDLEVEL	SMALLINT				
—	10	SEX	CHARACTER(1)				
Command ==>							
F1=Help		F2=Split		F3=Exit		F4=CRetriev	
F9=Swap		F12=Cancel		F7=Up		F8=Down	
						Scroll	PAGE

Figure 32. From Column Mapping panel

In Figure 32, the information at the top of the panel shows you the current mapping. In the figure, the **To column** is RID. There is currently no **From column** shown because there is no column in the “From” template with the same name.

To *change* the “From” column, enter S against the new “From” column. The information at the top of the panel changes immediately to reflect the new mapping. For example, if you enter S against column #6 (PHONENO), the information at the top of the panel changes:

FM/DB2 (DFA2)		From Column Mapping	
To DB2 object . . . : DSN8610.EEMP			
From DB2 object . . : DSN8610.EMP			
To column . . . . : #15 RID			
From column . . . . : #6 PHONENO			

and the Template Mapping panel also changes to show that PHONENO is mapped to RID:

FM/DB2 (DFA2)		Template Mapping						
To		FMUSER.EEMP						
From		FMUSER.EMP						
Cmd	CL#	To Column name	Datatype	NI	CL#	From Column name	Datatype	NI
**** Top of data ****								
—	1	EMPNO	CH(6)	NN	1	EMPNO	CH(6)	NN
:								
—	12	SALARY	DEC(9,2)		12	SALARY	DEC(9,2)	
—	13	BONUS	DEC(9,2)		13	BONUS	DEC(9,2)	
—	14	COMM	DEC(9,2)		14	COMM	DEC(9,2)	
—	15	RID	CH(4)		6	PHONENO	CH(4)	
—	16	TSTAMP	TIMESTAMP					
**** End of data ****								
Command ==>								
F1=Help		F2=Split		F3=Exit		F4=CRetriev		F5=RFind
F7=Up		F8=Down		F9=Swap		F12=Cancel		F6=RunTemp
						Scroll	PAGE	

There is now an entry in the “From” column against RID.

## Mapping data

To *remove* the current mapping for a “To” column, enter S against **Delete “From column”** on the From Column Mapping panel for that column. For example, the Template Mapping panel shown in Figure 31 on page 88 shows that the “To” column BONUS is mapped to the “From” column BONUS. To remove the mapping for BONUS (so that it is not mapped to any “From” column):

1. On the Template Mapping panel shown in Figure 31 on page 88, enter S in the **Cmd** field against column #13 (BONUS).

The From Column Mapping panel is displayed as shown in Figure 33.

2. Enter S against **Delete “From column”**.

Process	Options	Utilities	Help
FM/DB2 (DFA2) From Column Mapping			
To DB2 object . . : DSN8610.EEMP			
From DB2 object . . : DSN8610.EMP			
To column . . . : #13 BONUS			
From column . . . : #13 BONUS			
SEL	CL#	From Column	Data Type(length)
**** Top of data ****			
S	D	Delete "From column"	
---	1	EMPNO	CHARACTER(6)
---	2	FIRSTNME	VARCHAR(12)
---	3	MIDINIT	CHARACTER(1)
---	4	LASTNAME	VARCHAR(15)
---	5	WORKDEPT	CHARACTER(3)
---	6	PHONENO	CHARACTER(4)
---	7	HIREDATE	DATE
---	8	JOB	CHARACTER(8)
---	9	EDLEVEL	SMALLINT
---	10	SEX	CHARACTER(1)
---	11	BIRTHDATE	DATE
---	12	SALARY	DECIMAL(9,2)
---	13	BONUS	DECIMAL(9,2)
---	14	COMM	DECIMAL(9,2)
**** End of data ****			
Command ==>			Scroll PAGE
F1=Help	F2=Split	F3=Exit	F4=CRetrieve F7=Up
F9=Swap	F12=Cancel		F8=Down

Figure 33. From Column Mapping panel showing **Delete “From column”** selected

3. Press Enter.

The “From column” mapping information (fourth line on the From Column Mapping panel) for BONUS is displayed.

		Process	Options	Utilities	Help
FM/DB2 (DFA2)		From Column Mapping			
To DB2 object . . . : DSN8610.EEMP					
From DB2 object . . : DSN8610.EMP					
To column . . . . : #13 BONUS					
From column . . . :					
Sel	Cl#	From Column	Data Type(length)		
**** Top of data ****					
—	D	Delete "From column"			
—	1	EMPNO	CHARACTER(6)		
—	2	FIRSTNME	VARCHAR(12)		
—	3	MIDINIT	CHARACTER(1)		
—	4	LASTNAME	VARCHAR(15)		
—	5	WORKDEPT	CHARACTER(3)		
—	6	PHONENO	CHARACTER(4)		
—	7	HIREDATE	DATE		
—	8	JOB	CHARACTER(8)		
—	9	EDLEVEL	SMALLINT		
—	10	SEX	CHARACTER(1)		
—	11	BIRTHDATE	DATE		
—	12	SALARY	DECIMAL(9,2)		
—	13	BONUS	DECIMAL(9,2)		
—	14	COMM	DECIMAL(9,2)		
**** End of data ****					
Command ==>					Scroll PAGE
F1=Help		F2=Split	F3=Exit	F4=CRetriev	F7=Up
F9=Swap		F12=Cancel			F8=Down

Figure 34. From Column Mapping panel showing **From column** mapping information deleted

4. Press the Exit function key (F3).

The Template Mapping panel is displayed showing the “To” column BONUS is now not mapped to any “From” column.

		Template Mapping							
FM/DB2 (DFA2)									
To		FMUSER.EEMP							
From		FMUSER.EMP							
Cmd	CL#	To Column name	Datatype	NI	CL#	From Column name	Datatype	NI	
**** Top of data ****									
—	1	EMPNO	CH(6)	NN	1	EMPNO	CH(6)	NN	
⋮									
—	12	SALARY	DEC(9,2)		12	SALARY	DEC(9,2)		
—	13	BONUS	DEC(9,2)						
—	14	COMM	DEC(9,2)		14	COMM	DEC(9,2)		
—	15	RID	CH(4)		6	PHONENO	CH(4)		
—	16	TSTAMP	TIMESTAMP						
**** End of data ****									
Command ==>								Scroll PAGE	
F1=Help		F2=Split	F3=Exit	F4=CRetriev	F5=RFind	F6=RunTemp			
F7=Up		F8=Down	F9=Swap	F12=Cancel					

Figure 35. Template Mapping panel showing the “To” column BONUS not mapped to any “From” column

**Note:** DB2 determines the default value for an unmapped column according to the definition of the column in the DB2 catalog.

### Changing the attributes for a “To” column

To change the attributes for a “To” column, enter E against the column name on the Template Mapping panel (Figure 31 on page 88) to display the Column Attributes panel.

## Mapping data

### RELATED TASKS

“Changing column attributes” on page 79

### Creating data for a column

If no mapping exists for a “To” column, and FM/DB2 is unable to match it to a “From”, FM/DB2 creates data for the column.

### RELATED TASKS

“Mapping data” on page 86

### Mapping using different templates

The mapping relationship is stored in the “To” template. The mapping information is the column number and the column name. If you reuse a template to copy, import, export, or load data, the mapping information is checked. FM/DB2 ensures that the column in the specified position has the specified name. If this is not the case, FM/DB2 indicates that the mapping has broken down, and gives you the option of either terminating the FM/DB2 function, or updating the mapping information in the “To” template.

This means that you can use a template that is different from the “From” template you used to set up the mapping, provided that the structure of the new template does not differ from the structure of the old template. That is, no columns that have been used in the mapping are in a different position or have a different name. The new “From” template can, however, have different selection conditions.

You can also use a “To” template as a “From” template. However, in this case, the mapping information is not relevant.

### Mapping contiguous columns

If you need to map contiguous columns, you might find it more convenient to use the SS, S*n*, or S\* commands.

If you select more than one column at a time, FM/DB2 displays the From Column Mapping panel for the next selected column each time you press the Exit function key (F3). If you are viewing the From Column Mapping panel for the last selected field and press the Exit function key (F3), File Manager returns you to the Template Mapping panel.

### RELATED TASKS

“Toggling the selection status of more than one column at a time” on page 74

### RELATED REFERENCES

“From Column Mapping panel” on page 631

“Template Mapping panel” on page 783

## Column mapping rules

FM/DB2 uses the rules shown in Table 2 on page 93 to determine if a given “From” column can be mapped to a given “To” column. “Yes” indicates that the mapping is valid. “No” indicates that the mapping is not valid.

**Note:** If mapping, you cannot select a “From” column with a data type that is incompatible with the data type of the “To” column. For example, Figure 33 on page 90 shows the two DATE “From” columns, HIREDATE and BIRTHDATE, as un-selectable for mapping to the numeric “To” column, BONUS.

Table 2. Column mapping rules

“From” column	“To” column				
	DATE	TIME	TIMESTAMP	Character	Numeric
DATE	Yes	No	No	Yes	No
TIME	No	Yes	No	Yes	No
TIMESTAMP	Yes <sup>1</sup>	Yes <sup>2</sup>	Yes	Yes	No
Character <sup>3</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes <sup>4</sup>	Yes	Yes <sup>5</sup>
Numeric <sup>6</sup>	No	No	No	No	Yes

**Notes:**

1. Conversion of TIMESTAMP data type to DATE data type results in truncation of time value. Data type conversion is not supported where the DB2 installation-defined format for dates is LOCAL.
2. Conversion of TIMESTAMP data type to TIME data type results in truncation of date and microsecond values. Data type conversion is not supported where the DB2 installation-defined format for time is LOCAL.
3. The category “character” includes CHAR and VARCHAR data types.
4. Character value must be in a valid format, depending on the DB2 installation-defined formats for date and time, otherwise the “To” column is set to the default value as specified by data create attributes. If the DB2 installation-defined format for dates or time is LOCAL, FM/DB2 is unable to validate the “From” column before inserting it into the “To” column.
5. The “From” column must consist only of numeric characters, and is treated as a numeric column.
6. The category “numeric” includes DECIMAL, NUMERIC, SMALLINT, INTEGER, REAL, DOUBLE, DOUBLE PRECISION, FLOAT, and DECFLOAT data types.

These rules describe how a validly mapped “From” column is moved to a “To” column. If the “To” column is:

<b>DATE</b>	If the “From” column has a data type of TIMESTAMP, only bytes 1–4 of the “From” column are moved to the “To” column; otherwise, the full four bytes of the “From” column are moved to the “To” column.
<b>TIME</b>	If the “From” column has a data type of TIMESTAMP, only bytes 5–7 of the “From” column are moved to the “To” column; otherwise, the full three bytes of the “From” column are moved to the “To” column.
<b>TIMESTAMP</b>	The full ten bytes of the “From” column are moved to the “To” column.
<b>Character</b>	The data is aligned at the leftmost character position and, if necessary, truncated or padded with spaces at the right.  If the “From” column is a numeric column, the absolute (unsigned) value is used. If the column is defined as signed and the sign occupies a separate character, that character is not moved, and the sending item is considered to be one less character than the actual size.

**Integer or packed**

The data is aligned on the assumed decimal point and, if necessary, truncated or padded with zeros. If an assumed decimal point is not explicitly specified in the column definition, one is assumed immediately to the right of the column.

If the “From” column is numeric, the data is moved as if both the “From” column and “To” column were described as signed.



If the “From” column is alphanumeric, the data is moved as if the “From” column were described as a signed numeric.

### Internal floating-point

A decimal point is assumed immediately to the left of the column. The data is aligned on the leftmost digit position following the decimal point, with the exponent adjusted accordingly.

### External floating-point

The data is aligned on the leftmost digit position, and the exponent adjusted accordingly.

#### RELATED TASKS

“Changing column attributes” on page 79

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## Creating a copybook from an FM/DB2 Template

FM/DB2 provides a sample REXX exec (FMN2CPYB) that you can use to create a PL/I or COBOL copybook from an FM/DB2 template. The exec is provided in FMN2SAM1.

To run the exec:

1. Copy FMN2CPYB to a REXX library allocated to your TSO session (for example, SYSPROC or SYSEXEC).
2. Issue the statement:

```
FMN2CPYB input_file output_file copybook_type
```

Where:

*input\_file*

The name of an FM/DB2 template. This is typically a member of a partitioned data set.

*output\_file*

The name of an LRECL=80 sequential file, or member of a partitioned data set. The output file contains the copybook derived from the template. Any existing data in the sequential file or member is overwritten.

*copybook\_type*

This parameter is optional. It specifies the type of copybook to be produced. Valid values are:

<b>COBOL</b>	COBOL copybook created.
<b>PLI</b>	PL/I copybook created.

## Chapter 4. Viewing and changing DB2 data

To view the contents of a DB2 table or view, use the FM/DB2 View Utility (option 1), the FM/DB2 Edit Utility (option 2), or the FM/DB2 Browse Utility<sup>1</sup> (option B).

### FM/DB2 View Utility

The FM/DB2 View Utility (option 1) allows you to view and temporarily change data, but without the ability to save any changes.

When you initiate the FM/DB2 editor with the View Utility, this is referred to as being in a "View editor session" (or just "View").

The FM/DB2 View Utility, similar to ISPF view, provides an FM/DB2 editor session that works essentially the same as the Edit Utility, but without the need for exclusive access to the data set. It presents you with an interface that is capable of holding your temporary changes to data. This may be useful, for example, for assessing a change but without any risk of altering live data. The first time you make a change to the data in a View editor session, FM/DB2 displays a warning as shown in Figure 36.

Process	Options	Utilities	Help				
FM/DB2 (DF72)							
Table View							
Top of 42							
Format TABL							
TABLE YEH.EMP	EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE
	#1	#2	#3	#4	#5	#6	#7
	CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)	DATE
PU-->	<U-->	1-->	-U	<U-->	1-->	<-NF	<->
*****	****	Top of data	****				
000001	000010	CHRISTINE<	I	HAAS<	A00	3978	01.01.1965
000002	000020	MICHAEL<	L	THOMPSON<	B01	3476	10.10.1973
000003	000030	SALLY<	A	KWAN<	C01	4738	05.04.1975
000004	000050	JOHN<	B	GEYER<	E01	6789	17.08.1949
000005	000060	IRVING<	F	STERN<	D11	6423	14.09.1973
000006	000070	EVA<	D	PULASKI<	D21	7831	30.09.1980
000007	000090	EILEEN<	W	HENDERSON<	E11	5498	15.08.1970
000008	000100	THEODORE<	Q	SPENSER<	E21	0972	19.06.1980
Save is not possible in a View session. Use Edit if you want to be able to save changes.							
Command ==>							Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetrie	F5=RFind	F6=RChange		
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel		

Figure 36. Warning pop-up displayed after first change in View editor session

When you exit from a View editor session by pressing the Exit function key (F3), if you have made a change to the data in the FM/DB2 editor session, FM/DB2 displays a warning as shown in Figure 37 on page 96.

1. For consistency with ISPF, the FM/DB2 Browse utility does not appear on the FM/DB2 main menu. You can, however, select the FM/DB2 Browse utility by typing the B command.

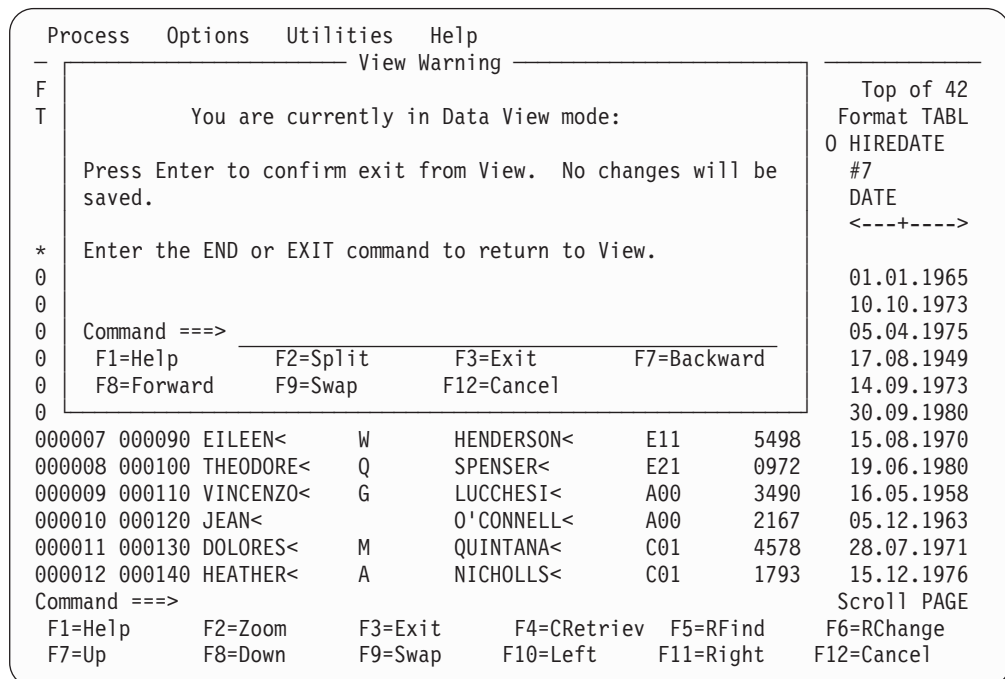


Figure 37. Warning pop-up displayed when exiting from a View editor session if changes made to data

### FM/DB2 Edit Utility

The FM/DB2 Edit Utility (option 2) allows you to view and change your data (by inserting, deleting and otherwise modifying the contents of a DB2 table or view), and save any changes you make.

When you initiate the FM/DB2 editor with the Edit Utility, this is referred to as being in an "Edit editor session" (or just "Edit").

### FM/DB2 Browse

The FM/DB2 Browse Utility<sup>1</sup> (option B) allows you to view data, but without the ability to save any changes.

When you start up the FM/DB2 editor in browse mode, this is referred to as being in a "Browse editor session" (or just "Browse").

To start up a Browse editor session, perform one of these actions:

- From the Primary Option Menu panel, enter the command<sup>2</sup>:  
B
- When you are in an FM/DB2 editor session, enter the command:  
BROWSE
- From a list of DB2 objects, where it is legitimate to do so, enter the command<sup>2</sup>:  
B

When you start up a Browse editor session, FM/DB2 displays the DB2 Browse entry panel.

#### RELATED REFERENCES

- Chapter 8, "Working with lists of DB2 objects," on page 243
- "Table Browse panel" on page 758
- "Table Edit panel" on page 761

2. For consistency with ISPF, the FM/DB2 Browse utility does not appear on the FM/DB2 main menu. You can, however, select the FM/DB2 Browse utility by typing the B command.

"Table View panel" on page 770  
 "DB2 Browse panel" on page 540  
 "BROWSE primary command" on page 805

These instructions are given within the context of the FM/DB2 editor. In most cases, you can perform these actions in View, Edit, or Browse in which case the term "editor" is used. Similarly, the term "FM/DB2 editor session" can indicate either a View editor session, an Edit editor session, or a Browse editor session.

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## Starting and ending FM/DB2 editor sessions

### Starting an FM/DB2 editor session

From the Primary Option Menu panel, to start your FM/DB2 editor session, select one of these:

**1 View**                      Displays the DB2 View panel.

**Note:** This option does not allow you to save any changes you make to the data.

**2 Edit**                        Displays the DB2 Edit panel.

**B Browse**                    Displays the DB2 Browse panel.

**Note:** This option does not allow you to save any changes you make to the data.

#### RELATED REFERENCES

"Primary Option Menu panel" on page 670  
 "DB2 View panel" on page 559  
 "DB2 Edit panel" on page 544

### Specifying the editor session mode: "normal mode" or "large mode"

The FM/DB2 editor can operate in two different modes, "normal mode" and "large mode".

#### Normal mode

To operate the FM/DB2 editor session in "normal mode", enter a value *other than* 0, \*, or ALL in the **Row count** field on the editor entry panel.

The FM/DB2 editor retrieves rows from the DB2 object and loads them into the editor until one of these conditions occurs:

- The end of the DB2 object is reached.
- The number of rows loaded into the editor equals the value specified in the **Row count** field.
- Available storage is exhausted.

For information about the amount of storage used by the FM/DB2 editor to store each row, see "Storage considerations" on page 106.

For information about limiting the number of rows loaded into an editor session, see "Restricting the rows to view by specifying row selection criteria" on page 107.

#### Large mode

To operate the FM/DB2 editor session in "large mode", enter 0, \*, or ALL in

## Starting and ending FM/DB2 editor sessions

the **Row count** field on the editor entry panel. The FM/DB2 editor retrieves rows from the DB2 object and loads them into the editor until one of these conditions occurs:

- The end of the DB2 object is reached.
- Approximately three screen's worth of rows has been loaded.

The number of rows displayed on the editor data panel (in tabular format) depends on the terminal emulation settings (24x80, 27x132, 40x132, and so on) and also the number of optional columns headers.

In "large mode", the FM/DB2 editor keeps only enough rows in memory to satisfy the current display requirements. You can scroll up or down as required to see all rows of the DB2 object.

In an Edit session in "large mode", the FM/DB2 editor also keeps any rows that have been changed in memory, regardless of the current display position. This can increase the storage requirement for the Edit session substantially if many rows are changed. For more information about limiting the number of rows loaded into an editor session, see "Restricting the rows to view by specifying row selection criteria" on page 107.

### Choosing the appropriate editor mode

The two editor modes, "normal mode" and "large mode", have different characteristics as outlined in Table 3. In most cases, you can use either mode to process a DB2 object.

Table 3. Characteristics of editor modes

	"Normal mode"	"Large mode"
Storage usage	Directly dependent on number of rows loaded, processing objects with large numbers of rows requires very large TSO region size, or not possible.	Independent of number of rows in the DB2 object. Storage use increases as rows in the object are changed.
DB2 requirements	Initial data load occurs quickly for small DB2 objects, more slowly as the size of the object increases. Once loaded scrolling within the DB2 object is very fast.	Initial data load occurs quickly for small DB2 objects, significantly more slowly as the size of the object increases. Once loaded, scrolling to nearby locations is fast, scrolling to distant locations may be slow.
Auto commit feature	Available.	Not available. If selected the auto commit option is disabled. The first attempt to auto commit data changes displays a warning message.
Data visibility	Once loaded, the data in the editor session is static and does not change, even if other processes alter the data.	<p>When an <i>insensitive cursor</i> is used, the data displayed in the editor session is static and does not change, even if other processes alter the data.</p> <p>When a <i>sensitive cursor</i> is used, the data displayed in the editor session might change if other processes delete or update rows. Rows inserted by other processes are not visible.</p> <p><b>Note:</b> For a description of <i>insensitive cursor</i> and <i>sensitive cursor</i>, see "Editor Options (2 of 7) panel" on page 575.</p>
Moving rows	Allowed.	Prohibited.
Sort command	Allowed.	Prohibited.

## Specifying the start position for your FM/DB2 editor session

You can load rows from the DB2 object being processed starting at the first row, or you can start at some other point.

The **Start position** entry field on the editor entry panel specifies the required start position. The default is 1.

When the FM/DB2 editor is operating in "normal mode", the editor session contains rows starting at the specified start position. The total number of rows loaded is either the value specified in **Row count**, or some lesser number if the end of the DB2 object was encountered before the required number of rows were loaded. You cannot scroll up to see the rows that were skipped.

When the FM/DB2 editor is operating in "large mode", the editor session initially contains rows starting at the specified start position. You can scroll up to see rows prior to the start position, as far as the first row of the DB2 object if required.

**Usage Note:** You can use the **Start position** value to limit the rows loaded in the editor session, or to start midway through a DB2 object. For example, if you have a large table of, say, a million rows containing people's names ordered by surname and you were only interested in names starting with S, you could enter a start value of, say, 700,000 assuming you knew this is the approximate start position for surnames starting with "S".

## Setting options for the current FM/DB2 editor session

To set options for the current FM/DB2 editor session, display the first of the seven Editor Options panels by entering one of the values shown here against **Edit options** on the DB2 View or DB2 Edit panel:

### A "/" or an "A"

Displays the first FM/DB2 Editor Options panel, prior to displaying the data for the DB2 object being processed. When the first Editor Options panel is displayed, you can navigate to one or more of the other Editor Options panels.

**Usage Note:** Entering an "A" in an option field changes the behavior of the dialog so that the Editor Options panel is ALWAYS displayed. Use the "/" character when you only need to refer to the editor options on a single occasion. The "/" is cleared after the option is processed returning the dialog to the default behavior, which is to NOT show the various Editor Options panels.

### A number in the range 1–7

Displays the *n*th FM/DB2 Editor Options panel directly where *n* is the value entered.

**Note:** Any options you set on the Editor Options panels apply for the current FM/DB2 editor session only. When you exit from the FM/DB2 editor session, the editor options revert to the global editor options.

In Edit, an exception to this is the audit option if the installation settings for the currently connected DB2 sub-system specifies AUDIT=OPTIONAL,OFF. In this case there is no difference between the audit option set using the global options, or for an individual Edit session. Further, any value specified is discarded at the end of the FM/DB2 session.

### RELATED REFERENCES

"DB2 View panel" on page 559

"DB2 Edit panel" on page 544

"Editor Options (1 of 7) panel" on page 571

## Validating and saving changes with an FM/DB2 editor session

In Edit only, you can make changes to the data and save those changes to DB2.

An Edit session of a DB2 object has important differences when compared to an Edit session of a data set. These differences need to be understood to make the most effective use of an FM/DB2 Edit session.

DB2 data is accessed by calls to DB2. Some important DB2 concepts are discussed here because an understanding of these concepts is central to understanding how the FM/DB2 editor operates:

### DB2 unit of work

A DB2 unit of work commences when a process initially connects to, or accesses data from, DB2. The unit of work continues until the process ends the connection or issues an explicit DB2 COMMIT or ROLLBACK statement. Between the start and end of the unit of work, the process may make many calls to DB2 to read (fetch) change (update), insert, or delete rows.

### DB2 COMMIT

This is a DB2 command that is used to signal the end of the current unit of work. A DB2 commit occurs automatically when a process ends; however, a DB2 commit may also be issued to finalize any pending changes to DB2 data. Issuing a DB2 commit is an irrevocable step. After the commit, it is not possible to reverse (back out) any changes made since the start of the unit of work

### DB2 ROLLBACK

This is a DB2 command that is used to signal that all pending changes for the current unit of work are to be reversed (backed out). After the rollback is processed, the DB2 data is in the same state that it was in at the start of the unit of work, or at the last commit point.

For more information about DB2 units of work, commit, and rollback, see "DB2 Concepts (Application Processes, concurrency and recovery)" in the *SQL Reference* manual, for the appropriate version of DB2.

## Ordering of rows within a DB2 object is not guaranteed

The relational model on which DB2 is based does not require data within a DB2 table to be in any specific order. This is not to say that data in a DB2 object is not stored in a particular order as this is certainly the case. In addition, a number of methods can be used (for example, CLUSTERING) to influence the way rows are stored in a DB2 table. In terms of the FM/DB2 editor, these considerations apply:

- Data is read from DB2 in the order DB2 delivers it to FM/DB2. Unless there is an ORDER BY clause for the data entered explicitly (on the Column Selection/Edit panel) or implicitly (for example, when processing a VIEW and the VIEW includes an ORDER BY clause), no assumptions should be made about the relative positions of any two rows.
- Moving rows from one position to another in an FM/DB2 Edit session has no effect on the way FM/DB2 stores the data in the table.



- When the editor is operating in "large mode", moving rows from one position to another is disabled.

### DB2-related considerations when changing data in an FM/DB2 Edit session

An FM/DB2 Edit session is a DB2 unit of work, commencing at the start of the Edit session and continuing until one of these events occurs:

- The Edit session ends when END is pressed.
- The Edit session ends when CANCEL is pressed.
- A DB2 commit point is issued as part of an FM/DB2 SAVE primary command.
- A DB2 commit point is issued automatically because the number of successful changes reached the **Auto-commit count** value specified on the Editor Options (6 of 7) panel.

Within an FM/DB2 Edit session, multiple changes can be made to the data; you can send these changes to DB2 for validation with the SAVE primary command. At any time, the changes can be backed out (rolled back) to the state the data was in at the start of the Edit session, as long as a DB2 commit point has not been issued. This is unlike an the edit of a data set where typically, once changes have been saved, it is not possible to return to an earlier version of the data.

Changes made during an FM/DB2 Edit session are processed one row at a time. This is unlike the edit of a data set where, typically all of the changes made are written all together to the data set when the data is saved and the existing data set is completely replaced by the new one.

Changes made to the data in a DB2 object are validated by DB2 prior to the changes being accepted by DB2. This is unlike changes that can be made to a data set, where typically there is no validation of the data and issuing a SAVE or END primary command is certain to save any pending changes.

DB2 might reject changes for many reasons. These are some, but not all, of the reasons that a change may be rejected:

- Inappropriate values for the data type of a column. For example, entering non-numeric data in a numeric column, or numeric data that is out of range in a numeric column.
- Violation of any check constraints applying to the DB2 object. For example, a column defined as CHAR(1) used to store the gender of a person, constrained to accept a value of only "M" or "F".
- Violation of any referential integrity rules applying to the DB2 object. For example, attempting to delete a primary key for which there are dependent rows in another table, and the DELETE rule for the constraint is RESTRICT
- Attempts to insert a duplicate with respect to a unique index defined on the DB2 object.

Within an FM/DB2 Edit session, you can use these methods to validate, and optionally commit, pending changes to DB2:

- Issue an explicit SAVE primary command.
- Press the Enter key with no other pending changes (the auto save feature). (See the **Save data** option on "Editor Options (6 of 7) panel" on page 590.)
- Press the END key (normally PF3) to end the Edit session. ( See "Ending an FM/DB2 editor session" on page 102.)



## Starting and ending FM/DB2 editor sessions

When you issue a SAVE primary command, any pending changes made are processed one row at a time. Each change results in a single INSERT, UPDATE, or DELETE SQL statement. If the change is unsuccessful, FM/DB2 marks the row in error in the Edit session. You must then correct the error before you can complete (commit) the data changes to DB2.

FM/DB2 may issue DB2 commit points automatically during the SAVE process, if a non-zero value has been specified for the **Auto-commit count**, specified on the Editor Options (6 of 7) panel. Such commit points are issued whenever there have been the specified number of successful changes; it is possible for multiple commit points to be issued during the SAVE process. The commit points are issued regardless of whether errors are encountered when processing other rows.

At the end of the SAVE process, FM/DB2 may also issue an explicit DB2 commit, depending on the setting of the **Commit when save issued** and **Commit when no save errors** options. (See "Editor Options (6 of 7) panel" on page 590.)

**Usage note:** When processing a DB2 object that is subject to constraints, frequent validation of any changes made can avoid frustration at the end of the editor session (when PF3 is pressed). You can issue the SAVE command repeatedly during an Edit session to validate the changes just made, while retaining the ability to cancel the entire Edit session. Remember that, until a DB2 commit point is issued, the entire unit of work can be rolled back. In "normal mode", you also have the option to auto-commit changes when you issue a SAVE primary command. This option is disabled in "large mode".

### RELATED REFERENCES

"SAVE primary command" on page 851

"Editor Options (6 of 7) panel" on page 590

## Ending an FM/DB2 editor session

In View or Browse:

**To end your FM/DB2 editor session:**

Press the Exit function key (F3) or the Cancel function key (F12).

In Edit:

**To end your FM/DB2 editor session and save any changes you have made:**

Enter END on the command line, or press the Exit function key (F3).

**To present the changes you have made to the current table to DB2 for validation, without ending the FM/DB2 editor session:**

Use the SAVE primary command.

When you use the SAVE command, FM/DB2 processes any changes made one line at a time. Each change results in either an SQL INSERT, UPDATE or DELETE operation, DB2 may reject one or more of your changes. This is unlike an editor session of a normal data set, where generally all changes are made, or no changes are made.

Note the following about the SAVE process:

- FM/DB2 issues DB2 COMMIT points according to these commit options:
  - **Commit when save issued**
  - **Commit when no save errors**
  - **Auto-commit count**

The settings for these options are either the global settings, or as specified for this FM/DB2 editor session only. The first two options influence whether a DB2 COMMIT is issued at the end of the SAVE process. The third option influences whether DB2 COMMIT points are issued during the SAVE process.

- Issuing a DB2 COMMIT finalizes all pending changes to the data, and is an irrevocable process. After the COMMIT is issued, you can cancel the editor session; however, any changes made since the start of the edit session are *not* backed out. Conversely, if no COMMIT has been issued, you can back out *all* changes made during the current editor session, regardless of how many SAVE commands have been issued.
- When the editor is operating in "large mode", any automatic DB2 COMMIT is disabled. Your changes are still presented to DB2 and validated; however, the final COMMIT is deferred until you end the editor session.

**To end your FM/DB2 editor session without saving your changes (that is, since the previous successful commit point):**

Enter CANCEL (or CAN) on the command line, or press the Cancel function key (F12). If you have made any changes to the data, FM/DB2 displays a message box asking you to confirm that you want to discard the changes.

### Notes:

1. If there are dependent related FM/DB2 editor sessions still active:
  - You need to end these sessions before you end the current (parent) FM/DB2 editor session (unless you cancel the session).
  - Canceling the current FM/DB2 editor session also cancels all the dependent related FM/DB2 editor sessions.
2. When the editor is operating in "large mode", the auto commit feature is disabled. Canceling the current FM/DB2 editor session results in the loss of all changes made during the editor session, even if the SAVE command has been used to validate data changes.

### RELATED TASKS

"Editing related tables" on page 150

"Specifying the editor session mode: "normal mode" or "large mode"" on page 97

### RELATED REFERENCES

"CANCEL primary command" on page 806

"SAVE primary command" on page 851

"Editor Options (6 of 7) panel" on page 590

## Starting another FM/DB2 editor session

When you are in an FM/DB2 editor session, you can start another FM/DB2 editor session by issuing the BROWSE, EDIT, VIEW, or REDIT primary commands.

### BROWSE, EDIT, VIEW commands

The BROWSE, EDIT, and VIEW primary commands start another FM/DB2 editor session and display the Browse, Edit, or View entry panel respectively.

The new FM/DB2 editor session is stacked on top of the current FM/DB2 editor session. If you specify a DB2 object owner and DB2 object name, the owner and name fields are pre-filled on the entry panel for the new FM/DB2 editor session.

## Starting and ending FM/DB2 editor sessions

**Note:** To start an FM/DB2 editor session in Browse mode from the Primary Option Menu panel, enter the abbreviated form of the BROWSE command, B, on the command line.

### Examples:

<b>VIEW</b>	Starts a new FM/DB2 editor session, in View mode.
<b>BRO DSN8910.EMP</b>	Starts a new FM/DB2 editor session, in Browse mode. The owner field is set to 'DSN8910' and the name field is set to 'EMP', on the Browse entry panel for the new editor session.
<b>EDIT EMP</b>	Starts a new FM/DB2 editor session, in Edit mode. The name field is set to 'EMP', on the Edit entry panel for the new editor session.

To exit the new FM/DB2 editor session and return to the current FM/DB2 editor session, press the End or CANCEL key.

### REDIT command

The REDIT primary command displays information about tables related by a DB2 referential integrity (RI) constraint, to the DB2 object currently being edited. The command is context and cursor sensitive.

### RELATED REFERENCES

- “Listing related tables” on page 151
- “BROWSE primary command” on page 805
- “EDIT primary command” on page 816
- “VIEW primary command” on page 859
- “REDIT primary command” on page 845
- “Related tables panel” on page 699

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## Specifying the DB2 object you want to view

This section describes how you specify the DB2 object you want to view when you use the FM/DB2 View Utility (option 1), the FM/DB2 Edit Utility (option 2), or the FM/DB2 Browse Utility (option B) to view DB2 data or, in the case of edit, to optionally change DB2 data. The descriptions apply to the DB2 View panel, DB2 Edit panel, and DB2 Browse panel respectively.

To specify the table you want to view, use the **Name** entry field and, optionally, the **Location**, **Owner**, **Database**, and **Table space** entry fields.

To specify the template that you want FM/DB2 to use when viewing the data, use a combination of the **Template** and **Template usage** entry fields. You can:

- Specify a template that describes the format of the DB2 object:
  - Use **Data set name**, and optionally **Member**, to specify the template.
  - Select 1 (Above).
- Use the last (previously used) template:
  - Select 2 (Previous).

Any values in the Data set name and Member fields are ignored.
- Use FM/DB2 to generate a template using the information in the DB2 catalog:
  - Select 3 (Generate from table). This is the default setting.

Any values in the Data set name and Member fields are ignored.

- Use FM/DB2 to generate a template using the information in the DB2 catalog and store the generated template using the name you specify (if the data set already exists, FM/DB2 replaces it):
  - Use **Data set name**, and optionally **Member**, to specify the name that you want FM/DB2 to use if storing the generated template.
  - Select 4 (Generate/Replace).

You can select this option to change the options for the current editor session:

### Edit options

Enter one of these:

#### A "/" or an "A"

Displays the first FM/DB2 editor options panel, prior to displaying the data for the DB2 object being processed.

#### A number in the range 1–7

Displays the *n*th FM/DB2 editor options panel directly where *n* is the value entered.

Any options that you set last only for the duration of the current Edit session, and override any conflicting global options. To permanently change the Edit options, select option 0.2.

You can select the following options by entering a "/" or an "A":

### Edit template

Select this option to edit the template before editing the data.

### Re-edit template

Select this option to control the navigation between panels within the Edit dialog. This option controls the behavior of the F3 and F12 keys when pressed from within an Edit session.

### Create audit trail

Select this option to generate an audit trail report of all successful modifications to DB2 data made during the current Edit session.

**Note:** This option is not displayed if SAF-rule controlled auditing is not in effect. See "SAF-rule controlled auditing" on page 51.

**Note:** Entering an "A" in an option field changes the behavior of the dialog so that the appropriate options panel is *always* displayed. If you only need to refer to an options panel on one occasion, use the "/" character. The "/" is cleared after the option is processed, thereby returning the dialog to the default behavior, which is to *not* show the various option panels.

### RELATED TASKS

"Selecting options on FM/DB2 panels" on page 28

"Setting options for the current FM/DB2 editor session" on page 99

"Editing a template" on page 63

### RELATED REFERENCES

"DB2 Browse panel" on page 540

"DB2 Edit panel" on page 544

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### Restricting the data that FM/DB2 loads from DB2

When you view a DB2 table or view in an FM/DB2 editor session, FM/DB2 accesses DB2 to obtain a copy of the data in the table or view. This copy of the data is loaded into the FM/DB2 editor. In normal circumstances, the data for every column of the DB2 object is retrieved. This occurs regardless of whether you have deselected one or more columns using the template editor.

However, you may find that you want to restrict the data that FM/DB2 loads, either because you are only interested in data that satisfies certain selection criteria, or simply to limit the number of rows of data that FM/DB2 retrieves.

The following sections discuss the ways in which you can restrict the data that FM/DB2 loads.

#### RELATED TASKS

“Storage considerations”

“Viewing large tables or views” on page 107

“Restricting the rows to view by specifying row selection criteria” on page 107

“Restricting the rows to view with the “Row count” entry field” on page 108

“Interactively developing row selection criteria” on page 107

“Using Select Statement Edit to limit the data retrieved by FM/DB2” on page 108

“Specifying the editor session mode: “normal mode” or “large mode”” on page 97

“Specifying the start position for your FM/DB2 editor session” on page 99

### Storage considerations

If you are working with large DB2 tables or views, you may need to consider how much space is required in the editor to store the copy of the DB2 object.

The FM/DB2 editor uses storage in the TSO user's address space. The size of the address space is governed by the TSO region size, which may be limited by your systems administrator. As a guide, the amount of space needed by the FM/DB2 editor is the number of rows loaded, multiplied by the number of bytes of data in each row, multiplied by an editor overhead.

For example, to load 100,000 rows of 20 bytes into the FM/DB2 editor, requires at least 2MB of storage. The editor overhead factor is at least 1 and can be as much as 3, so up to 6MB of storage may be needed.

To take another example, if each row occupies 1000 bytes, every 1024 rows loaded requires about 1MB of storage. Therefore to load 100,000 such rows, at least 100MB of storage is required.

When the editor is operating in “normal mode”, the number of rows loaded remains fixed and can be used to estimate the total storage requirements.

When the editor is operating in “large mode”, the number of rows loaded is approximately three times the number of rows visible in TABL display format. This number remains unchanged regardless of any scrolling operations. When changes are made to rows, those rows remain in the editor. Therefore you may still encounter storage problems if you perform edit operations that change large numbers of rows in the table.

When you need to change large numbers of rows, consider changing the table by direct execution of SQL statements.

### Viewing large tables or views

If the DB2 table or view requires more storage than is available in the TSO region, you will *have* to restrict the data that FM/DB2 loads from DB2. The most convenient way to do this is to select "large mode" by specifying ALL, 0 or \* in the **Row count** field on the entry panel.

When processing an object containing large object columns, FM/DB2 requires at least as much memory (virtual storage) as that needed to store one row of data from the object, with every large object column at the maximum possible size for that column. This may not be possible with a small TSO region size and large object data in the megabyte (or greater) range. To process an object with large object columns, create a DB2 view of the object without the large object columns present, and then process the view.

The following sections describe other ways in which you can restrict the data that FM/DB2 loads.

#### RELATED REFERENCES

"Specifying the editor session mode: "normal mode" or "large mode"" on page 97

### Restricting the rows to view by specifying row selection criteria

When you specify row selection criteria, FM/DB2 retrieves only those rows that match your criteria from DB2. Only these rows are loaded into the DB2 editor. Specifying row selection criteria is usually the most convenient and efficient method for restricting the data that FM/DB2 loads from DB2.

This method applies to both "normal mode" and "large mode".

#### RELATED TASKS

"Selecting rows" on page 64

"Specifying the editor session mode: "normal mode" or "large mode"" on page 97

### Interactively developing row selection criteria

Sometimes you may need to view or edit a DB2 table or view with which you are not familiar. You may only need to view (and possibly change) a few rows of the table or view. FM/DB2 View and FM/DB2 Edit provide options to assist in interactively identifying the rows of interest, and then restricting the data loaded by FM/DB2 using row selection criteria.

To use this method, you need to alter the behavior of the editor dialog by setting the **Edit template** and **Re-edit template** options (use "A"). You can then alternate between the data display and the Column Selection/Edit panels, refining the row selection criteria until you have identified exactly the rows you require.

#### RELATED TASKS

"Selecting options on FM/DB2 panels" on page 28

"Selecting rows" on page 64



## Restricting the data that FM/DB2 loads from DB2

### Restricting the rows to view with the “Row count” entry field

If you just want to limit the volume of data that FM/DB2 retrieves from DB2, use the **Row count** entry field on the DB2 View panel or the DB2 Edit panel to specify the number of rows of DB2 data you want.

You can use this entry field to select "large mode" by typing ALL, 0, or \* in the field.

If the maximum number of rows was retrieved, the message “Limit of Rows Retrieved” appears immediately below the last row (in TABL display format).

You can use this entry field when viewing or editing large tables, in combination with the **Start position** entry field, to show small portions of the table. You can then specify row selection criteria that limit rows retrieved to those of interest.

#### RELATED REFERENCES

“DB2 View panel” on page 559

“DB2 Edit panel” on page 544

### Restricting the rows to view with the “Start position” entry field

In some situations, the rows of interest may be located together in the table, but not necessarily at the beginning. In this case, if you know the approximate starting row number, you can specify a start position value in the **Start position** entry field. FM/DB2 skips rows until the specified start position and then loads rows from that point.

In "normal mode", the **Row count** value applies from the starting row, not the beginning of the table. Once the rows have been loaded you cannot scroll up to see the skipped rows.

In "large mode", FM/DB2 loads rows from the start position until the limits discussed in ... are reached. In "large mode", you can scroll up from the start position to the first row of the table if required.

#### RELATED REFERENCES

“DB2 View panel” on page 559

“DB2 Edit panel” on page 544

### Using Select Statement Edit to limit the data retrieved by FM/DB2

You can use the “Enter, execute and explain SQL statements” function (option 4.3) to enter a SELECT statement and display the results in an FM/DB2 editor session. In general, if you want to view or edit a DB2 table or view, View (option 1) and Edit (option 2) are recommended. However, you can specify the columns to retrieve using option 4.3.

For example, the following statement retrieves all columns from the DSN8610.EMP table:

```
SELECT * FROM DSN8610.EMP
```

However, the following statement retrieves only the listed columns:

```
SELECT EMPNO, FIRSTME, MIDINIT, LASTNAME, WORKDEPT, PHONENO,  
HIREDATE, JOB, EDLEVEL, SEX, BIRTHDATE FROM DSN8610.EMP
```

You might use this method when editing a table with many columns, most of which are of no interest to you. Alternatively, if the DB2 object has a “wide” row,

omitting long VARCHAR or VARGRAPHIC columns may dramatically reduce the amount of data retrieved by FM/DB2 and loaded into the editor.

**Note:** When you omit columns from a DB2 object, you may find that not all edit operations are possible. For example, inserting a new row will fail if any of the omitted columns is defined as NOT NULL.

### RELATED TASKS

“View and Edit options (options 1 and 2)” on page 48

“Storage considerations” on page 106

“Entering, executing, and explaining SQL statements” on page 354

### RELATED REFERENCES

“DB2 View panel” on page 559

“DB2 Edit panel” on page 544

“Editor Options (1 of 7) panel” on page 571

---

## Viewing data in an FM/DB2 editor session

When you view a DB2 table or view in an FM/DB2 editor session, you can:

- Locate a specific row or column
- Search the data for a specific string or numeric value
- Select a display format for the data
- Scroll or sort the data

### Count of rows fetched in an FM/DB2 editor session

When FM/DB2 first displays data in an FM/DB2 editor session, it shows the number of rows that were fetched (“*nn* rows fetched”). The count of rows fetched is shown in the top left corner, on either the second line (if the command line is at the bottom of the display) or third line (if the command line is at the top of the display), and persists until you press Enter or any function key.

### Locating a row

To move to a particular row number, use the LOCATE primary command. In an FM/DB2 editor session, rows are numbered from 1 upwards and the row number is shown in the prefix area (TABL display mode) or in the top right-hand part of the screen (SNGL display mode). For example, to move to row 42, enter the following command:

```
LOCATE 42
```

In TABL display format, this command scrolls the display (either forwards or backwards) so that row number 42 is displayed at the top of the screen. In SNGL display format, the display changes so that row number 42 is displayed.

In an FM/DB2 editor session, you can also use the LOCATE primary command to move to a row to which a particular label has been assigned. For example, to move to the row labeled “.HERE”, enter the following command:

```
LOCATE .HERE
```

In an FM/DB2 editor session, if in TABL display format, this command scrolls the display (either forwards or backwards) so that the row labeled “.HERE” is at the top of the screen. In SNGL display format, the display changes so that the row, previously labeled “.HERE” in TABL display format, is displayed.



## Viewing data in an FM/DB2 editor session

### RELATED TASKS

- “TABL display format” on page 119
- “SNGL display format” on page 121
- “Assigning labels to rows” on page 116

### RELATED REFERENCES

- “LOCATE primary command” on page 836

## Locating a column

You can use the LOCATE primary command to move to a particular column. You can specify either a DB2 column number, or part or all of a column name.

You specify a DB2 column *number* by preceding the column number with the “#” symbol (for example, #4). DB2 column numbers are shown on the Column Selection/Edit panel, and optionally in both TABL and SNGL display formats when you view data. (To display column numbers, you must select the **Show column number** option on the third Editor Options panel.)

You specify a DB2 column *name* by typing all or part of the column name, with or without quotation marks.

When FM/DB2 finds the specified column, it scrolls the data so that the matching column is displayed on the left of the screen (in TABL display format), or at the top of the screen (in SNGL display format). In addition, after FM/DB2 has found the specified column, in SNGL display format if you press F11 (to display the following record) or F10 (to display the preceding record), the data is scrolled to show the matching column at the top of the screen for each record displayed. If you change to TABL display format, the data is scrolled so that the matching column is displayed on the left of the screen.

### RELATED TASKS

- “TABL display format” on page 119
- “SNGL display format” on page 121
- “View and Edit options (options 1 and 2)” on page 48
- “Setting options for the current FM/DB2 editor session” on page 99

### RELATED REFERENCES

- “LOCATE primary command” on page 836
- “Column Selection/Edit panel” on page 419
- “Editor Options (3 of 7) panel” on page 579

## Specifying the column number or column name

To locate a column, you must specify one of the following:

- a DB2 column number
- a column name, or
- part of a column name

The following command locates column 4 in the data:

```
LOCATE #4
```

and either of the following commands locates column EMPNO in the data:

```
L EMPNO
```

```
L 'EMPNO'
```

If you specify part of column name, the LOCATE command matches any column that contains the specified string within the column name. For example,

```
L NO
```

locates both EMPNO and DEPTNO.

**Using the FLD parameter:** The FLD parameter indicates to FM/DB2 that the string following the FLD keyword is the name or part of the name of the column you want to locate. You use the FLD parameter to resolve any ambiguity that might exist between column names and other command parameters.

You *must* specify the FLD parameter before the string, if the search string is "NEXT", "PREV", "FIRST", "LAST", "FLD", starts with "#", or is a number.

For example, to locate a column name containing the # symbol such as #ITEMS, use the following command:

```
L FLD #ITEMS
```

The command L #ITEMS results in an error as FM/DB2 is expecting the # symbol to be followed by a numeric DB2 column number.

### Specifying the search direction and starting point

By default, the LOCATE primary command searches for the next occurrence of the specified column name, starting at the column currently displayed on the left of the screen (in TABL display format), or at the top of the screen (in SNGL display format).

You can control the direction and scope of the column name search by entering one of the following optional parameters:

- NEXT
- PREV
- FIRST
- LAST

The following sections describe how you use each of the preceding parameters.

**Using the NEXT parameter:** NEXT is the default value. Both of the following commands search for the next column name containing the string "NO":

```
L NEXT 'NO'  
L NO NEXT
```

In TABL display format, the preceding commands start at (but exclude) the column currently displayed on the left of the screen and scan right to find the first column name that is either "NO", or contains the string "NO" (for example, NO, EMPNO, DEPTNO and NOMINAL all contain the string "NO"). The search ends when either a match occurs, or the last column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed on the left of the display.

In SNGL display format, the preceding commands start at (but exclude) the column currently displayed at the top of the screen and scan down to find the first matching column name. The search ends when either a match occurs, or the last column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed at the top of the display.

## Viewing data in an FM/DB2 editor session

**Using the PREV parameter:** Both of the following commands search backwards for the next column name containing the string "NO":

```
L PREV NO  
L NO PREV
```

In TABL display format, the preceding commands start at (but exclude) the column currently displayed on the left of the screen and scan left to find the first column name that is either "NO", or contains the string "NO". The search ends when either a match occurs, or the first column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed on the left of the display.

In SNGL display format, the preceding commands start at (but exclude) the column currently displayed at the top of the screen and scan up to find the first matching column name. The search ends when either a match occurs, or the first column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed at the top of the display.

**Using the FIRST parameter:** Both of the following commands search for the first column name containing the string "NO":

```
L FIRST NO  
L 'NO' FIRST
```

In TABL display format, the preceding commands start at the first column for the DB2 object and scan right to find the first column name that is either "NO", or contains the string "NO". The search ends when either a match occurs, or the last column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed on the left of the display.

In SNGL display format, the preceding commands start at the first column for the DB2 object and scan down to find the first matching column name. The search ends when either a match occurs, or the last column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed at the top of the display.

**Using the LAST parameter:** Both of the following commands search for the last column name containing the string "NO":

```
L LAST NO  
L NO LAST
```

In TABL display format, the preceding commands start at the last column for the DB2 object and scan left to find the last column name that is either "NO", or contains the string "NO". The search ends when either a match occurs, or the first column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed on the left of the display.

In SNGL display format, the preceding commands start at the last column for the DB2 object and scan up to find the first matching column name. The search ends when either a match occurs, or the first column of the DB2 object is encountered. If a matching column name is found, FM/DB2 scrolls the data so that the matching column is displayed at the top of the display.

## Finding a string

To search the data for a specific string, use the FIND primary command (which you can abbreviate as F or /).

For example, to search for the next occurrence of the string “Golden” in any mix of uppercase and lowercase, enter the following on the command line:

```
F GOLDEN
```

## Repeating the search

To move the cursor to the next occurrence of the search string, issue the RFind primary command or press the RFind function key (F5).

**Note:** RFind works from the cursor position. When you use the RFind function key (F5), the cursor remains in the body of the data and pressing the key moves to the next occurrence of the string. However, if you type the RFind primary command on the command line, you need to reposition the cursor on the last occurrence of *string* and then press Enter in order to find the next occurrence.

To find the same string as you specified on the previous FIND primary command, specify an asterisk (\*) as the search string.

## Handling long strings

For character columns (CHAR, VARCHAR), you can specify a search string up to 100 characters long. However, when you are dealing with a long search string, you may find that you cannot fit the whole FIND command (including other parameters) on the command line. To overcome the problem, do one of the following to display an Extended Command Entry pop-up panel:

- Enter FX (for Find Extended)
- Enter the FIND command (or one of its abbreviations, such as F or /) *with no parameters*

**Note:** If you have previously used the FIND or CHANGE commands in the current FM/DB2 editor session, to display the Extended Command Entry pop-up panel in this way, you will need to first use the RESET command before entering the FIND command (or one of its abbreviations) without any parameters. Alternatively, enter FX.

The Extended Command Entry pop-up panel contains five lines (each 50 characters long) that you can use to enter all the FIND command parameters (but not the actual keyword FIND or any of its abbreviations). FM/DB2 treats the five lines on the pop-up panel as contiguous, allowing you to specify a long search string, the DB2 column number and optionally any other parameters, using up to 250 characters in total.

**Note:** You can continue the search string (or any other parameter) from the last position on one line of the pop-up panel to the first position of the next line. However, this does not mean that you need to completely fill a line before using the next line. For example, you can specify the search string on the first of the five lines, and the DB2 column number (specified as #*n*) on the next line. If you do not use all of a line, FM/DB2 treats the unused part of the line as a single space.

Figure 38 on page 114 shows the Extended Command Entry pop-up panel for the FIND command. In this example, FM/DB2 finds any previous occurrences of a

## Viewing data in an FM/DB2 editor session

long string (78 characters) in DB2 column 3.

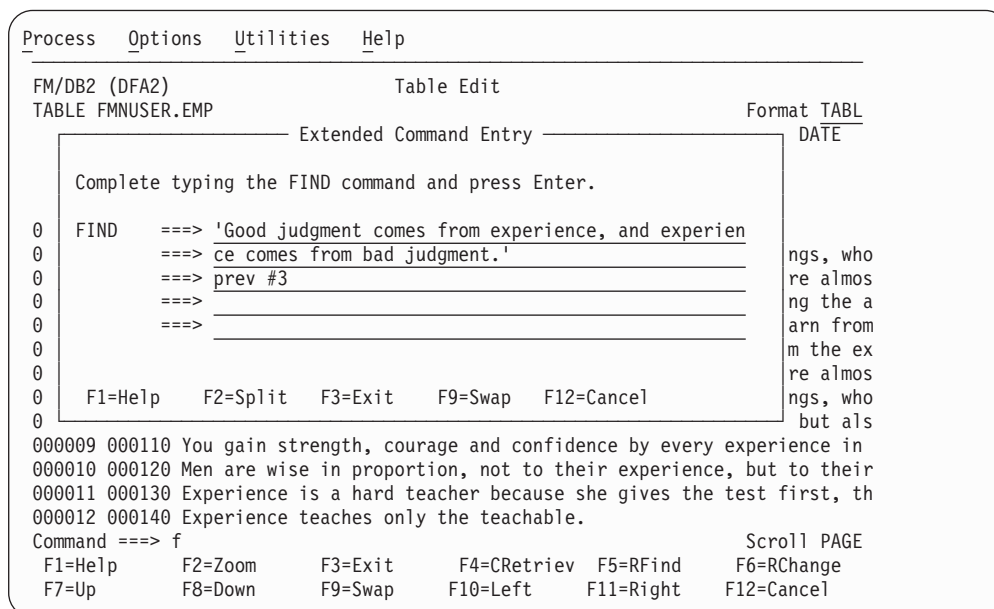


Figure 38. Extended Command Entry pop-up panel for the FIND command showing contiguous nature of entry lines

### RELATED REFERENCES

“FIND primary command” on page 825

## Finding data within specific columns

You can optionally limit the effects of primary commands to a specified column, a list of columns, or one or more ranges of columns.

You specify the columns to be searched using *#n* column references. These are displayed above each column in TABL display format, or next to each column in SNGL display format. The search string is found only if it is completely contained within one of the specified columns.

### Specifying a list of columns

When you specify a list of columns, you must either:

- Enclose the column references (optionally separated by commas) in parentheses, or
- Separate the column references with commas but without any intervening spaces.

These are valid lists of columns:

```
#17
(#17)
(#17 #22)
(#17, #22)
#17,#22
```

These are invalid lists of columns:

```
#17 #22
#17, #22
```

The search string is found if it is completely contained within one of the specified columns. For example, the following command excludes all records containing the characters “the” (in any mix of uppercase and lowercase) in column #5:

```
EXCLUDE ALL the #5
```

The following command finds the next record containing an uppercase letter A in column #8 or #9:

```
FIND C'A' #8,#9
```

### Specifying ranges of columns

You specify a range of columns by nominating the first and last column reference of the range, separated by a hyphen, with or without intervening spaces. You can optionally enclose the range in parentheses.

These are valid ranges of columns:

```
#17-#19
#17 - #19
(#17-#19)
(#17 - #19)
```

To specify more than one range of columns:

- Enclose each column range in parentheses (optionally separated by commas), or
- Separate each column range with commas, but without any intervening spaces.

These are valid ranges of columns:

```
(#8-#11) (#17-#19) (#24-#25)
(#8-#11), (#17-#19), (#24-#25)
#8-#11,#17-#19,#24-#25
```

These are invalid ranges of columns:

```
#8-#11 #17-#19 #24-#25
#8-#11, #17-#19, #24-#25
```

#### Notes:

1. Column ranges can overlap. For example, #2-#7, #5-#9. In this case, the result is a consolidated single column range equivalent to #2-#9.  
 “TABL display format” on page 119  
 “SNGL display format” on page 121  
 “Searching numeric columns” on page 118  
 “Excluding rows” on page 127

#### RELATED REFERENCES

- “CHANGE primary command” on page 808
- “EXCLUDE primary command” on page 818
- “FIND primary command” on page 825

## Finding a string within specific portions of the data

When you use the FIND command to search for a string, you can limit the search to specific portions of the data you are searching:

- To limit the search for a string to only where it appears as a *prefix* in the data, specify the PREFIX parameter.
- To limit the search for a string to only where it appears as a *suffix* in the data, specify the SUFFIX parameter.
- To limit the search for a string to only where it appears as a *word* in the data, specify the WORD parameter.

### RELATED REFERENCES

“FIND primary command” on page 825

## Finding data within excluded or non-excluded rows

If your data contains excluded and non-excluded rows, you can limit the search for a string or numeric value to:

- Only non-excluded rows (parameter NX), or
- Only excluded rows (parameter EX or X)

For example, the following command finds the next non-excluded row containing the string “SCARECROW” in column number 1 or column number 7:

```
FIND SCARECROW (#1 #7) NX
```

And the following command finds the next excluded row containing the value 1024 in column number 3:

```
FIND 1024 #3 EX
```

### RELATED REFERENCES

“FIND primary command” on page 825

## Finding data within a label range

In an FM/DB2 editor session, you can limit the search for a string or numeric value to a range of rows, identified by a pair of labels indicating the first and last rows to be searched.

For example, the following command finds the next row containing the string “TIME” in column number 10 in the range of rows from the label .STRT to the label .FNSH

```
FIND TIME #10 .STRT .FNSH
```

And the following command finds the next row containing the value 2840 in column number 4 or column number 6 in the range of rows from the current cursor position to the label .END

```
FIND 2840 #4,#6 .ZCSR .END
```

### RELATED TASKS

“Assigning labels to rows”

### RELATED REFERENCES

“FIND primary command” on page 825

## Assigning labels to rows

In an FM/DB2 editor session, if you use the CHANGE, DELETE, EXCLUDE, EXPORT, or FIND command in TABL display format, you can limit the rows that are searched by entering a “range” parameter. The range parameter consists of a pair of *labels* indicating the first and last rows to be searched. The string is found if it is contained within the specified range.

A label can be one to four alphabetic characters, beginning with a period (.). Labels starting with the letter “Z” are assigned by the editor.

You assign a label by typing the valid character string into the prefix area of the row. In the following example, the label .HERE is assigned to row number 16 and the label .THRE is assigned to row number 129:



```

:
00015 This is a row.
.HERE This is a row with a label.
00017 This is a row.
:
00128 This is a row.
.THRE This is a row with a label.
00130 This is a row.
:

```

After it is assigned, a label stays with the row, even if the row is moved.

To remove a label from a data row, blank out the label characters (or overwrite them with a new label) then press Enter. You can unassign a label by deleting the row containing that label, or you can remove all row labels by using the RESET LABEL command.

You can overwrite a label with a prefix command without unassigning the label. The label reappears at the completion of the command and remains displayed in the row prefix area.

You can move a label to another row by typing the same label on a new row.

Some labels are automatically assigned and maintained by the editor. These special labels begin with the letter "Z" (Your own labels therefore must not start with a "Z".) Unlike other labels, these editor-assigned labels do not necessarily stay with the same row, but instead represent logical positions on the display.

Some of these editor-assigned labels are available to you. The editor assigns:

<b>.ZCSR</b>	To the row on which the cursor is currently positioned.
<b>.ZFST</b>	To the first row (relative row number 1). This can be abbreviated to .ZF.
<b>.ZLST</b>	To the last row. This can be abbreviated to .ZL.

The following FIND command finds the next row, excluded or non-excluded, containing the string *xxx*, in the column with column number 5, in the range of rows from the current cursor position to the end of data:

```
FIND xxx #5 .ZCSR .ZLST
```

The following EXCLUDE command excludes all rows, excluded or non-excluded, containing the string "ABC", in either of the columns with column numbers 3 and 7, in the range of rows from the label .HERE to the label .THRE:

```
EXCLUDE ALL ABC (#3 #7) .HERE .THRE
```

If you use the range parameter, the two labels must be separated by a blank or comma. A single label is not allowed. The labels can be any combination of the editor-assigned labels (.ZCSR, .ZFST, .ZLST) or labels you have assigned yourself.

The label representing the smaller relative row number is used as the start of the range and the label representing the larger relative row number is used as the end of the range, regardless of the order in which they are specified.

If the range you specify includes excluded rows that are hidden from display or represented by shadow lines, those rows are not affected by the command.



### RELATED REFERENCES

- “CHANGE primary command” on page 808
- “DELETE primary command” on page 813
- “EXCLUDE primary command” on page 818
- “FIND primary command” on page 825
- “RESET primary command” on page 847

## Searching numeric columns

The numeric value of the search string must equal the formatted numeric value of the column. The lengths (number of digits) of the search string and of the numeric column are not significant. Similarly, the data type of the numeric column is not significant. For example, a search string of 123 matches a DECIMAL column containing 00123, or a SMALLINT column containing 123. A search string of 123 does not match a DECIMAL or SMALLINT column containing 12300 (because the numeric values are different). An unsigned value in the string is considered to be positive.

### RELATED REFERENCES

- “Finding data within specific columns” on page 114

### RELATED REFERENCES

- “CHANGE primary command” on page 808
- “EXCLUDE primary command” on page 818
- “FIND primary command” on page 825

## Changing the view of displayed data

You can change the view of data displayed in an FM/DB2 editor session by editing the template to:

- Show only selected columns
- Change the sequence of displayed columns
- Change column headings
- Change the width of columns
- Show leading zeros (numeric columns)

After you have edited the template, you can either save it for future use, or just use it for the current FM/DB2 editor session only.

To edit the template in the current FM/DB2 editor session, use the TEDIT primary command.

To edit the template from the Table View or Table Edit panel, select the **Edit template** option.

### RELATED TASKS

- Chapter 3, “Working with templates,” on page 55

### RELATED REFERENCES

- “TEDIT primary command” on page 856

## Selecting a display format

In an FM/DB2 editor session, you can view the data in the following display formats:

- Tabular format (TABL), or
- Single-row format (SNGL)

To select the display format you want, you can:

- Enter one of the following values (or just its first letter) in the **Format** field (in the upper right corner of the Table View or Table Edit panel):
  - TABL
  - SNGL
- Use the **FORMAT** primary command to toggle between TABL and SNGL display formats.
- In TABL display format, use the **FS** primary command to change to SNGL display format.
- In SNGL display format, use the **FT** primary command to change to TABL display format.
- If in TABL display format, use the **FS** prefix command to change to SNGL display format.

The following pages describe the TABL and SNGL display formats.

#### RELATED REFERENCES

“FORMAT primary command” on page 830

“FS primary command” on page 832

“FT primary command” on page 832

“Table Edit panel” on page 761

### TABL display format

In TABL display format (the default format), the rows of the table are presented formatted into columns displayed horizontally across the panel.

Figure 39 shows an example of a view display in TABL display format.

Process	Options	Utilities	Help
FM/DB2 (DFA2)			
Table View			42 rows fetched
TABLE FMUSER.EMP			Format TABL
EMPNO	FIRSTNAME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+-----1-->	-	<---+-----1----->
****	Top of data	****	
000010	CHRISTINE<	I	HAAS<
000020	MICHAEL<	L	THOMPSON<
000030	SALLY<	A	KWAN<
000050	JOHN<	B	GEYER<
000060	IRVING<	F	STERN<
000070	EVA<	D	PULASKI<
000090	EILEEN<	W	HENDERSON<
000100	THEODORE<	Q	SPENSER<
000110	VINCENZO<	G	LUCCHESI<
000120	sean<		O'CONNELL<
000130	DOLORES<	M	QUINTANA<
000140	HEATHER<	A	NICHOLLS<
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F6=RChange
			F12=Cancel

Figure 39. View panel in TABL display format (with all optional lines displayed)

Figure 40 on page 120 shows an example of an edit display in TABL display format.

## Viewing data in an FM/DB2 editor session

Process	Options	Utilities	Help			
FM/DB2 (DFA2)						
Table Edit			42 rows fetched			
TABLE FMUSER.EMP			Format <u>TABL</u>			
EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE
#1	#2	#3	#4	#5	#6	#7
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)	DATE
000000	****	Top of data	****			
000000	****	Top of data	****			
000001	000010	CHRISTINE<	I	HAAS<	A00	3978 01.01.1965
000002	000020	MICHAEL<	L	THOMPSON<	B01	3476 10.10.1973
000003	000030	SALLY<	A	KWAN<	C01	4738 05.04.1975
000004	000050	JOHN<	B	GEYER<	E01	6789 17.08.1949
000005	000060	IRVING<	F	STERN<	D11	6423 14.09.1973
000006	000070	EVA<	D	PULASKI<	D21	7831 30.09.1980
000007	000090	EILEEN<	W	HENDERSON<	E11	5498 15.08.1970
000008	000100	THEODORE<	Q	SPENSER<	E21	0972 19.06.1980
000009	000110	VINCENZO<	G	LUCCHESI<	A00	3490 16.05.1958
000010	000120	sean<		O'CONNELL<	A00	2167 05.12.1963
000011	000130	DOLORES<	M	QUINTANA<	C01	4578 28.07.1971
000012	000140	HEATHER<	A	NICHOLLS<	C01	1793 15.12.1976
Command ==>						Scroll <u>PAGE</u>
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve	F5=RFind	F6=RChange	
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel	

Figure 40. Edit panel in TABL display format (with all optional lines displayed)

Multiple rows are displayed on the one panel (limited by the screen size). Each column of the table is formatted according to the data type for that column. For example, numeric data types are displayed as whole or decimal numbers, and date and time fields are displayed as dates or times.

By default, the headings are the names of the columns as defined in the DB2 catalog. You can change them by editing the template.

For SELECT statement View or Edit only, the heading might be displayed as COL $nnn$  where  $nnn$  is 001, 002, and so on. This indicates a generated column name. Both of the following examples cause FM/DB2 to generate a column name:

```
SELECT 1, dbname FROM SYSIBM.SYSTABLES
SELECT CONCAT(dbname, tname) FROM SYSIBM.SYSTABLES
```

One or more columns in the FM/DB2 editor session might be protected. This can occur if:

- The object being edited has a primary key, and the **Allow updates to primary key** option is not selected.
- The object being edited is a read-only view.
- The object being edited is the result table from an arbitrary SELECT statement (that is, select statement edit).
- The object being edited is a table, but contains columns, excluding ROWID columns, marked as not updateable in the DB2 catalog. The DB2 catalog tables fall into this category.

If you display data in TABL display format, you can scroll up, down, left, and right.

To display the data in hexadecimal format, use the HEX primary command:

```
HEX ON
```

In TABL display format, the view or edit display always shows the column names for each displayed column (or the alternative field heading if you have defined one).

Optionally, you can display up to 3 additional information lines between the column heading line and the top of data. These are (in order):

- A line containing the column number (as defined in the DB2 catalog).
- A line containing the data type for the column (and the length for non-numeric fields).
- A line showing a ruler above each column. The ruler can include offset information and, optionally, information about primary and foreign keys, and unique indexes.

You can select which, if any, of these additional information lines are displayed on the editor display either:

- For *all* FM/DB2 editor sessions by setting the appropriate global option using the Editor Options panel, or
- For the *current* FM/DB2 editor session only:
  - For View, you set the appropriate option using the View (option 1) panel.
  - For Edit, you set the appropriate option using the Edit (option 2) panel.

### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

“Scrolling” on page 125

“View and Edit options (options 1 and 2)” on page 48

“ROWID columns” on page 82

“Setting options for the current FM/DB2 editor session” on page 99

“Excluding rows” on page 127

### RELATED REFERENCES

“DB2 View panel” on page 559

“DB2 Edit panel” on page 544

“Editor Options (1 of 7) panel” on page 571

“HEX primary command” on page 832

## SNGL display format

In SNGL display format, only one row of the table is displayed on the panel at the one time.

Figure 41 on page 122 shows an example of an edit display in SNGL display format.

## Viewing data in an FM/DB2 editor session

Process Options Utilities Help				
FM/DB2 (DFA2)			Table Edit	1 of 42
TABLE FMUSER.EMP				Format <u>SNGL</u>
Top Column is 1 of 13 in Row 1				
Ref	Rdf	Key	Column	Type(len) Data
#1		PU	EMPNO	CH(6) 000010
#2			FIRSTNME	VC(12) CHRISTINE<
#3			MIDINIT	CH(1) I
#4			LASTNAME	VC(15) HAAS<
#6			PHONENO	CH(4) 3978
#7			HIREDATE	DATE 01/01/1965
#8			JOB	CH(8) PRES
#9			EDLEVEL	SMINT 18
#10			SEX	CH(1) F
#11			BIRTHDATE	DATE 08/14/1933
#12			SALARY	DEC(9,2) 52750.00
#13			BONUS	DEC(9,2) 1000.00
#14			COMM	DEC(9,2) 4220.00
**** End of record ****				
Command ==>				
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve	F5=RFind
F7=Up	F8=Down	F9=Swap	F10=Previous	F11=Next
				Scroll PAGE
				F6=RChange
				F12=Cancel

Figure 41. Edit panel in SNGL display format (with all optional columns displayed)

The columns of the table are displayed vertically on the panel, with the column header on the left of the panel, and the data for that column on the right. Each column of the table is formatted according to the data type for that column. For example, numeric data types are displayed as whole or decimal numbers, and date and time fields are displayed as dates or times.

By default, the headings are the names of the columns as defined in the DB2 catalog. You can change them by editing the template.

For SELECT statement in an FM/DB2 editor session, the heading might be displayed as COL $nnn$  where  $nnn$  is 001, 002, and so on. This indicates a generated column name. Both of the following examples cause FM/DB2 to generate a column name:

```
SELECT 1, dbname FROM SYSIBM.SYSTABLES
SELECT CONCAT(dbname, tname) FROM SYSIBM.SYSTABLES
```

One or more columns in the FM/DB2 editor session might be protected. This can occur if:

- The object being edited has a primary key, and the “Allow updates to primary key” option is not selected.
- The object being edited is a read-only view.
- The object being edited is the result table from an arbitrary SELECT statement (that is, select statement edit).
- The object being edited is a table, but contains columns, excluding ROWID columns, marked as not updateable in the DB2 catalog. The DB2 catalog tables fall into this category.

If you display data in SNGL display format, you can:

- Scroll within the row (up and down)
- Scroll forward and backward within the table (to show the next and previous non-excluded rows)

To display the data in hexadecimal format, use the HEX primary command HEX ON.

In SNGL display format, the view or edit display always shows two columns: the name of the column, and the data for that column.

Optionally, you can display up to three additional information columns. Two of these columns, **Ref** and **Key**, are displayed to the left of the column containing the column name; the third, **Type(Len)** is displayed between the name and data columns. If you choose to show all information columns, the displayed columns are (in order of appearance from left to right):

<b>Ref</b>	<p>An optional column showing the column number (as defined in the DB2 catalog).</p> <p>You can turn this optional column on and off with the REFS primary command. The value shown can be zero if displaying the result table from an arbitrary select statement (that is, select statement edit). This indicates either that the column is generated, or that the column is not a column of the first table named in the FROM clause of the SELECT statement that produced the result table.</p>
<b>Rdf</b>	<p>Unused.</p>
<b>Key</b>	<p>An optional column showing information about primary keys, foreign keys, unique indexes and check constraints.</p> <p>You can turn this optional column on and off with the INDEXINF primary command.</p>
<b>Column</b>	<p>A column showing the column name.</p>
<b>Type(Len)</b>	<p>An optional column showing the data type for the column (and the length for non-numeric fields).</p> <p>You can turn this optional column on and off with the TYPE primary command</p>
<b>Data</b>	<p>A column showing the (formatted) data for the column.</p>

You can customize the view or edit display either:

- For *all* FM/DB2 editor sessions by setting the appropriate global option using the Editor Options panels, or
- For the *current* FM/DB2 editor session only:
  - For View, you set the appropriate option using the DB2 View panel.
  - For Edit, you set the appropriate option using the DB2 Edit panel.

### RELATED TASKS

Chapter 3, “Working with templates,” on page 55  
“Scrolling” on page 125

### RELATED REFERENCES

“DB2 View panel” on page 559  
“DB2 Edit panel” on page 544  
“Editor Options (1 of 7) panel” on page 571  
“HEX primary command” on page 832  
“INDEXINF primary command” on page 834  
“REFS primary command” on page 846  
“TYPE primary command” on page 857

### Zooming in to see all of a row

You can “zoom in” on a single row by pressing the Zoom function key (F2) or by using the ZOOM primary command.

In TABL display format, to display all data in a particular row without having to scroll left or right, move the cursor to the row, then press the Zoom function key (F2). FM/DB2 limits the display to just that row. In SNGL display format, just press the Zoom function key (F2).

If you zoom in on a row, only that row is displayed in “zoomed” SNGL display format. The zoomed display automatically scrolls to the field that was at the left of the panel, or, if applicable, the column where the cursor was positioned before zooming.

In “zoomed” SNGL display format, the word **Zoom** is displayed next to **Format** in the upper right corner of the panel as shown in Figure 42.

Process		Options	Help	
FM/DB2 (DFA2)		Table Edit		1 of 42
TABLE FMNUSER.EMP		Top Column is 1 of 14		Zoom Format <u>SNGL</u>
Ref	Key	Column	Type(len)	Data
#1	PU	EMPNO	CH(6)	000050
#2		FIRSTNME	VC(12)	JOHN<
#3		MIDINIT	CH(1)	B
#4		LASTNAME	VC(15)	GEYER<
#5	NF	WORKDEPT	CH(3)	E01
#6		PHONENO	CH(4)	6789
#7		HIREDATE	DATE	08/17/1949
#8		JOB	CH(8)	MANAGER
#9		EDLEVEL	SMINT	16
#10		SEX	CH(1)	M
#11		BIRTHDATE	DATE	09/15/1925
#12		SALARY	DEC(9,2)	40175.00
#13		BONUS	DEC(9,2)	800.00
#14		COMM	DEC(9,2)	3214.00
**** End of record ****				
Command ==>				Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetrie	F5=RFind
F7=Up	F8=Down	F9=Swap	F12=Cancel	F6=RChange

Figure 42. Zooming in on one row (“zoomed” SNGL display format)

If you view a record in “zoomed” SNGL display format, FM/DB2 displays all columns, regardless of whether they were selected for display in the template. FM/DB2 displays the columns in the order defined in the template. Any template re-sequencing is ignored. In this display format, you cannot navigate between rows or use the TEDIT primary command.

In TABL or normal “un-zoomed” SNGL display format, File Manager only shows the columns selected for display in the template.

For instance, in the example shown in Figure 42, the columns WORKDEPT and BIRTHDATE are shown in “zoomed” SNGL display format, even though these columns happen to be “deselected” in the template. In “un-zoomed” SNGL display format, the same row is displayed:

Process		Options	Help	
FM/DB2 (DFA2)		Table Edit		1 of 42
TABLE FMUSER.EMP		Top Line is 1 of 12		Format <u>SNGL</u>
Ref	Rdf	Key	Column	Type(len) Data
#2			FIRSTNME	VC(12) JOHN<
#3			MIDINIT	CH(1) B
#4			LASTNAME	VC(15) GEYER<
#6			PHONENO	CH(4) 6789
#7			HIREDATE	DATE 08/17/1949
#8			JOB	CH(8) MANAGE
#9			EDLEVEL	SMINT 16
#10			SEX	CH(1) M
#12			SALARY	DEC(9,2) 40175.00
#13			BONUS	DEC(9,2) 800.00
#14			COMM	DEC(9,2) 3214.00
**** End of record ****				
Command ==>				Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind
F7=Up	F8=Down	F9=Swap	F10=Previous	F11=Next
				F6=RChange
				F12=Cancel

In “un-zoomed” SNGL display format, you can navigate between rows using the PREVIOUS and NEXT primary commands or the Previous function key (F10) and the Next function key (F11).

To return to the display format that was current before zooming in, enter the ZOOM primary command again, or the CANCEL, END, or EXIT command.

#### RELATED TASKS

“TABL display format” on page 119

“SNGL display format” on page 121

#### RELATED REFERENCES

“ZOOM primary command” on page 860

“TEDIT primary command” on page 856

## Scrolling

To scroll through your data, press the following function keys:

Press this function key	To...
Up function key (F7)	Scroll backward (up)
Down function key (F8)	Scroll forward (down)

In TABL display format:

Right function key (F11)	Scroll right
Left function key (F10)	Scroll left

In SNGL display format:

Next function key (F11)	Go to the next row
Previous function key (F10)	Go to the previous row

You can also scroll using the primary commands UP, DOWN, LEFT, RIGHT, TOP, BOTTOM, NEXT and PREVIOUS.

#### RELATED TASKS

“TABL display format” on page 119

“SNGL display format” on page 121



## Viewing data in an FM/DB2 editor session

“Holding columns (when scrolling left or right)” on page 75

### RELATED REFERENCES

“ZOOM primary command” on page 860  
“TEDIT primary command” on page 856  
“UP primary command” on page 858  
“DOWN primary command” on page 815  
“LEFT primary command” on page 835  
“RIGHT primary command” on page 848  
“TOP primary command” on page 856  
“BOTTOM primary command” on page 805  
“NEXT primary command” on page 839  
“PREVIOUS primary command” on page 842

**Controlling how far you scroll:** To control how far you scroll when you press one of the scrolling function keys, enter a scroll amount in the **Scroll** field:

### Scroll amount    Scrolls...

<b>PAGE</b>	One panel at a time
<b>HALF</b>	Half a panel at a time
<b>DATA</b>	One line or panel column less than a screen at a time
<b>CSR</b>	To the cursor position (if the cursor is not positioned on a row when the scroll is performed, the default scroll amount is PAGE)
<i>nnnn</i>	A number of panel columns (if scrolling left or right) or rows (when scrolling up or down) at a time

### Notes:

1. In TABL display format, you can temporarily override the amount in the **Scroll** field by typing a scroll amount on the command line, then pressing a scroll function key. For example, if you enter 8 on the command line, then press the Right function key (F11), FM/DB2 scrolls right 8 panel columns.
2. In SNGL display format, you can specify the number of rows FM/DB2 scrolls forward or backward by typing a number on the command line, then pressing the Next function key (F11) or the Previous function key (F10). For example, if you enter 5 on the command line, then press the Next function key (F11), FM/DB2 scrolls forward 5 rows.
3. In TABL display format, the position that the cursor occupies after you scroll left or right depends on the data type of the DB2 column that occupies the resultant panel column:
  - If the data type of the DB2 column is non-numeric, scrolling left or right moves to the relative panel column within the DB2 column (for small columns, scrolling moves to the start of the column).
  - If the data type of the DB2 column is numeric, scrolling left or right moves to the start of the DB2 column.

**Scrolling to the first or last row or column:** To scroll to the first or last row or column in the table, type MAX (or M) on the command line, then press one of the scroll function keys. For example, typing M then pressing the Right function key (F11) scrolls right to the last column.

You can also scroll to the first or last row by entering TOP or BOTTOM on the command line.

## Excluding rows

When you are viewing or editing data, you can “exclude” certain rows in the data you are viewing. These rows are referred to as *excluded rows* and are not displayed on your screen. The remaining rows (those that *are* displayed on your screen) are referred to as *non-excluded rows*.

You may choose to exclude certain rows to restrict the scope of the CHANGE, DELETE and FIND primary commands. When you use one of these commands with data that contains excluded rows and non-excluded rows, you can specify whether the command is to affect:

- Only non-excluded rows,
- Only excluded rows, or
- All rows

To exclude certain rows in the table you are viewing, you can use:

- The EXCLUDE primary command. For example, the following command excludes all rows with the string “SMITH” in column number 3:

```
EXCLUDE ALL SMITH #3
```

The following command excludes the next row containing the string “XXX” within either column number 20 or column number 30:

```
EXCLUDE XXX #20 #30
```

You can exclude a range of rows identified by a “from” label and a “to” label. For example, the following command excludes a range of rows, starting with the row labeled “.LABA” and ending with the row labeled “.LABB”:

```
EXCLUDE ALL .LABA .LABB
```

In an FM/DB2 editor session, you can specify an asterisk (\*) as the search string to find the same string as you specified on the previous EXCLUDE primary command.

In an FM/DB2 editor session, you can limit the effect of the EXCLUDE command to specific portions of the data you are searching:

- To limit the search for a string to only where it appears as a *prefix* in the data, specify the PREFIX parameter.
- To limit the search for a string to only where it appears as a *suffix* in the data, specify the SUFFIX parameter.
- To limit the search for a string to only where it appears as a *word* in the data, specify the WORD parameter.
- The following prefix commands:
 

<b>X</b>	Exclude one row.
<b>Xn</b>	Exclude <i>n</i> rows.
<b>XX</b>	Exclude a block of rows.

You can use the following line commands to show various rows from a block of excluded rows:

<b>F</b>	Show the first row from a block of excluded rows.
<b>Fn</b>	Show the first <i>n</i> rows from a block of excluded rows.
<b>L</b>	Show the last row from a block of excluded rows.
<b>Ln</b>	Show the last <i>n</i> rows from a block of excluded rows.

### RELATED TASKS

“Showing or hiding excluded rows” on page 128

## Viewing data in an FM/DB2 editor session

### RELATED REFERENCES

- “EXCLUDE primary command” on page 818
- “CHANGE primary command” on page 808
- “DELETE primary command” on page 813
- “FIND primary command” on page 825

**Showing or hiding excluded rows:** In TABL display format, you can choose to hide excluded rows from display, or represent them by shadow lines:

- - - - - *n* line(s) **excluded**

The SHADOW primary command controls whether shadow lines are shown or hidden. To turn on shadow lines for excluded rows, enter SHADOW ON. To turn off shadow lines for excluded rows, enter SHADOW OFF.

In SNGL display format, shadow lines are not displayed. If you use the Next function key (F11) or Previous function key (F10) to scroll through rows in SNGL display format, the only indication that an excluded row has been skipped is that the row number (shown in the upper right corner of the panel) skips accordingly.

To redisplay excluded rows, enter the following command:

RESET EXCLUDED

### RELATED TASKS

- “TABL display format” on page 119
- “SNGL display format” on page 121

### RELATED REFERENCES

- “SHADOW primary command” on page 851
- “RESET primary command” on page 847

## Sorting the data

To sort the data you are viewing or editing in TABL display format, use the SORT primary command.

You can specify up to 5 column numbers (the most significant first) and whether you want the data sorted in ascending (the default sequence) or descending sequence for each column number you specify.

### Examples

#### **SORT #7 D #6 #3**

Sorts all rows on the column with column number #7 (primary sort key) in descending order, then on the column with column number #6 (secondary sort key) in ascending order, then on the column with column number #3 (minor sort key) in ascending order,

#### **SORT #6 X**

Sorts all excluded rows on the column with column number #6 in ascending order (as if non-excluded rows did not exist).

**Note:** The SORT command only changes the order in which you view the data; it has no effect on the order in which the data is stored within DB2.

### RELATED REFERENCES

- “SORT primary command” on page 853

## Displaying data in hexadecimal format

To display the data you are browsing or editing in hexadecimal format, use the HEX primary command.

For example, if your display looks something like this:

NAME #1	CREATOR #2	TYPE #3	DBNAME #4	TSNAME #5	DBID #6	OBID #7
VARCHAR(18)	CH(8)	CH(1)	CH(8)	CH(8)	SMINT	SMINT
<-----1----->	<----->	-	<----->	<----->	<----->	<----->
000000 **** Top of data ****						
000001 SYSCOPY	SYSIBM	T	DSNDB06	SYSCOPY	00006	00046
000002 SYSFIELDS	SYSIBM	T	DSNDB06	SYSDBASE	00006	00021

then issuing the command HEX ON causes the hexadecimal representation to be displayed:

NAME #1	CREATOR #2	TYPE #3	DBNAME #4	TSNAME #5	DBID #6	OBID #7
VARCHAR(18)	CH(8)	CH(1)	CH(8)	CH(8)	SMINT	SMINT
<-----1----->	<----->	-	<----->	<----->	<----->	<----->
000000 **** Top of data ****						
000001 SYSCOPY	SYSIBM	T	DSNDB06	SYSCOPY	00006	00046
EEECDD0000000000	EEECDD44	E	CEDCCFF4	EEECDD04	00	02
2823678000000000	28292400	3	42542060	28236780	06	0E
000002 SYSFIELDS	SYSIBM	T	DSNDB06	SYSDBASE	00006	00021
EEECDDCE00000000	EEECDD44	E	CEDCCFF4	EEECDDCE	00	01
2826953420000000	28292400	3	42542060	28242125	06	05

### RELATED REFERENCES

“HEX primary command” on page 832

## Managing the prefix area

The prefix area displays line numbers that represent the row number in the DB2 table or view being edited.

The prefix area also doubles as the prefix command entry area. You enter prefix commands by overtyping the row number for the appropriate row.

You can use prefix commands to:

- Insert or delete rows
- Repeat (duplicate) rows
- Move rows
- Shift data
- Limit the data being edited

In an FM/DB2 editor session, to see which prefix commands are valid for the current environment, enter an “?” in the prefix area (against any listed line). FM/DB2 displays a list of the line commands you can enter, like those shown in Figure 43 on page 130.

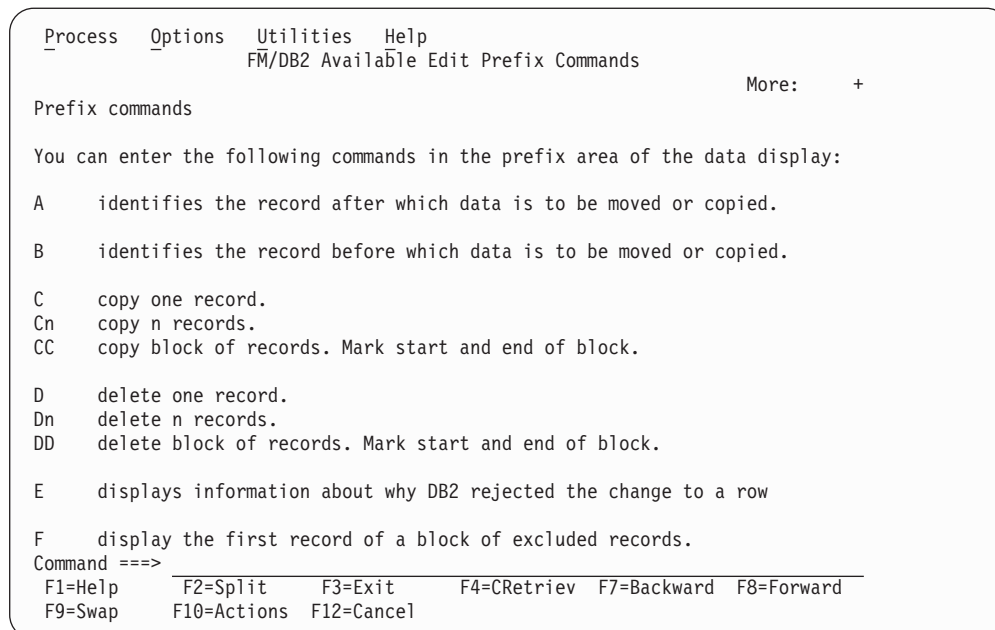


Figure 43. Using the ? prefix command to display a list of valid prefix commands

In an FM/DB2 editor session, you can choose whether a prefix area is displayed next to the data or not.

To specify the default position and display state of the prefix area for *all* FM/DB2 editor sessions, set these editor options on the relevant Editor Options panel (0.2):

- **Display prefix area**
- **Display prefix area on the right**
- **Prefix area width (A,6,7,8,9)**

To specify the default position and display state of the prefix area for the *current* FM/DB2 editor session, use the PREFIX primary command. For example:

- To display the prefix area on the right, enter PREFIX RIGHT.
- To display the prefix area as an 8-digit field, enter PREFIX 8.
- To display the prefix area with a width that automatically adjusts (from 6 to 9 digits wide) in order to display the record number, enter PREFIX A.
- To remove the display of the prefix area, enter PREFIX OFF.

### RELATED REFERENCES

“PREFIX primary command” on page 841

## Displaying the column number

In SNGL display format, use the REFS primary command to show or hide the column number for each displayed column:

- If the column numbers are not currently displayed, FM/DB2 displays an additional column (to the left of the column containing the column name and, if displayed, to the left of the column showing index information) showing the column number for each column.

If you enter the REFS primary command in TABL display format, the display is unaltered. However, if you change to SNGL display format, the display status of the additional column is reversed.

- If the column numbers are already displayed, the REFS primary command removes them from display.

**Note:** You can also display the column numbers by selecting the **Show column number** option (for TABL, SNGL, or both display formats).

### RELATED REFERENCES

“REFS primary command” on page 846

“Editor Options (3 of 7) panel” on page 579

### Displaying the data type

In SNGL display format, use the TYPE primary command to show or hide the data type (and, for non-numeric columns, the length of the column) for each displayed column:

- If the data type details are not currently displayed, FM/DB2 displays an additional column (between the name and data columns) showing the data type details for each column.  
If you enter the TYPE primary command in TABL display format, the display is unaltered. However, if you change to SNGL display format, the display status of the additional column is reversed.
- If the data type details are already displayed, the TYPE primary command removes them from display.

**Note:** You can also display the data type details by selecting the **Show data type** option (for TABL, SNGL, or both display formats).

### RELATED REFERENCES

“REFS primary command” on page 846

“Editor Options (3 of 7) panel” on page 579

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## Handling special data

The following sections describe how to work with special types of data.

### DATE and TIME columns

DB2 accepts dates and times in a number of formats.

#### DATE columns

In an FM/DB2 editor session, the display format for DATE columns depends on the setting of the DATE parameter in the DB2 DSNHDECP installation module. For further information, see your DB2 systems administrator, the *DB2 UDB for z/OS SQL Reference*, or other DB2 manuals.

If you edit a DATE column, you can enter a date in any format recognized by DB2. FM/DB2 converts the date you enter into the appropriate display format. For example, to set the contents of a DATE column to represent September 27, 2004, you can enter 27.09.2004.

However, you need to be careful when choosing the separator character. If you try to enter 27/09/2004, FM/DB2 interprets “27” as a month and rejects the date as incorrect. A more subtle example is 08/05/1900 and 08.05.1900. FM/DB2 interprets the first as 5 August, 1900, but the second as May 8, 1900.

#### TIME columns

In an FM/DB2 editor session, the display format for TIME columns depends on the setting of the **External Format for TIME Data Type Columns** System Option.

## Handling special data

If you edit a TIME column, you can enter a time in any format recognized by DB2. FM/DB2 converts the time you enter into the appropriate display format.

If you enter times in USA format (hh.mm AM or PM), the absence of *second* information means that the time is stored internally as hh.mm.00 (that is, the seconds portion is always set to zero). This can cause unexpected results when comparing different TIME columns that have the same display format but different internal representations with respect to seconds.

### RELATED TASKS

“FM/DB2 system options (option 0.2)” on page 46

### RELATED REFERENCES

“FM/DB2 Systems Options (1 of 4) panel” on page 623

## Large numeric fields

If FM/DB2 generates a template, it sets the column width for numeric columns such that any value can be correctly displayed.

However, if as a result of editing the template, a numeric column contains a valid numeric value, but the value is too large to fit in the width allocated to the column (as defined in the template), the value is truncated. The column is highlighted to indicate that truncation has occurred.

To display the entire column without truncation, you need to edit the template, and specify an output width for the column:

1. Enter TEDIT on the command line to display the Column Selection/Edit panel.
2. Enter E template editor prefix command in the Prefix Command area to display the Column Attributes panel.
3. In the **Output width** field, enter a value that is wide enough to display the entire column.
4. Press the Exit function key (F3) key until you are back at the editor panel.

### RELATED REFERENCES

“Column Selection/Edit panel” on page 419

“EXCLUDE primary command” on page 818

“FIND primary command” on page 825

“TEDIT primary command” on page 856

## Working with large tables

When operating in view mode, FM/DB2 allows you to process large DB2 tables without the need to specify a large TSO region size.

A number of options and processes associated with working with large tables are available and described in these sections:

- “SQL optimization options”
- “Large table options” on page 133
- “Data sampling” on page 133

### SQL optimization options

You set the **Optimization options** on the on the Editor Options (2 of 7) panel to specify a OPTIMIZE FOR *nnn* ROWS clause in the SQL statement used to retrieve data from DB2.



Table 4 describes the behavior for various combinations of options:

Table 4. Effect of SQL optimization options

Use row count value	Row count	Optimize for ... Rows	Behavior
Not selected	0	0	No clause
Not selected	0	<i>nnn</i>	OPTIMIZE FOR <i>nnn</i> ROWS appended
Not selected	<i>nnn</i>	0	No clause
Not selected	<i>nnn</i>	<i>mmm</i>	OPTIMIZE FOR <i>mmm</i> ROWS appended
Selected	0	0	No clause
Selected	0	<i>nnn</i>	OPTIMIZE FOR <i>nnn</i> ROWS appended
Selected	<i>nnn</i>	0	OPTIMIZE FOR <i>nnn</i> ROWS appended
Selected	<i>nnn</i>	<i>mmm</i>	OPTIMIZE FOR <i>nnn</i> ROWS appended

#### RELATED REFERENCES

“Editor Options (2 of 7) panel” on page 575

### Large table options

You can set the **Scrollable cursor type** option on the Editor Options (2 of 7) panel to either 1 (Insensitive) or 2 (Sensitive static). When processing a large DB2 object in place holder mode only, FM/DB2 uses the appropriate type of scrollable cursor. There is no simple method for you to determine which type of scrollable cursor is in use. A DBG trace shows the SQL statement used to declare the cursor and fetch the data.

#### RELATED REFERENCES

“Editor Options (2 of 7) panel” on page 575

### Data sampling

Data sampling allows you specify that a subset of the rows in a DB2 object are loaded into the editor. This can be particularly useful when you are working with very large DB2 tables and require a representative sample of the data.

The **Sampling type** option on the Editor Options (2 of 7) panel allows you to specify how you want FM/DB2 to select rows from a DB2 object in order to provide sample data:

#### Clustered sampling

A specified number of rows are loaded into the editor.

#### Random sampling

Each row of the object is considered for inclusion in the editor. A random number generator and a frequency are used to determine whether the row is actually loaded.

Each of these two methods of selecting sample data are discussed here in detail.

**Clustered data sampling:** To specify clustered data sampling, set the **Sampling type** option on the Editor Options (2 of 7) panel to **2. Clustered sampling**.

These points describe the behavior of the FM/DB2 editor when using clustered data sampling:

- Data sampling applies to browse, view, and edit.



## Handling special data

- When using data sampling, the editor always loads all sampled rows into memory. Therefore large table support is NOT available when sampling data.
- The options that are pertinent to clustered sampling are:
  - **Row count** on the function entry panel.
  - **Start position** on the function entry panel.
  - **Sampling limit** on the Editor Options (2 of 7) panel.
  - **Initial skip count** on the Editor Options (2 of 7) panel.
  - **Include count** on the Editor Options (2 of 7) panel.
  - **Skip count** (final) on the Editor Options (2 of 7) panel.

Table 5 describes the behavior of the FM/DB2 editor for various options related to clustered data sampling.

*Table 5. Behavior of FM/DB2 editor for options related to clustered data sampling*

Row count	Start position	Sampling limit	Initial skip count	Include count	Skip count	Behavior
0	1	0	0	<i>nnn</i>	0	All rows sampled
0	1	<i>bbb</i>	0	<i>nnn</i>	0	<i>bbb</i> rows sampled <sup>1</sup> .
<i>rrr</i>	1	0	0	<i>nnn</i>	0	<i>rrr</i> rows sampled <sup>1</sup> .
<i>rrr</i>	1	<i>bbb</i>	0	<i>nnn</i>	0	The minimum of ( <i>rrr,bbb</i> ) rows are sampled <sup>1</sup> .
0	<i>sss</i>	0	0	<i>nnn</i>	0	Rows sampled from <i>sss</i> until the end of table.
0	<i>sss</i>	<i>bbb</i>	0	<i>nnn</i>	0	<i>bbb</i> rows sampled, commencing <i>sss</i> <sup>1</sup> .
<i>rrr</i>	<i>sss</i>	0	0	<i>nnn</i>	0	<i>rrr</i> rows sampled, commencing <i>sss</i> <sup>1</sup> .
<i>rrr</i>	<i>sss</i>	<i>bbb</i>	0	<i>nnn</i>	0	The minimum of ( <i>rrr,bbb</i> ) rows are sampled, commencing <i>sss</i> <sup>1</sup> .
0	1	0	<i>xxx</i>	<i>nnn</i>	<i>yyy</i>	Rows are sampled in groups of <i>xxx+nnn+yyy</i> rows. Within each group, <i>xxx</i> rows are skipped; <i>nnn</i> rows are sampled and <i>yyy</i> rows are skipped. The first group starts are row 1, the second group at ( <i>xxx+nnn+yyy+1</i> ). Groups are sampled until the end of the result table <sup>1</sup> .
0	1	<i>bbb</i>	<i>xxx</i>	<i>nnn</i>	<i>yyy</i>	Rows are sampled in groups of <i>xxx+nnn+yyy</i> rows. Within each group, <i>xxx</i> rows are skipped; <i>nnn</i> rows are sampled and <i>yyy</i> rows are skipped. The first group starts are row 1, the second group at ( <i>xxx+nnn+yyy+1</i> ). Groups are sampled until <i>bbb</i> rows are loaded <sup>1</sup> .
<i>rrr</i>	1	0	<i>xxx</i>	<i>nnn</i>	<i>yyy</i>	Rows are sampled in groups of <i>xxx+nnn+yyy</i> rows. Within each group, <i>xxx</i> rows are skipped; <i>nnn</i> rows are sampled and <i>yyy</i> rows are skipped. The first group starts are row 1, the second group at ( <i>xxx+nnn+yyy+1</i> ). Groups are sampled until <i>rrr</i> rows are loaded <sup>1</sup> .

Table 5. Behavior of FM/DB2 editor for options related to clustered data sampling (continued)

Row count	Start position	Sampling limit	Initial skip count	Include count	Skip count	Behavior
rrr	1	bbb	xxx	nnn	yyy	Rows are sampled in groups of $xxx+nnn+yyy$ rows. Within each group, $xxx$ rows are skipped; $nnn$ rows are sampled and $yyy$ rows are skipped. The first group starts at row 1, the second group at $(xxx+nnn+yyy+1)$ . Groups are sampled until the minimum of $(bbb,rrr)$ rows are loaded <sup>1</sup> .
rrr	sss	bbb	xxx	nnn	yyy	Rows are sampled in groups of $xxx+nnn+yyy$ rows. Within each group, $xxx$ rows are skipped; $nnn$ rows are sampled and $yyy$ rows are skipped. The first group starts at row $sss$ , the second group at $sss+(xxx+nnn+yyy)$ . Groups are sampled until the minimum of $(bbb,rrr)$ rows are loaded <sup>1</sup> .

**Note:**

1. Sampling continues until one of these conditions is met:

- Any non-zero **Sampling limit** is reached.
- Any non-zero **Row count** limit is reached.
- The end of the result table is reached.

**Random data sampling:** To specify random data sampling, set the **Sampling type** option on the Editor Options (2 of 7) panel to **3. Random sampling**.

These points describe the behavior of the FM/DB2 editor when using random data sampling:

- Data sampling applies to browse, view, and edit.
- When using data sampling, the editor always loads all sampled rows into memory. Therefore large table support is NOT available when sampling data.
- The options that are pertinent to random sampling are:
  - **Row count** on the function entry panel.
  - **Start position** on the function entry panel.
  - **Sampling limit** on the Editor Options (2 of 7) panel.
  - **Sampling frequency** on the Editor Options (2 of 7) panel.
  - **Sampling seed** on the Editor Options (2 of 7) panel.

Table 6 describes the behavior of the FM/DB2 editor for various options related to random data sampling.

Table 6. Behavior of FM/DB2 editor for options related to random data sampling

Row count	Start position	Sampling limit	Sampling frequency	Sample seed	Behavior <sup>1</sup>
0	1	0	0.fff	0	Rows are fetched, starting at row 1 and continuing until the end of the result table.
0	1	bbb	0.fff	0	Rows are fetched, starting at row 1 and continuing until the end of the result table, or until $bbb$ rows have been added to the editor.
rrr	1	0	0.fff	0	$rrr$ rows are fetched, starting at the first row. Some subset (approximately $0.fff \times rrr$ ) of these rows is added to the sample data set.

## Handling special data

Table 6. Behavior of FM/DB2 editor for options related to random data sampling (continued)

Row count	Start position	Sampling limit	Sampling frequency	Sample seed	Behavior <sup>1</sup>
<i>rrr</i>	1	<i>bbb</i>	0. <i>fff</i>	0	At most <i>rrr</i> rows are fetched, starting at the first row. Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows, but at most <i>bbb</i> rows, is added to the sample data set.
0	<i>sss</i>	0	0. <i>fff</i>	0	Rows are sampled, starting at row <i>sss</i> , and continuing until the end of the result table.
0	<i>sss</i>	<i>bbb</i>	0. <i>fff</i>	0	Rows are fetched, starting at row <i>sss</i> , and continuing until the end of the result table or until <i>bbb</i> rows have been added to the editor.
<i>rrr</i>	<i>sss</i>	0	0. <i>fff</i>	0	<i>rrr</i> rows are fetched, starting at row <i>sss</i> . Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows is added to the sample data set.
<i>rrr</i>	<i>sss</i>	<i>bbb</i>	0. <i>fff</i>	0	At most <i>rrr</i> rows are fetched, starting at row <i>sss</i> . Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows, but at most <i>bbb</i> rows, is added to the sample data set.
0	1	0	0. <i>fff</i>	0	Rows are fetched, starting at row 1 and continuing until the end of the result table. The random number generator starts with seed <i>yyy</i> .
0	1	<i>bbb</i>	0. <i>fff</i>	0	Rows are fetched, starting at row 1 and continuing until the end of the result table, or until <i>bbb</i> rows have been added to the editor. The random number generator starts with seed <i>yyy</i> .
<i>rrr</i>	1	0	0. <i>fff</i>	0	<i>rrr</i> rows are fetched, starting at the first row. Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows is added to the sample data set. The random number generator starts with seed <i>yyy</i> .
<i>rrr</i>	1	<i>bbb</i>	0. <i>fff</i>	0	At most <i>rrr</i> rows are fetched, starting at the first row. Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows, but at most <i>bbb</i> rows, is added to the sample data set. The random number generator starts with seed <i>yyy</i> .
0	<i>sss</i>	0	0. <i>fff</i>	0	Rows are sampled, starting at row <i>sss</i> and continuing until the end of the result table. The random number generator starts with seed <i>yyy</i> .
0	<i>sss</i>	<i>bbb</i>	0. <i>fff</i>	0	Rows are fetched, starting at row <i>sss</i> and continuing until the end of the result table, or until <i>bbb</i> rows have been added to the editor. The random number generator starts with seed <i>yyy</i> .
<i>rrr</i>	<i>sss</i>	0	0. <i>fff</i>	0	<i>rrr</i> rows are fetched, starting at row <i>sss</i> . Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows is added to the sample data set. The random number generator starts with seed <i>yyy</i> .
<i>rrr</i>	<i>sss</i>	<i>bbb</i>	0. <i>fff</i>	0	At most <i>rrr</i> rows are fetched, starting at row <i>sss</i> . Some subset (approximately 0. <i>fff</i> x <i>rrr</i> ) of these rows, but at most <i>bbb</i> rows, is added to the sample data set. The random number generator starts with seed <i>yyy</i> .

Table 6. Behavior of FM/DB2 editor for options related to random data sampling (continued)

Row count	Start position	Sampling limit	Sampling frequency	Sample seed	Behavior <sup>1</sup>
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**Note:**

1. Sampling continues until one of the following conditions is met:

- Any non-zero **Sampling limit** is reached.
- Any non-zero **Row count** (fetch) limit is reached.
- The end of the result table is reached.

The **Sampling limit** sets an upper bound on the number of rows loaded into the editor. This is the number of rows in an editor session. To reach this many rows, approximately  $1/(\text{Sampling frequency} \times \text{Sampling limit})$  rows must be fetched. By contrast, the **Row count** limit sets an upper bound on the number of rows that are fetched from the object. The number of rows that are sampled is approximately **Row count**  $\times$  **Sampling frequency**.

With "small" sampling frequencies, specifying a low **Row count** limit may result in no rows being sampled. For example, with a **Row count** limit of 60, a **Sampling count** of 2000, and a **Sampling frequency** of 0.01, there is a reasonable chance that no rows are sampled.

2. A **Sampling frequency** of 0.fff results in, on average and for large numbers of rows sampled,  $0.fff \times 100\%$  of rows being sampled. Therefore a frequency of 0.1 results in 10% of rows being sampled. For small frequencies, many rows need to be processed to find each matching row. For any particular random sample of data there is no guarantee that the number of rows in the sample will exactly reflect the sampling frequency.

When a **Sampling seed** value of 0 is specified, FM/DB2 uses the fraction part of the second's value derived from the current system clock value to initiate the random number generator. This value is accurate to the microsecond; therefore each seed has a value in the range 0–999999 inclusive. It is unlikely that two random samples generated with a sampling seed of 0 will be identical.

When the same user-specified **Sampling seed** is used for the same table and other conditions, the data samples produced will be identical.

## RELATED REFERENCES

"DB2 Browse panel" on page 540

"DB2 Edit panel" on page 544

"DB2 View panel" on page 559

"Editor Options (2 of 7) panel" on page 575

## Null values and VARCHAR processing

FM/DB2 provides different options for processing null values, and varying-length columns.

### Null column indicator character

FM/DB2 provides options that you can use to specify two null column characters:

#### Null column indicators: Input

For use when editing a null column

#### Null column indicators: Display

Indicates a null column when it is displayed

In an FM/DB2 editor session, entering the null column input indicator character in the first (leftmost) column of a column that permits null values indicates that the column is to have a null value. For FM/DB2 to recognize the null column input indicator character, you must type the selected character in the first position of the input field, and remove all the remaining characters.

FM/DB2 also provides an option whereby it interprets a column containing spaces as containing a null value.

## Handling special data

### RELATED REFERENCES

“Editor Options (4 of 7) panel” on page 584

### Varying-length columns

You can use FM/DB2 options to specify two string delimiter characters:

String delimiters: **Input**

For use when editing a varying-length column

String delimiters: **Display**

Indicates the end of a varying-length column when it is displayed

You can also select an option (**Remove trailing spaces**) to control how FM/DB2 interprets trailing spaces in a varying-length column.

The following examples show the effect of the **Remove trailing spaces** option, and the use of the string delimiter character (“#” in this case), if you specify a string (for a varying-length column) in an FM/DB2 editor session. In the examples, “>” and “<” indicate the start and end of the data you type.

- If the **Remove trailing spaces** option is selected, trailing spaces are removed:

Example string #<                      Stored as “Example string”.

- If the **Remove trailing spaces** option is not selected, trailing spaces are not removed:

Example string #<                      Stored as “Example string ”.

### RELATED TASKS

“View and Edit options (options 1 and 2)” on page 48

“Setting options for the current FM/DB2 editor session” on page 99

### RELATED REFERENCES

“Editor Options (5 of 7) panel” on page 587

## Unicode data

The FM/DB2 editor handles character data stored in Unicode differently to data stored in EBCDIC or ASCII. The differences are summarized here.

FM/DB2 normally retrieves character data from DB2 with automatic conversion to the CCSID of the FM/DB2 plan, normally CCSID 37. This is US EBCDIC; other EBCDIC CCSIDs may also be used.

When FM/DB2 retrieves character data stored in Unicode (within DB2), this automatic data conversion does not occur. The FM/DB2 editor processes the character data internally in native Unicode format. This means that, prior to display on the terminal, the data is converted from Unicode to the CCSID of the terminal. This may result in conversion errors when a Unicode character has no corresponding code point in the CCSID of the terminal. Any characters that cannot be converted are shown on the display as periods, indicating an unconverted character. When data displayed (and possibly changed) on the terminal is processed, it is converted from the CCSID of the terminal into Unicode, prior to submission to DB2. This conversion will always be successful, since Unicode includes code points for all characters in commonly used CCSIDs.

Data corruption is possible when the displayed data includes a period indicating an unconverted Unicode character, and the data for the column is changed by overtyping. Any periods in the modified data are converted to the Unicode

equivalent. Therefore, if the period represents an unconverted Unicode character, that character will be corrupted by the change. When character data is displayed in hexadecimal mode, the hexadecimal characters normally represent the encoding for the displayed character in the CCSID of the terminal. For example, 'A' is represented by 'C1'x in EBCDIC. When the character data is for a Unicode-encoded column, the hexadecimal characters represent the native Unicode data, not the encoding of the displayed character in the CCSID of the terminal. For example, 'A' is represented by '41'x when Unicode data is being displayed.

You can also make changes to the data in a column stored in Unicode by turning hexadecimal display on (HEX ON command) and overtyping the hexadecimal characters directly. When you do this, you should use the Unicode representation of any character, not the terminal's CCSID representation.

Assuming the target column is character data stored within DB2 in Unicode, the FIND, CHANGE, and EXCLUDE commands operate like this:

- Strings such as 'ABC' are converted to Unicode prior to any search or change occurring.
- Hexadecimal strings such as '414243'x are *not* converted to Unicode prior to any search or change occurring. Therefore F 'ABC' and F '414243'x are equivalent commands when the target column contains Unicode data, but not when the target column contains EBCDIC data.

---

## Changing data

In an FM/DB2 editor session, you can change data by:

- Overtyping
- Using the CHANGE primary command
- Entering prefix commands in the prefix area next to each row

### RELATED TASKS

“Installation settings that affect CAPS”

“Changing data by overtyping” on page 140

“Changing data with the CHANGE command” on page 141

“Changing data using prefix commands” on page 145

## Installation settings that affect CAPS

The setting of CAPS determines whether or not the characters you enter in an FM/DB2 editor session are converted to uppercase. If CAPS is set to ON, FM/DB2 translates all data in rows that are changed by overtyping from lowercase to uppercase, and translates replacement data specified in the CHANGE command from lowercase to uppercase. If CAPS is OFF, the new data you type is not converted to uppercase.

When FM/DB2 is installed, a number of customization settings affect CAPS. These settings determine:

- The initial setting for CAPS (ON or OFF)
- Whether you can change this setting by means of the edit options; that is, whether the setting is “updateable” (meaning you can change it) or “fixed” (meaning you cannot change it)
- Whether you are permitted to issue the FM/DB2 CAPS primary command

## Changing data

For more information about these customization settings, see the *Customization Guide*.

For the first and second of the above settings, you can verify their value by looking at the third Editor Options panel.

For the third of the above settings, if you try to issue the CAPS command but FM/DB2 has been customized so that the CAPS command is unavailable, FM/DB2 displays the message “The CAPS command has been disabled at installation time.”.

If the installation option for CAPS is “fixed”, each FM/DB2 editor session starts with the installation setting for CAPS (either ON or OFF) and you cannot change the setting using the edit options.

If the installation option for CAPS is “updateable”, you can change the setting (to either ON or OFF) using the edit options and each FM/DB2 editor session starts with the current CAPS setting.

If the CAPS command is disabled, and the installation option for CAPS is “fixed”:

- If the installation option for CAPS is ON, to enter lowercase data you must first issue the CASE MIXED command
- If the installation option for CAPS is OFF, to enter uppercase data you must use the Shift or Caps Lock keys

### RELATED TASKS

“Changing data by overtyping”

“Changing data with the CHANGE command” on page 141

“Converting data to uppercase” on page 147

### RELATED REFERENCES

“Editor Options (1 of 7) panel” on page 571

“CAPS primary command” on page 807

“CASE primary command” on page 807

## Changing data by overtyping

You can change the data displayed in an FM/DB2 editor session by overtyping it with the new data.

To successfully change data by overtyping:

- The new data you enter must be compatible with the data type of the column being changed. For example, you can only enter numeric values in a column that has a numeric data type.
- The column must be updateable (as defined in the DB2 catalog).
- If the table is subject to referential integrity, the new data must not cause a referential integrity violation.

### RELATED TASKS

““Read-only” views, non-updateable columns” on page 148

“Editing related tables” on page 150

“Converting data to uppercase” on page 147



## RELATED REFERENCES

Chapter 14, “DB2 data types,” on page 367

## Changing data with the CHANGE command

When you use the CHANGE command to change data, you must specify one or more column numbers to be included in the search (in the same way as you use the FIND command to find data).

For example, the following command changes all occurrences of the string “CHAIR” in all rows to the string “TABLE” in either of the columns with column numbers #5 and #6.

```
CHANGE ALL CHAIR TABLE #5,#6
```

And the following command changes the next occurrence of the value 400 in column number 3 to 500:

```
CHANGE 400 500 #3
```

To change the next occurrence of the string, press the RChange function key (F6). To find the next occurrence of the string and optionally change it, use a combination of the RFind function key (F5) and the RChange function key (F6).

To find the same string as you specified on the previous CHANGE primary command, specify an asterisk (\*) as the search string.

To use the same replacement string as you specified on the previous CHANGE primary command, specify an asterisk (\*) as the replacement string.

### Further examples

```
CHANGE BLACK WHITE #4 #7
```

In TABL display format, changes the next occurrence of “BLACK” to “WHITE”, where “BLACK” is completely contained within either of the columns represented by column numbers 4 and 7.

In SNGL display format, changes the next occurrence of “BLACK” to “WHITE”, where “BLACK” is completely contained within either of the columns represented by column numbers 4 and 7, in the current row only.

```
CHANGE BLACK WHITE ALL #2 #8
```

In TABL display format, changes all occurrences of “BLACK” to “WHITE”, where “BLACK” is completely contained within either of the columns represented by column numbers 2 and 8, in all rows.

In SNGL display format, changes all occurrences of “BLACK” to “WHITE”, where “BLACK” is completely contained within either of the columns represented by column numbers 2 and 8, in the current row only.



## Changing data

### RELATED CONCEPTS

“Installation settings that affect CAPS” on page 139

### RELATED TASKS

“Changing data within excluded or non-excluded rows” on page 144

“Changing data within a label range” on page 145

“Finding data within specific columns” on page 114

### RELATED REFERENCES

“CHANGE primary command” on page 808

“Table Edit panel” on page 761

## “From” and “To” strings of different lengths

For character columns (CHAR, VARCHAR), you can specify “from” and “to” strings (*from\_string* and *to\_string*) of different lengths, subject to the following conditions:

- For fixed-length character columns, when the “to” string (*to\_string*) is shorter than the “from” string (*from\_string*), FM/DB2 performs the change and pads the column with spaces. When the “to” string (*to\_string*) is longer than the “from” string (*from\_string*), FM/DB2 performs the change only if there are enough unused characters in the column to accommodate the change.

For example, for a given row, if column #2 is a fixed-length, character column of length 8 containing “GEORGE ” (with two trailing spaces):

CHANGE GEORGE FRED #2	Changes “GEORGE ” (with two trailing spaces) to “FRED ” (with four trailing spaces) in that row.
-----------------------	--

CHANGE GEORGE WILLIAM #2	Changes “GEORGE ” (with two trailing spaces) to “WILLIAM ” (with one trailing space) in that row.
--------------------------	---

CHANGE GEORGE ALEXANDER #2	FM/DB2 does not perform the change to that row as there are not enough unused characters in the column to accommodate the change.
----------------------------	---

- For varying-length character columns, when the “to” string (*to\_string*) is shorter than the “from” string (*from\_string*), FM/DB2 performs the change and adjusts the length of the column downwards by the difference between the lengths of *to\_string* and *from\_string*. When the “to” string (*to\_string*) is longer than the “from” string (*from\_string*), FM/DB2 performs the change only if there are enough unused characters in the column to accommodate the change. In this case, FM/DB2 adjusts the length of the column upwards by the difference between the lengths of *from\_string* and *to\_string*.

## Handling long strings

For character columns (CHAR, VARCHAR), you can specify “from” and “to” strings (*from\_string* and *to\_string*) up to 100 characters long. However, when you are dealing with long strings, you may find that you cannot fit the whole CHANGE command (including other parameters) on the command line. To overcome the problem, do one of the following to display an Extended Command Entry pop-up panel (see Figure 44 on page 143):

- Enter CX (for Change Extended)
- Enter the CHANGE primary command (or one of its abbreviations, such as C) *with no parameters*

**Note:** If you have previously used the CHANGE or FIND commands in the current FM/DB2 editor session, to display the Extended Command Entry pop-up panel in this way, you will need to first use the RESET command before entering the CHANGE command (or one of its abbreviations) without any parameters. Alternatively, enter CX.

The Extended Command Entry pop-up panel contains five lines (each 50 characters long) that you use to enter all the CHANGE command parameters (but not the actual keyword CHANGE or any of its abbreviations). FM/DB2 treats the five lines on the pop-up panel as contiguous, allowing you to specify long “from” and “to” strings, the DB2 column number and optionally any other parameters, using up to 250 characters in total.

**Note:** You can continue a string (or any other parameter) from the last position on one line of the pop-up panel to the first position of the next line. However, this does not mean that you need to completely fill a line before using the next line. For example, you can specify the “from” string on the first of the five lines, the “to” string on the next line, and the DB2 column number (specified as #*n*) on the next line. If you do not use all of a line, FM/DB2 treats the unused part of the line as a single space.

Figure 44 shows the Extended Command Entry pop-up panel for the CHANGE command. In this example, any previous occurrences of the string “dichlorodiphenyltrichloroethane” in DB2 columns 4 or 7, between the labels .abc and .def, are to be changed to the string “trinitrophenylmethylnitramine” for non-excluded rows only.

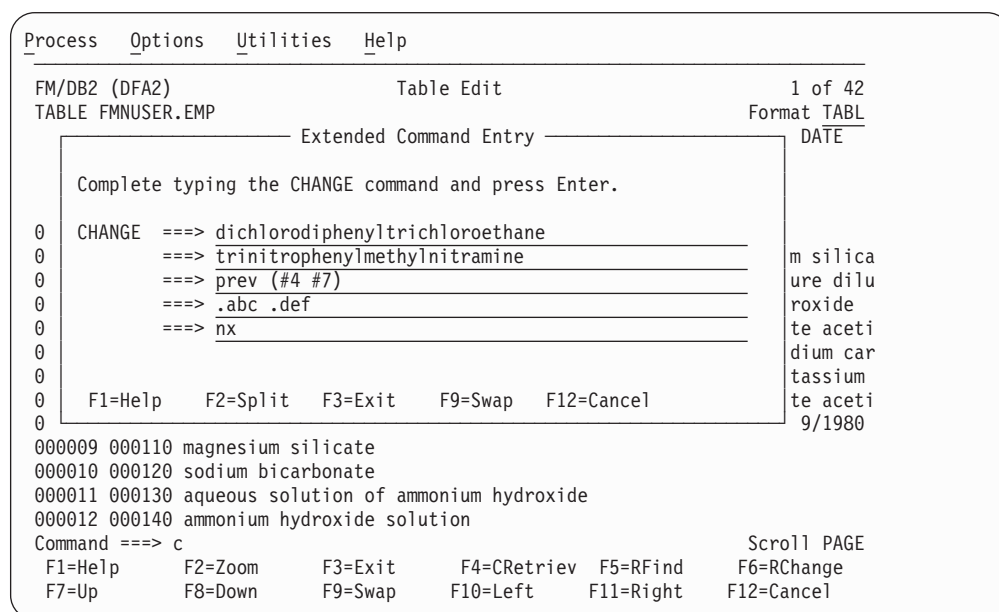


Figure 44. Extended Command Entry pop-up panel for the CHANGE command

Figure 45 on page 144 shows the pop-up panel for the CHANGE command where the next occurrence of a long string (84 characters) in DB2 column 5 is to be changed to another long string (70 characters).

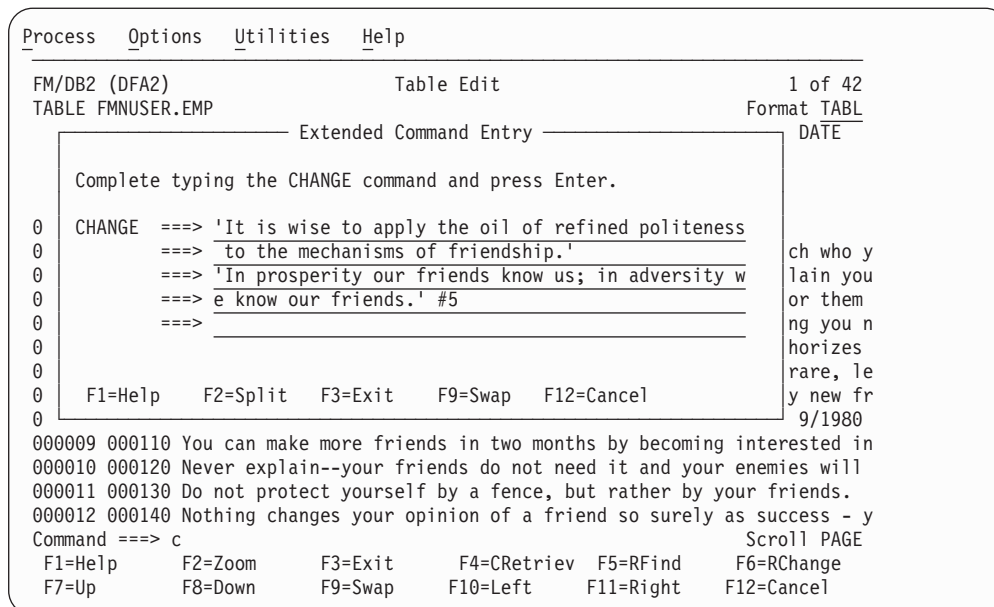


Figure 45. Extended Command Entry pop-up panel for the CHANGE command showing contiguous nature of entry lines

### Changing numeric columns

If you use the CHANGE command to change a numeric column, then the lengths of *from\_string* and *to\_string* are not significant. For example, if column #2 is a numeric column, then the following CHANGE command is permitted, because *from\_string* and *to\_string* are interpreted as numeric values:

```
CHANGE 3.1415 3.2 #2
```

### Changing data within excluded or non-excluded rows

If your data contains excluded and non-excluded rows, you can limit the effect of the CHANGE command to:

- Only non-excluded rows (parameter NX), or
- Only excluded rows (parameter EX or X)

For example, the following command changes all occurrences of the string "GREEN", in column number 2 or column number 5 in non-excluded rows only, to the string "BLACK":

```
CHANGE ALL GREEN BLACK (#2 #5) NX
```

And the following command changes the next occurrence of the value 250, in column number 2 in an excluded row, to 520:

```
CHANGE 250 520 #2 EX
```

#### RELATED TASKS

"Excluding rows" on page 127

#### RELATED REFERENCES

"CHANGE primary command" on page 808

## Changing data within a label range

You can limit the effect of the **CHANGE** command to a range of rows, identified by a pair of labels indicating the first and last rows to be searched for the data you want to change.

For example, in the range of rows from the label **.LABA** to the end of the data, the following command changes the next occurrence of the string **"EVIL"** in column number 4 to the string **"GOOD"**:

```
CHANGE EVIL GOOD #4 .LABA .ZLST
```

And, in the range of rows from the current cursor position to the label **.LABB**, the following command changes all occurrences of the value 48 in column number 3 or column number 11 to the value 148:

```
CHANGE ALL 48 148 #3,#11 .ZCSR .LABB
```

### RELATED TASKS

"Assigning labels to rows" on page 116

### RELATED REFERENCES

"CHANGE primary command" on page 808

## Limiting the change to specific portions of the data

You can limit the effect of the **CHANGE** command to specific portions of the data you are searching:

- To limit the search for a string to only where it appears as a *prefix* in the data, specify the **PREFIX** parameter.
- To limit the search for a string to only where it appears as a *suffix* in the data, specify the **SUFFIX** parameter.
- To limit the search for a string to only where it appears as a *word* in the data, specify the **WORD** parameter.

### RELATED REFERENCES

"CHANGE primary command" on page 808

## Changing data using prefix commands

In an FM/DB2 View or Edit editor session, you can enter prefix commands in the prefix area of one or more rows on the display. The prefix area is typically represented by a column of 6-digit numbers on the far left or far right of your display.

You can use prefix commands to:

- Insert or delete rows
- Repeat (duplicate) rows
- Move rows
- Overlay data in one or more rows with data from one or more other rows
- Shift data
- Copy or move rows to and from a clipboard
- Limit the data being edited

To set the position of the prefix area (left or right), or turn the prefix area on or off, use the **PREFIX** primary command.

You can use most of the prefix area commands on either a single row or a block of consecutive rows:

## Changing data

- To perform an operation on a single row, you enter the appropriate command code.
- To perform an operation on a block of consecutive rows, either enter the command code preceded or followed by the number of lines, or enter the appropriate block command code at the start and end lines of the block.

Generally, you need to type over only the first 1 or 2 characters of the line number to enter a prefix command. Sometimes, however, typing a single character can be ambiguous. In the following example, it is unclear whether the intended prefix command is R to repeat line 31700, or R3 to repeat the line three times:

```
031600
R31700
031800
```

In such cases, the editor assumes that you have not typed a number following the prefix command (it cannot detect if you overwrite a character with the same character). If you want to repeat the line three times, you can use any of the following procedures:

- Type one or more blanks following the R3:  
R3 700
- Type R3 and press the Erase EOF key to clear the rest of the Line Command field, or press the Erase EOF key and then type R3.
- Type one or more blanks after the R but before the number such that the number when entered is different than the characters being overtyped.:  
R 3700
- Type the number before the R, ensuring that the number when entered is different than the characters being overtyped:  
3R1700

To clear any outstanding commands in the prefix area, use the RESET primary command.

**Note:** Moving rows in an FM/DB2 editor session does not affect the order in which the rows are stored in the underlying DB2 table.

### Overlaying data in existing rows

You can overlay data in a row with data from another row by specifying the O or OO prefix commands.

When data is to be copied or moved by the C (copy) or M (move) prefix commands and overlaid on one or more existing rows, the O or OO (overlay) prefix commands specify the destination for the data. You can only overlay data onto character columns (CHAR and VARCHAR).

The data that is copied or moved overlays blanks in the destination rows.

If the destination column is VARCHAR:

- It must have a non-zero length.
- If the length of the data being moved or copied is longer than the destination column, only the data that can fit into the destination column is moved or copied.

When data is to be moved or copied and then overlaid on a destination:

- Where the destination is a *single row*:

- The O (overlay) prefix command specifies the destination for the data.  
You can type a number after the O prefix command to specify the number of times that the M or C prefix command is to be performed. For example, typing the command O3 against a row causes the data to be moved or copied and then overlaid on that row and also the next two rows.
- Where the destination is a *block of rows*:
  - The OO (overlay, multiple-line target) prefix command specifies the first and last row of the destination for the data.

To overlay one or more *single* rows:

1. Type either M or C in the prefix area of the row that is to be moved or copied.
2. Type O in the prefix area of the row that the moved or copied record is to overlay.
3. Press Enter. The data being moved or copied overlays the specified row or rows.

To overlay one or more *blocks* of rows:

1. Type either MM or CC in the prefix area of the first and last rows of a block of rows that is to be moved or copied. You can scroll (or use FIND or LOCATE) between typing the first command and the second command, if necessary.
2. Type OO in the prefix area of the first and last rows that the block of rows being moved or copied is to overlay. Again, you can scroll (or use FIND or LOCATE) between typing the first OO and the second OO, if necessary.
3. Press Enter. The rows that contain the two CC or MM commands and all of the rows between them overlay the rows that contain the two OO commands and all of the rows between them.

The number of source and receiving rows need not be the same. If there are more receiving rows, the source rows are repeated until the receiving rows are gone. If there are more source rows than receiving rows, the extra source rows are ignored.

### RELATED TOPICS

“Table Edit panel” on page 761

### RELATED REFERENCES

“Table Edit panel” on page 761

“PREFIX primary command” on page 841

“RESET primary command” on page 847

## Converting data to uppercase

In an FM/DB2 editor session, the CAPS and CASE primary commands control whether data in the data area is converted to uppercase on input (CAPS, CAPS ON or CASE UPPER), or left alone (CASE, CASE MIXED or CAPS OFF; this is the default action).

You can abbreviate the CAPS command to CAP and the CASE command to CAS.

The CAPS ON and CASE UPPER commands have slightly different effects.

CAPS or CAPS ON is similar to the ISPF editor CAPS command:

- If you overtype any data in a row, only the current column is converted to uppercase.

## Changing data

- The CHANGE command treats the new (replacement) string as if it were specified in all uppercase unless:
  - The new string is enclosed in single quotation marks, prefixed by the letter C (for example, C'New String'), or
  - The new string is specified as a hexadecimal string (for example, X'C1C2C3')If either of the previous conditions apply, the new string is not converted to uppercase.

CAPS or CAPS ON affects only rows changed after the CAPS or CAPS ON command is entered.

CASE UPPER converts all data in any new or changed rows to uppercase, regardless of how the rows are changed. CASE UPPER affects all rows inserted or changed in the current FM/DB2 editor session, including rows inserted or changed before the CASE UPPER command is entered.

The CAPS OFF, CASE, and CASE MIXED commands have the same effect: they turn off conversion to uppercase.

Any CAPS command overrides any previously entered CASE command, and any CASE command overrides any previously entered CAPS command.

### Notes:

1. In the ISPF editor with CAPS ON, a line is considered changed if you type *anything* on the line (if you overtype a space with a space, it is considered to be a change). However, in the FM/DB2 editor, overtyping a character with the same character is not considered a change.
2. The values for CASE and CAPS are not maintained between FM/DB2 editor sessions. Each new FM/DB2 editor session begins with CAPS OFF; that is, data entered in lowercase is not converted to uppercase.

### RELATED CONCEPTS

“Installation settings that affect CAPS” on page 139

### RELATED TASKS

“Changing data by overtyping” on page 140

### RELATED REFERENCES

“CAPS primary command” on page 807

“CASE primary command” on page 807

“Table Edit panel” on page 761

“Editor Options (1 of 7) panel” on page 571

## “Read-only” views, non-updateable columns

If the object you are editing is a view, it is possible that one or more columns within the view are marked as non-updateable in the DB2 catalog. In DB2 parlance, such a view is referred to as a *read-only* view.

If you attempt to edit a read-only view that contains *only* non-updateable columns, FM/DB2 displays a Browse session (instead of an Edit session) and issues an advisory message at the start of the session. Otherwise (that is, if the read-only view contains at least one updateable column), FM/DB2 displays an FM/DB2 editor session showing the non-updateable columns as protected and issues an



advisory message as the start of the FM/DB2 editor session. If you edit a view containing one or more non-updateable columns, not all edit operations are possible.

If you edit a table that contains one or more columns, excluding ROWID columns, that are marked as non-updateable in the DB2 catalog (such as a DB2 catalog table), FM/DB2 displays an FM/DB2 editor session showing the non-updateable columns as protected and issues an advisory message at the start of the FM/DB2 editor session. If you edit a table containing one or more non-updateable columns, excluding ROWID columns, not all edit operations are possible.

#### RELATED TASKS

“ROWID columns” on page 82

---

## Deleting rows

In an FM/DB2 editor session, you can delete rows by using:

- The DELETE primary command
- The D, Dn, or DD prefix commands in the prefix area next to each row (TABL display only)

In TABL display format, you can restrict the rows you delete by:

- Limiting the rows that are deleted to only excluded or only non-excluded rows
- Limiting the rows that are deleted to those within a range of rows identified by a pair of labels
- Using the D, Dn, or DD prefix commands

In SNGL display format, DELETE deletes the currently displayed row only. To delete the currently displayed row, enter:

```
DELETE
```

#### Notes:

1. In TABL display format, care should be taken when using the DELETE primary command to ensure that you only delete the rows you intend to. The command DELETE ALL (with no other parameters) deletes all rows in the table or view being edited.
2. If the table target has referential constraints, you might not be able to delete rows. For further information, see “Handling errors during an Edit session” on page 158.

#### RELATED TASKS

“Deleting rows within excluded or non-excluded rows”

“Deleting rows within a label range” on page 150

#### RELATED REFERENCES

“DELETE primary command” on page 813

“Table Edit panel” on page 761

## Deleting rows within excluded or non-excluded rows

If your data contains excluded and non-excluded rows, you can limit the effect of the DELETE command to:

- Only non-excluded rows (parameter NX), or
- Only excluded rows (parameter EX or X)



## Deleting rows

For example, the following command deletes all excluded rows:

```
DELETE ALL EX
```

And the following command deletes the first non-excluded row:

```
DELETE NX
```

### RELATED TASKS

“Excluding rows” on page 127

### RELATED REFERENCES

“DELETE primary command” on page 813

## Deleting rows within a label range

You can limit the effect of the DELETE command to a range of rows, identified by a pair of labels indicating the first and last rows to be deleted.

For example, the following command deletes all rows from the label .LABA to the label .LABB.

```
DELETE ALL .LABA .LABB
```

### RELATED TASKS

“Assigning labels to rows” on page 116

### RELATED REFERENCES

“DELETE primary command” on page 813

---

## Editing related tables

FM/DB2 provides support for editing tables that are subject to referential integrity (RI) constraints. If you are not familiar with the terms *parent table*, *dependent table*, *primary key*, *foreign key* and *referential integrity*, see the relevant DB2 manuals.

**Note:** The support provided by FM/DB2 for editing related tables applies only to DB2 tables, not to any DB2 view created on a table that is subject to RI constraints.

This section describes the behavior of the REDIT command when a DB2 error has been encountered, and the DB2 error is an RI violation. For a description of issuing the REDIT command when no RI error has occurred, see “Listing related tables” on page 151.

If FM/DB2 encounters an error when attempting to save the data changed in an Edit session and the error is due to a RI violation, it automatically determines the name of the other table (the related table) in the RI relationship. You can then start another FM/DB2 Edit session for the related table. The new Edit session (dependent session) is displayed as a new ISPF logical session, as if you had typed START on the command line and then selected FM/DB2 Edit. You can use the ISPF commands SWAP and SWAP LIST to move between different logical sessions.

FM/DB2 customizes the template for the new Edit session to make the identification of the key columns easier. If the related table is a dependent table, FM/DB2 displays only the rows with values that match the primary key in the parent table. If the related table is a parent table, you can use the IP (Insert primary key) prefix command to insert a row with a primary key matching the foreign key that caused the error.

If an Edit session has active dependent Edit sessions, you cannot save changes made in the session until you end all dependent Edit sessions. If you cancel an edit session that has active dependent Edit sessions, all dependent Edit sessions are also canceled. Any uncommitted changes in any of the dependent Edit sessions are lost.

## Listing related tables

When you are in an FM/DB2 View or Edit editor session, you can issue the REDIT primary command to display a list of tables related by a DB2 referential integrity (RI) constraint to the DB2 object currently being edited.

When you enter the REDIT primary command, you can optionally supply a field number that identifies the column in the table of the DB2 object currently being edited.

The way in which FM/DB2 responds after you enter the REDIT primary command depends on the object you are editing, the position of the cursor, and whether you specify a column number:

- When the object being edited does *not* have RI constraints, a new FM/DB2 Edit session is stacked on top of the existing Edit session. You are presented with the DB2 Edit entry panel.
- When the object being edited *does* have RI constraints:
  - When the cursor is not located in the data portion of the screen, or is not located on the data for a column of the table, FM/DB2 displays a selection list showing all the DB2 objects that are directly related to the object being edited by an RI constraint. This includes tables that are parent tables in a relationship with the table being edited, and tables that are dependent tables in a relationship with the table being edited.
  - When the cursor is located on the data for a column of the table, and that column is not part of a primary, parent or foreign key, FM/DB2 displays a selection list showing all the DB2 objects that are directly related to the object being edited by an RI constraint. This includes tables that are parent tables in a relationship with the table being edited, and tables that are dependent tables in a relationship with the table being edited.
  - When the cursor is located on the data for a column of the table, and that column is part of a primary, parent, or foreign key, FM/DB2 displays a selection list showing only those DB2 objects that are directly related to the object being edited, limited to those tables where the primary, parent, or foreign key of the table being edited contains the column where the cursor is located.
  - When you have specified a field number with the REDIT primary command and the column identified by the field number is part of a primary, parent, or foreign key, FM/DB2 displays a selection list showing only those DB2 objects that are directly related to the object being edited, limited to those tables where the primary, parent, or foreign key of the table being edited contains the column identified by the field number.
  - When a field number is provided with the REDIT command and the column identified by the field number is not part of a primary, parent, or foreign key, FM/DB2 displays a selection list showing all the DB2 objects that are directly related to the object being edited by an RI constraint. This includes tables that are parent tables in a relationship with the table being edited, and tables that are dependent tables in a relationship with the table being edited.

## Editing related tables

The list of related tables for an object is displayed by the FM/DB2 Object List utility on the Related tables panel. You can issue a number of prefix commands against any of the objects shown on the list. For example:

Prefix command	FM/DB2 displays...
EE or VE	<p>A new FM/DB2 editor session for the selected object. The new FM/DB2 editor session appears in a new ISPF logical screen (as though you had split the screen and started a new FM/DB2 session).</p> <p>The first panel displayed, and the rows displayed in the Edit (or View) session, depend on where you position the cursor at the time of entering the REDIT command:</p> <ul style="list-style-type: none"><li>• When the cursor is located on the data for a column that is part of a parent, primary, or foreign key, the new FM/DB2 editor session starts with the display of data, and contains only those rows related to the row where the cursor was located.</li><li>• When the cursor is not located on the data for a column that is part of a parent, primary, or foreign key, the new FM/DB2 editor session starts with the display of the DB2 Edit (or DB2 View) entry panel (where you can alter the object name if required), and contains all rows of the object.</li></ul>
E or V	<p>A new FM/DB2 Edit session stacked on top of the existing Edit session.</p>

To see all the available commands, type "?" in the selection field (**SEL**) to the left of any entry and press Enter.

You can only issue the REDIT command when editing a table. The REDIT command is inoperative when editing a view.

### RELATED REFERENCES

- Chapter 8, "Working with lists of DB2 objects," on page 243
- "Related tables panel" on page 699
- "REDIT primary command" on page 845

## Self-referencing constraints

A self-referencing constraint exists if a DB2 object is subject to a primary or foreign key relationship in which the parent table and the dependent table are the same table. If the DELETE rule for the relationship is CASCADE, the deletion or change of one row can cause a recursive deletion of other rows in the table. If FM/DB2 detects a self-referencing constraint defined on a table, it does not attempt to determine which rows are affected by a deletion or change of a primary key value. This also applies to any other tables affected by other relationships defined on the table.

## Referential integrity errors

There are two types of referential integrity errors:

- The first type of referential integrity error occurs if you are editing a parent table and you either delete or update a primary key value. If the restrict rule applies to foreign key values in the dependent table, DB2 rejects the update or delete operation. To make the change to the primary key value in the parent table, you must edit the dependent table and either delete or change all rows with a matching foreign key.
- The second type of referential integrity error occurs if you are editing a dependent table and you create a foreign key value for which there is no corresponding entry in the parent table. DB2 rejects the insert or update operation (because a foreign key value cannot exist without a corresponding primary key value). To change the value of the foreign key in the dependent table, you must edit the parent table and create a row with a primary key value that matches the value of the new foreign key value in the dependent table.

## RELATED TASKS

“Handling errors during an Edit session” on page 158

## Starting an Edit session of a related table

To start an FM/DB2 Edit session of a related table, perform one of these actions:

- In the information panel for an RI error (accessed by typing E in the prefix area for an RI error), type REDIT on the command line.
- Use the RE prefix command against a row marked in error if the error is an RI error.

**Note:** When the object being edited is a DB2 view, both the REDIT line command and the RE prefix command are disabled.

## RELATED REFERENCES

“REDIT primary command” on page 845

“Table Edit panel” on page 761

## Differences when you edit a related table

An FM/DB2 Edit session for a related table is similar to a typical Edit session, with the following exceptions:

- The new session starts with the display of data for the related table.
- You cannot change the edit options. The current global edit options apply.
- There is no opportunity to edit the template before displaying the data.
- The panel title shows “Table Edit (related)” (instead of “Table Edit”).
- The location information is replaced with either “PARNT” or “DPDNT” and the name of the other object in the relationship. “PARNT” indicates that the other table is the parent table in the relationship. “DPNDT” indicates the other table is the dependent table in the relationship.
- For a dependent table, the template includes a WHERE clause that limits the data displayed to only those rows that match the primary key value in the parent table. If the parent table is subject to a self-referencing constraint, all rows might be displayed.
- The template includes information about the order in which columns are displayed. Columns that comprise the primary or foreign key are displayed (in order) at the left (TABL display format), or top (SNGL display format), of the other object in the relationship.
- In TABL display format, columns that form part of the relationship's key are identified with a “K” in the sixth character of the scale header line.

## Editing related tables

- If an Edit session has active dependent Edit sessions (that is, you have used either the REDIT primary command or the RE prefix command to start another FM/DB2 edit session of a related table, *and* that Edit session is still active), you cannot save any changes you have made to data until you end all dependent Edit sessions.
- If you cancel an Edit session that has active dependent Edit sessions, FM/DB2 also cancels all dependent Edit sessions. Any uncommitted changes in the canceled dependent Edit sessions are lost.

### RELATED TASKS

“Self-referencing constraints” on page 152

### RELATED REFERENCES

“REDIT primary command” on page 845

“Table Edit panel” on page 761

## Differences when saving or canceling while editing a related table

If you have initiated one or more Edit sessions for related tables, the following restrictions apply:

- If there are active dependent Edit sessions (that is, you have used either the REDIT primary command or the RE prefix command to start another FM/DB2 Edit session for a related table, *and* any of those edit sessions are still active), you cannot save any changes to data until you have ended all dependent Edit sessions.
- If you cancel an Edit session that has active dependent Edit sessions, any dependent Edit sessions are also canceled. Any uncommitted changes in the canceled dependent Edit sessions are lost.

### RELATED REFERENCES

“REDIT primary command” on page 845

“Table Edit panel” on page 761

## Navigating between Edit sessions

To switch between two or more FM/DB2 Edit sessions, use the ISPF commands SWAP and SWAP LIST. For more information, see the *z/OS ISPF User's Guide Vol 1*.

If the table you are editing is part of a larger RI structure, you might need to start several Edit sessions of related tables to make the required changes to the original table.

## Deleting a primary key

If you delete a row in a parent table, it might generate an error if there are rows in the dependent table and the delete restrict rule is specified for the relationship. The delete restrict rule prevents the deletion of the primary key value unless you first delete (or change) all the rows in the dependent table with foreign key values matching the primary key value.

In this situation:

1. Start an FM/DB2 Edit session for the dependent table by either using the RE prefix command, or REDIT primary command from the error information panel. Usually, only those rows that would be affected by the deletion of the primary key in the parent table are displayed (see following note).

2. Either delete the displayed rows (see following note), or change the values of the foreign keys to another valid value.
3. Press the Exit function key (F3) to validate and commit your changes.
4. Return to the Edit session for the primary table and proceed with deletion of the primary key value.

**Notes:**

1. In most cases, FM/DB2 shows only those rows that would be affected by the deletion of the primary key in the parent table. The exception is the situation where the parent table has a self-referencing constraint that might cause the deletion of other rows in the parent table if a primary or parent key value is deleted or changed. In this situation, FM/DB2 shows all rows and you must select the dependent rows.
2. If the parent or dependent tables are also parent or dependent tables in other relationships, changes to the primary or foreign key values can result in other errors.

## RELATED REFERENCES

"REDIT primary command" on page 845

"Table Edit panel" on page 761

## Inserting a new foreign key

If you insert a row in a dependent table, it might generate an error if there is no row in the parent table with a corresponding primary key value. DB2 prevents the insertion of the foreign key value until a primary key is created in the parent table.

The parent table can be the same as the table currently being edited (a self-referencing constraint. This is indicated by the absence of an "R" in the rightmost position of the prefix area for the row in error. You can use the E prefix command to display an information panel with details of the relationship name, the parent and dependent table names, and the names of the columns in the key in both the parent and dependent tables.

In the situation where the parent and dependent tables are different:

1. Start an FM/DB2 Edit session for the parent table by either using the RE prefix command, or REDIT primary command from the error information panel.
2. Use the IP prefix command to insert a new row in the table, with a primary key that matches the foreign key value entered in the Edit session for the dependent table. You can also change an existing row so that its primary key matches the foreign key entered in the Edit session of the dependent table.
3. Press the Exit function key (F3) to validate and commit your changes.
4. Return to the original Edit session and save the new foreign key value.

**Note:** If the parent or dependent tables are also parent or dependent tables in other relationships, changes to the primary or foreign key values can result in other errors.

## RELATED TASKS

"Self-referencing constraints" on page 152

## RELATED REFERENCES

"REDIT primary command" on page 845

"Table Edit panel" on page 761

### Updating a primary key

DB2 interprets updating a primary key as a deletion, followed by an insertion of a new row the same as the deleted row but with the new primary key value.

If you update a row in a parent table, it can generate an error if there are rows in the dependent table with matching foreign key values and the delete restrict rule is specified for the relationship. The delete restrict rule prevents the deletion of the primary key value unless you first delete (or change) all the rows in the dependent table with foreign key values matching the primary key value.

In this situation:

1. Repeat the row containing the original primary key value you want to change.

**Note:** After the repeat operation, the new row is displayed immediately below the repeated row and is intensified.

2. Change the primary key in the *new* row to the required value.
3. Use the SAVE primary command to verify that there are no other DB2 errors.
4. Delete the original row.
5. Start an FM/DB2 Edit session for the dependent table by either using the RE prefix command, or REDIT primary command from the error information panel. Usually, only those rows that would be affected by the deletion of the primary key in the parent table are displayed (see following note).
6. Either delete the displayed rows (see following note), or change the values of the foreign keys to another valid value.
7. Press the Exit function key (F3) to validate and commit your changes.
8. Return to the Edit session for the primary table and proceed with deletion of the primary key value.

#### Notes:

1. In most cases, FM/DB2 shows only those rows that would be affected by the deletion of the primary key in the parent table. The exception is the situation where the parent table has a self-referencing constraint that might cause the deletion of other rows in the parent table if a primary or parent key value is deleted or changed. In this situation, FM/DB2 shows all rows and you must select the dependent rows.
2. If the parent or dependent tables are also parent or dependent tables in other relationships, changes to the primary or foreign key values can result in other errors.

#### RELATED REFERENCES

"REDIT primary command" on page 845

"SAVE primary command" on page 851

"Table Edit panel" on page 761

### Adding a primary key

You can add a row with a new primary key value to a table using one of these methods:

- You can insert a new row in the table (I prefix command) and then change the values in the new row to create the required primary key value.
- You can repeat an existing row and then change the values in the new row to create the required primary key value.



**Note:** If you use this method, you *must* change the new row (added immediately below the original row, and intensified), rather than the original row. The reason for this is that changing the original row instead of the new row results in FM/DB2 attempting to update the original row with the new primary key value. This change fails if the original row has dependent rows, and SQLCODE -531 results. FM/DB2 also reports a duplicate row error (SQLCODE -803) against the new row as it attempts to insert a new row, identical to the original row.

## RELATED TASKS

- “Updating a primary key” on page 156
- “Handling errors during an Edit session” on page 158

## RELATED REFERENCES

- “Table Edit panel” on page 761

---

## Issuing DB2 commands from within an FM/DB2 session

When you are working in an FM/DB2 session, you can issue a DB2 command and view the output returned by DB2.

There are two ways in which you can enter a DB2 command from within an FM/DB2 session:

- By displaying the Enter and Execute DB2 Commands panel and entering the required DB2 command (prefixed by "DB2 ") on the panel.
- From some FM/DB2 panels, entering the required DB2 command on the command line.

### Issuing DB2 commands from the Enter and Execute DB2 Commands panel

To issuing DB2 commands from the Enter and Execute DB2 Commands panel:

1. Display the Enter and Execute DB2 Commands panel by performing one of these actions:
  - Select option **6** (Command) from the Primary Option Menu panel and press Enter.
  - From the Process pull-down menu on the Action bar, select option **1** (DB2 Command) and press Enter.

2. On the Enter and Execute DB2 Commands panel, under **DB2 Command:**, type a hyphen (-) followed immediately by the DB2 command you want to issue.

For example:

```
-DISPLAY ARCHIVE
```

**Note:** If you do not prefix the command with a hyphen, one is added by FM/DB2.

3. When you issue either the DISPLAY THREAD or DISPLAY DATABASE command, you can optionally specify the maximum number of lines to be returned in the **Line count** field.
4. Press Enter.

FM/DB2 displays the output from the DB2 command in an ISPF View session as shown in Figure 46 on page 158.



### Issuing DB2 commands from the command line

You can issuing a DB2 command from the command line on these FM/DB2 panels:

- Table Browse panel
- Table Edit panel
- Table View panel
- Object list panels displayed with the Object List utility
- Privilege details panels
- Enter, Execute and Explain SQL Statements panel

To issue a DB2 command from the command line of an FM/DB2 panel:

1. Type DB2, followed a space, and then the DB2 command you want to issue.

For example, to issue the DB2 command DISPLAY ARCHIVE, type:

```
DB2 DISPLAY ARCHIVE
```

2. Press Enter.

FM/DB2 displays the output from the DB2 command in an ISPF View session as shown in Figure 46.

```
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW      SYS07228.T121015.RA000.FMUSER.R0227849      Columns 00001 00072
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>      your edit profile using the command RECOVERY ON.
000001 DSNV401I -DFE2 DISPLAY THREAD REPORT FOLLOWS -
000002 DSNV402I -DFE2 ACTIVE THREADS -
000003 NAME     ST A   REQ ID      AUTHID  PLAN      ASID TOKEN
000004 DB2CALL  T      144 FMUSER    FMUSER  FMN2PLN8 00C0  302
000005 DB2CALL  T      *    2 FMUSER    FMUSER          00C0  303
000006 DISPLAY ACTIVE REPORT COMPLETE
000007 DSN9022I -DFE2 DSNVDT '-DISPLAY THREAD' NORMAL COMPLETION
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left    F11=Right   F12=Cancel
```

Figure 46. Example of output displayed by DB2 after DB2 command issued

#### RELATED REFERENCES

“Enter and Execute DB2 Commands panel” on page 597

## Handling errors during an Edit session

FM/DB2 might report errors if it attempts to implement the changes to data that you have made in an Edit session. These errors are detected by DB2 when FM/DB2 issues INSERT, UPDATE, or DELETE SQL statements. SQL errors can arise for many reasons, including violation of uniqueness, referential integrity and check data constraints defined on the DB2 object being edited. If you are unfamiliar with these concepts, see the *DB2 UDB for z/OS Administration Guide*.

If FM/DB2 detects an error, it marks the row that caused the error with either “=ERR ”, “=ERR R”, or the SQLCODE in the prefix area. The choice of error indicator is determined by the **Show SQLCODE** editor option. Rows that were

deleted are reinserted at the top of the current display (in TABL display format). Save operations cannot proceed until all pending errors have been corrected. If the DB2 object you are editing is subject to many constraints, or if many changes have been made to the data without verification, it might be impossible to resolve all errors. In this situation, cancel the Edit session.

### RELATED TASKS

- “View and Edit options (options 1 and 2)” on page 48
- “Setting options for the current FM/DB2 editor session” on page 99
- “Ending an FM/DB2 editor session” on page 102
- “Example of correcting an error during an Edit session” on page 161

### RELATED REFERENCES

- “Editor Options (3 of 7) panel” on page 579

## Determining why an error occurred

You can find more information about the error detected against a row by typing E in the prefix field for that row. An error information panel is displayed with an explanation of why DB2 rejected the change operation.

If the SQLCODE is displayed in the prefix area, see the *DB2 UDB for z/OS Messages and Codes* for a detailed explanation of the error.

Some errors are the result of referential integrity (RI) constraint violations. If the RI relationship applies to two tables, these errors are indicated by the presence of an “R” in the rightmost position of the prefix area.

You can use the RE prefix command against rows with RI errors that apply to two tables to start another FM/DB2 Edit session. The new session is an Edit session for the other table affected by the RI error.

### RELATED TASKS

- “Editing related tables” on page 150
- “Example of correcting an error during an Edit session” on page 161

### RELATED REFERENCES

- “Table Edit panel” on page 761

## “Duplicate Row” errors

FM/DB2 reports a “Duplicate Row Error” if the insert or update operation would have resulted in two rows with the same value with respect to a unique index defined on the table. You can use the Primary Key and Unique Index indicators to identify columns of the table that are part of unique indexes. Note that if you used row selection criteria to limit the amount of data in your Edit session, the duplicate row might not be displayed in your Edit session.

### RELATED TASKS

- “Selecting rows” on page 64

## “No Primary Key” errors

FM/DB2 reports a “No Primary Key” error if your change would have created a foreign key value for which there is no corresponding primary key in the parent table of the relationship. This is a *referential integrity* (RI) constraint error. The prefix

## Handling errors during an Edit session

area error indicator only shows an “R” in the rightmost position if the parent table is different to the table currently being edited.

You can use the foreign key indicators to identify columns of the table that are defined as foreign keys.

**Note:** The foreign key information is only available if the “Retrieve foreign key information when building templates” option was selected when the template for the object was built.

The error information panel for this error shows the names of the parent and dependent tables in the relationship that caused the error, and the name of the relationship. At the bottom of the panel are the names of the columns that comprise the key in both the parent and dependent tables, along with the value that caused the error.

If the parent table is different to the dependent table, you can enter the RE prefix command against the row, or enter the REDIT primary command from the error information panel, to edit the parent table of the relationship and correct the error.

### RELATED TASKS

“Editing related tables” on page 150

### RELATED REFERENCES

“FM/DB2 Systems Options (1 of 4) panel” on page 623

“REDIT primary command” on page 845

## “Delete Restrict Rule” errors

FM/DB2 reports a “Delete Restrict Rule” error if your deletion or change would have deleted one or more rows in dependent tables, but the delete rule is RESTRICT. These are referential integrity (RI) constraint errors.

The error information panel for this error shows the names of the parent and dependent tables in the relationship that caused the error, and the name of the relationship. At the bottom of the panel are the names of the columns that comprise the key in both the parent and dependent tables, along with the value that caused the error.

You can enter the RE prefix command against the row, or enter the REDIT command from the error information panel, to edit the dependent table of the relationship and correct the error.

### RELATED TASKS

“Editing related tables” on page 150

### RELATED REFERENCES

“REDIT primary command” on page 845

## “Check Constraint” errors

FM/DB2 reports a “Check Constraint Error” if a change violates a check constraint defined on either a column or the table. The panel shows the name of the constraint that caused the change to fail. You can press the ShowCon function key (F5), or issue the SHOWCON command, to display an ISPF Edit session showing the SQL text of the constraint.

## “Row Not Found” errors

FM/DB2 reports a “Row Not Found Error” if the original row was not found when either a DELETE or UPDATE operation was attempted. This can occur because another user has changed the row since the data was originally retrieved from DB2. The recommended action in this situation is to restart the Edit session with a current copy of the data. This can also occur if the DB2 object being edited has a TIME data type column and the system options are set to display the data for this column in USA format.

### RELATED TASKS

“FM/DB2 system options (option 0.2)” on page 46

“DATE and TIME columns” on page 131

### RELATED REFERENCES

“FM/DB2 Systems Options (1 of 4) panel” on page 623

## Deadlocks or timeouts

DB2 might encounter a deadlock or timeout condition (SQLCODE -911) if it attempts to implement changes made in an FM/DB2 Edit session. If this occurs there is a delay, followed by the display of the SQL error pop-up panel with the explanation for the -911 SQLCODE.

If you encounter this error, be aware that:

- Changes made to any row marked with -911 have **not** been completed.
- DB2 has rolled back the current unit of work. This means that all uncommitted changes made in the current Edit session have been lost.
- After the rollback of the current unit of work, the data shown in the FM/DB2 Edit session might not reflect the current state of the data in the DB2 table.

The recommended course of action is to cancel the current Edit session and restart with a new copy of the data. If the problem persists contact your DB2 systems administrator for assistance in determining which other DB2 task is preventing access to the DB2 object.

### RELATED TASKS

“Ending an FM/DB2 editor session” on page 102

## Example of correcting an error during an Edit session

If an error occurs during an Edit session, FM/DB2 displays “=ERR ”, “=ERR R”, or the SQLCODE in the prefix area of the row (or rows) in error. Figure 47 on page 162 shows an error has occurred for one row.

## Handling errors during an Edit session

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Table Edit		
TABLE FMUSER.EMP	1 of 42		
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+-----1-->	-	<---+-----1----->
000000	****	Top of data	****
000001	000010	CHRISTINE<	I HAAS<
000002	000020	MICHAEL<	L THOMPSON<
000003	000030	SALLY<	A KWAN<
000004	000050	JAN<	B GEYER<
-803	000050	IRVING<	F STERN<
000006	000070	EVA<	D PULASKI<
000007	000090	EILEEN<	W HENDERSON<
000008	000100	THEODORE<	Q SPENCER<
000009	000110	VINCENZO<	G LUCCHESI<
000010	000120	SEAN<	O'CONNELL<
000011	000130	DOLORES<	M QUINTANA<
000012	000140	HEATHER<	A NICHOLLS<
Command ==>	Scroll PAGE		
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

Figure 47. Example: error indicated during Edit session

To determine the type of error, type E in the prefix area for the row in error and press Enter. FM/DB2 displays an error information panel that describes the error and instructions about what you can do to correct the error.

DB2 Save Error Action			
S	DB2 reported an error while attempting to save this row.	1 of 42	Format TABL
F		ENO	HIREDATE
L	Duplicate Row Error	#7	DATE
	The insert or update operation on this line would have resulted in two rows with the same index key, and the index is defined as unique.	)	<---+----->
0			01/01/1965
0			10/10/1973
0			04/05/1975
0			08/17/1949
0	Instructions:		09/14/1973
0	Press ENTER or enter EXIT to return to the edit session and correct the error in this line.		09/30/1980
E			08/15/1970
0	Enter CANCEL to terminate the Edit session.		06/19/1980
0	Any changes made since the last commit point will be lost.		05/16/1958
0			12/05/1963
0			07/28/1971
0			12/15/1976
0	Command ==>		Scroll PAGE
C	F1=Help	F2=Split	F3=Exit
	F8=Forward	F9=Swap	F12=Cancel
			F7=Backward
			F6=RChange
			F12=Cancel

Figure 48. Example: error information describing the type of error that occurred during an Edit session

You can then take one of the following actions:

- Cancel the Edit session by pressing the Cancel function key (F12). Any uncommitted changes are lost.
- Press Enter or the Exit function key (F3) to return to the Edit session.
- Use the REDIT primary command (if the error information panel offers it as an option) to edit the related table to correct the error.

**Note:** If the error information panel does *not* offer the REDIT primary command as an option, REDIT displays an Edit session.

In the example shown in Figure 47 on page 162, the error has been caused by two rows having the same index key (rows 4 and 5 both have an EMPNO of 000050). To correct the error:

1. Press Enter to return to the Edit session.
2. Change the offending index key for row 5 to a unique value such as 000060.
3. Press the Exit function key (F3) to return to the Edit session.

### RELATED REFERENCES

“Table Edit panel” on page 761

“REDIT primary command” on page 845



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## Chapter 5. Creating and dropping DB2 objects

You can use FM/DB2 to create and drop DB2 objects without needing to know the SQL commands for these operations.

To create or drop DB2 objects, use the Objects utility (3.2).

The main panel for the Objects utility is the DB2 Object Functions panel.

To display the DB2 Object Functions panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 2 (Objects)

Now that you have the DB2 Object Functions panel displayed, you can select the DB2 object type you want to create or drop:

1. Specify the relevant number in the **Object Type** entry field. When you first display the DB2 Object Functions panel, this field is initialized to 3 (Table).
2. If you intend to drop an object but would like FM/DB2 to display a Drop Confirmation panel before it actually drops the object you have specified, ensure the **Confirm object drop** option is checked.
3. To *create* the specified object type, type C on the command line.  
To *drop* the specified object type, type D on the command line.
4. Press Enter.

Table 7 on page 165 shows the DB2 object types you can create or drop.

*Table 7. Supported actions for each DB2 object*

Object Type	Create	Drop
Database	Yes	Yes
Table space	Yes	Yes
Table	Yes	Yes
View	Yes	Yes
Alias	Yes	Yes
Index	Yes	Yes
Synonym	Yes	Yes
Distinct Type	Yes	Yes
Function	Yes	Yes
Stored Procedure	Yes	Yes
Trigger	Yes	Yes
Auxiliary Table	Yes	No <sup>1</sup>



## Creating and dropping DB2 objects

Table 7. Supported actions for each DB2 object (continued)

Object Type	Create	Drop
<b>Notes:</b>		
1. Use table drop. Populated auxiliary tables can only be dropped by dropping their associated base table. To drop an unpopulated auxiliary table without dropping its base table:		
<ul style="list-style-type: none"><li>• Use the drop table function (by selecting Object Type 3 and entering D on the command line on the DB2 Object Functions panel.</li><li>• Specify the auxiliary table as the table to drop.</li></ul>		

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“Utility Functions panel” on page 797

“DB2 Object Functions panel” on page 550

“Drop Confirmation panel” on page 567

## Working with the Create and Drop panels

Here are a few general points relating to the usage of the Create and Drop panels:

You cannot use wildcard characters when using the Create or Drop panels.

You can type **SQL** on the command line of the main Create and Drop panels and the Drop Confirmation panel to examine the SQL that would be constructed given the current panel inputs.

If you receive a validation error when inputting data on the panels, a brief error message is displayed on the top right hand corner of the panel. To obtain a more detailed explanation of the error message, press the Help function key (F1). Also, if you receive an SQL error during the Create or Drop operation, you can press the Help function key (F1) to receive a more detailed explanation. Press the Help function key (F1) again to examine the SQL statement and the cause of the error.

Some of the Create panels such as the Create Table Space panel and the Create Function panel incorporate a number of subsidiary panels to collect the Create statement inputs. Generally, only a few of these panels are required, therefore you do not need to visit all of the lower-level panels before executing the Create statement. The inputs and the panels that are required are indicated on the main panel. Generally, you can visit and revisit the subsidiary panels in any order but exceptions are indicated on the main panel. If you receive an SQL error during the create operation, you need only return to the panels that are in error to correct the errors and then try the Create operation again. When inputting your data on the subsidiary panel, you can press Enter to validate your changes, the Exit function key (F3) to save your changes and return to the main panel, or the Cancel function key (F12) to return to the main panel without saving your changes.

Many of the subsidiary panels use ISPF tables to manage object information that can have more than one occurrence, such as the columns of a table or the parameters of a function. Each line in the table contains a set of values for an occurrence of the piece of information.

When editing the ISPF tables, you can repeat, delete, and insert lines when the CMD field is displayed using the following commands:

- I** Inserts a new (blank) line at the current position.
- I(*n*)** Inserts *n* new (blank) lines at the current position.
- D** Deletes the line.
- D(*n*)** Deletes *n* lines, starting at the current position.
- R** Repeats the line.
- R(*n*)** Repeats the line *n* times.

If the **Cmd** field is not displayed, you can only edit some fields in the existing lines.

## SQL Keywords

Table 8 through to Table 19 on page 175 show, for each of the Create panels (and, where applicable, for each subsidiary panel), the SQL keyword (or variable) that relates to each entry field on that panel.

For example, Table 8 shows that, on the main Create Database panel, the optional entry field **Storage group name** relates to the SQL keyword **STOGROUP**. When FM/DB2 builds the **CREATE DATABASE** statement, if you have entered a name (*stogroup-name*) in the **Storage group name** entry field, FM/DB2 generates the storage group part of the **CREATE DATABASE** statement syntax as:

**STOGROUP** *stogroup-name*

### Notes:

1. In some cases, a keyword that is valid for the connected DB2 version is not displayed on any panel because, although the keyword is supported, it is not required to build the SQL statement. The create index **TYPE** parameter is an example of this.
2. Some keyword values are managed entirely by FM/DB2 and are displayed only as output fields on the panels, and are included here for reference. For example, for the **PART** keyword, FM/DB2 generates the value set for **NUMPARTS**. Fields that are displayed elsewhere as input fields are not redocumented if they reappear as output fields.
3. Where possible, fields are associated with SQL keywords (rather than the values associated with those keywords). Otherwise, they are associated with the value-names shown in the relevant SQL syntax diagram. Occasionally more detailed context is given to avoid ambiguity.

Table 8. Create Database

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See "Create Database panel" on page 449.)	
	(Database) Name	<i>database-name</i>
	Storage group name	<b>STOGROUP</b>
	Buffer pool for table spaces	<b>BUFFERPOOL</b>
	Buffer pool for indexes	<b>INDEXBP</b>
	Database usage	<b>AS WORKFILE</b>
	Database usage	<b>AS TEMP</b>
	Data encoding	<b>CCSID</b>
	Member name	<b>FOR MEMBER</b>

## Creating and dropping DB2 objects

Table 9. Create Table Space

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Table Space panel” on page 489.)	
	(Table space) Name	<i>table-space-name</i>
	Database	<b>IN</b>
	Buffer pool	<b>BUFFERPOOL</b>
1. Type	(See “Create Table Space: Type panel” on page 499.)	
	Table Space Type	<b>LARGE</b>
	Table Space Type	<b>LOB</b>
	Segment size	<b>SEGSIZE</b>
	No. of partitions	<b>NUMPARTS</b>
	Max. partition size	<b>DSSIZE</b>
2. Allocation	(See “Create Table Space: Allocation panel” on page 491.)	
	VCAT name	<b>VCAT</b>
	Storage group name	<b>STOGROUP</b>
	Primary space	<b>PRIQTY</b>
	Secondary space	<b>SECQTY</b>
	Free pages	<b>FREEPAGE</b>
	Free space	<b>PCTFREE</b>
	Maximum rows per page	<b>MAXROWS</b>
3. Data Storage Options	(See “Create Table Space: Data Storage Options panel” on page 494.)	
	Use data compression	<b>COMPRESS</b>
	Close if not in use	<b>CLOSE</b>
	Erase data on delete	<b>ERASE</b>
	Define data set now	<b>DEFINE</b>
	INSERT uses clustering index	<b>MEMBER CLUSTER</b>
	Track modified changes	<b>TRACKMOD</b>
	Log changes to LOB columns	<b>LOG</b>
	Data encoding	<b>CCSID</b>
4. Locking Options	(See “Create Table Space: Locking Options panel” on page 498.)	
	Locksize parameter	<b>LOCKSIZE</b>
	Application Locking	<b>LOCKMAX</b>
5. Data Sharing Options	(See “Create Table Space: Data Sharing Options panel” on page 492.)	
	Selective Partition Locking	<b>LOCKPART</b>
	Group Buffer Pool Usage	<b>GBPCACHE</b>
6. Define Partitions	(See “Create Table Space: Define Partitions panel” on page 496.)	
	Pt. No.	<b>PART</b>
	VCAT name	<b>VCAT</b>
	Storage group name	<b>STOGROUP</b>
	Primary space	<b>PRIQTY</b>
	Secndry space	<b>SECQTY</b>
	Erase Data	<b>ERASE</b>

Table 9. Create Table Space (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	Free pages	<b>FREEPAGE</b>
	Free space	<b>PCTFREE</b>
	Use Data Cmpr	<b>COMPRESS</b>
	Group BP Caching	<b>GBPCACHE</b>

Table 10. Create Table

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Table panel” on page 486.)	
	(New Table) Owner	<i>table-name</i>
	(New Table) Name	<i>table-name</i>
	(New Table) Database	<b>IN</b>
	(New Table) Table Space	<b>IN</b>
	(Model Table) Owner	<b>LIKE</b>
	(Model Table) Name	<b>LIKE</b>
1. Columns	(See “Create Table: Columns panel” on page 505.)	
	Column Name	<i>column-name</i>
	Data Type	<i>built-in-data-type</i>
	Len	<i>built-in-data-type</i>
	Pr	<i>built-in-data-type</i> (numeric only)
	Sc	<i>built-in-data-type</i> (decimal only)
	For Data	<b>FOR ... DATA</b>
	User Defined Data Type	<i>distinct-type-name</i>
2. Default Values	(See “Create Table: Nulls and Default Values panel” on page 511.)	
	Not Null	<b>NOT NULL</b>
	Default Value	<b>WITH DEFAULT</b>
3. Options	(See “Create Table: Options panel” on page 514.)	
	Editproc	<b>EDITPROC</b>
	Validproc	<b>VALIDPROC</b>
	OBID value	<b>OBID</b>
	Audit Options	<b>AUDIT</b>
	Data Storage Options	<b>CCSID</b>
	Log data capture changes	<b>DATA CAPTURE</b>
	Restrict drop of table	<b>WITH RESTRICT ON DROP</b>
4. Primary Key	(See “Create Table: Unique Constraints panel” on page 523.)	
	Constraint Name	<b>CONSTRAINT</b> <i>constraint-name</i> <b>PRIMARY KEY</b>
	Order	<b>PRIMARY KEY</b> ( <i>column-name ...</i> )
5. Foreign Key	(See “Create Table: Column Referential Constraints panel” on page 503.)	
	Constrnt Name	<b>FOREIGN KEY</b>
	Owner	<b>REFERENCES</b>

## Creating and dropping DB2 objects

Table 10. Create Table (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	Table Name	REFERENCES
	Column Name	REFERENCES
	ON DLT	ON DELETE
6. Check Constraints	(See “Create Table: Column Check Constraints panel” on page 501.)	
	Table Constraint	CONSTRAINT <i>constraint-name</i> CHECK
	Check Condition	CHECK( <i>check-condition ...</i> )
	(Constraint) Name	CONSTRAINT <i>constraint-name</i> CHECK
	(Constraint) Condition	CHECK( <i>check-condition ...</i> )
7. Procedure Exits	(See “Create Table: Procedure Exits panel” on page 516.)	
	Name	FIELDPROC
	Parameters	FIELDPROC
8. Generate Values	(See “Create Table: Generate Values panel” on page 507.)	
	Gen (A/D)	GENERATE
	As Idty (Y/N)	AS IDENTITY
	Start value	START WITH
	Incr value	INCREMENT BY
	Caching Option	(NO) CACHE

Table 11. Create View

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create View panel” on page 530.)	
	Owner	<i>view-name</i>
	Name	<i>view-name</i>
	Select statement	AS
	Column names	<i>column-name ...</i>
	With Check Option	WITH ... CHECK OPTION

Table 12. Create Alias

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Alias panel” on page 445.)	
	(Alias) Owner	<i>alias-name</i>
	(Alias) Name	<i>alias-name</i>
	(Table or View) Location	FOR
	(Table or View) Owner	FOR
	(Table or View) Name	FOR

Table 13. Create Index

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Index panel” on page 464.)	

Table 13. Create Index (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	Owner	<i>index-name</i>
	Name	<i>index-name</i>
	Table Owner	<b>ON</b>
	Table Name	<b>ON</b>
	Buffer Pool	<b>BUFFERPOOL</b>
1. Index Type	(See “Create Index: Type panel” on page 474.)	
	Uniqueness	<b>UNIQUE WHERE NOT NULL</b>
	Internal format	<b>TYPE</b>
	Clustering Index Option	<b>CLUSTER</b>
	Piecesize	<b>PIECESIZE</b>
	Multiplier	<b>PIECESIZE</b>
2. Column Selection	(See “Create Index: Column Selection panel” on page 467.)	
	Order	<i>column-name</i>
	(A/D)	<i>column-name</i>
3. Allocation	(See “Create Index: Allocation panel” on page 466.)	
	VCAT name	<b>VCAT</b>
	Storage group name	<b>STOGROUP</b>
	Primary space	<b>PRIQTY</b>
	Secondary space	<b>SECQTY</b>
	Free pages	<b>FREEPAGE</b>
	Free space	<b>PCTFREE</b>
4. Options	(See “Create Index: Options panel” on page 469.)	
	Close if not in use	<b>CLOSE</b>
	Erase data on delete	<b>ERASE</b>
	Defer building index	<b>DEFER</b>
	Define data set now	<b>DEFINE</b>
	Allow COPY of index	<b>COPY</b>
	Group Buffer Pool Usage	<b>GBPCACHE</b>
5. Partitions	(See “Create Index: Partitions panel” on page 471.)	
	Parttn. Number	<b>PART</b>
	VCAT name	<b>VCAT</b>
	Storage group name	<b>STOGROUP</b>
	Primary space	<b>PRIQTY</b>
	Secndry space	<b>SECQTY</b>
	Erase Data	<b>ERASE</b>
	Free pages	<b>FREEPAGE</b>
	Free space	<b>PCTFREE</b>
	Group BP Caching	<b>GBPCACHE</b>
6. Partition Values	(See “Create Index: Partition Values panel” on page 473.)	
	Value	<b>VALUES</b>

## Creating and dropping DB2 objects

Table 14. Create Synonym

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Synonym panel” on page 485.)	
	(Synonym) Name	<i>synonym</i>
	(Table) Owner	<b>FOR</b>
	(Table) Name	<b>FOR</b>

Table 15. Create Distinct Type

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Distinct Type panel” on page 451.)	
	Schema	<i>distinct-type-name</i>
	Name	<i>distinct-type-name</i>
	Source Type	<b>AS</b>
	Length	<b>AS</b>
	Scale	<b>AS</b>
	For Data	<b>FOR ... DATA</b>
	Encoding Method	<b>CCSID</b>

Table 16. Create Function

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Function panel” on page 457.)	
	Schema	<i>function-name</i>
	Name	<i>function-name</i>
	Unique Name	<b>SPECIFIC</b>
1. Parameters	(See “Create Function: Parameters panel” on page 460.)	
	Parameter Name	<i>parameter-name</i>
	Data Type	<i>built-in-data-type</i>
	Len	<i>built-in-data-type</i>
	Pr	<i>built-in-data-type</i>
	Sc	<i>built-in-data-type</i>
	For Data	<b>FOR ... DATA</b>
	User Defined Data Type	<i>distinct-type-name</i>
2. Parameter Types	(See “Create Function: Parameter Types panel” on page 459.)	
	As LOC	<b>AS LOCATOR</b>
	Owner	<b>TABLE LIKE</b>
	Name	<b>TABLE LIKE</b>
3. Returned Data Type	(See “Create Function: Returned Data Type panel” on page 462.)	
	(Returns) Data Type	<b>RETURNS</b>
	(Returns) Schema	<b>RETURNS</b>
	(Returns) Length	<b>RETURNS</b>
	(Returns) Scale	<b>RETURNS</b>

Table 16. Create Function (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	(Returns) For Data	RETURNS ... FOR ... DATA
	(Returns) Encoding Method	RETURNS ... CCSID
	(Cast From) Data Type	CAST FROM
	(Cast From) Length	CAST FROM
	(Cast From) Scale	CAST FROM
	(Cast From) For Data	CAST FROM ... FOR ... DATA
	(Cast From) Encoding Method	CAST FROM ... CCSID
	As Locator	RETURNS ... AS LOCATOR
4. Option List (1/2)	(See “Create Function: Option List (1/2) panel” on page 453.)	
	External Name	EXTERNAL NAME
	Scratchpad	(NO) SCRATCHPAD
	Package Collection	(NO) COLLID
	Workload Manager Environment	WLM ENVIRONMENT
	Time Limit	ASUTIME (NO) LIMIT
	Language	LANGUAGE
	SQL	(READS)(NO)(MODIFIES) (CONTAINS) SQL (DATA)
	Security	SECURITY
	Parallel	(DIS)ALLOW PARALLEL
	Run-time Options	RUN OPTIONS
5. Option List (2/2)	(See “Create Function: Option List (2/2) panel” on page 455.)	
	Main Program	PROGRAM TYPE
	Stay Resident	STAY RESIDENT
	Deterministic	(NOT) DETERMINISTIC
	Called on null input	(RETURNS NULL)(CALLED) ON NULL INPUT
	No external action	(NO) EXTERNAL ACTION
	Final Call	(NO) FINAL CALL
	DBINFO argument passed	(NO) DBINFO

Table 17. Create Procedure

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Procedure panel” on page 476.)	
	Schema	<i>procedure-name</i>
	Name	<i>procedure-name</i>
	Result Sets	DYNAMIC RESULT SET(S)
1. Parameters	(See “Create Procedure: Parameters panel” on page 483.)	
	Parameter Name	<i>parameter-name</i>
	Data Type	<i>built-in-data-type</i>
	Len	<i>built-in-data-type</i>
	Pr	<i>built-in-data-type</i>



## Creating and dropping DB2 objects

Table 17. Create Procedure (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	Sc	<i>built-in-data-type</i>
	For Data	<b>FOR ... DATA</b>
	User Defined Data Type	<i>distinct-type-name</i>
2. Parameter Types	(See “Create Procedure: Parameter Types panel” on page 481.)	
	As LOC	<b>AS LOCATOR</b>
	Owner	<b>TABLE LIKE</b>
	Name	<b>TABLE LIKE</b>
	IN OUT INOUT	<b>(IN)(OUT)(INOUT)</b>
4. Option List (1/2)	(See “Create Procedure: Option List (1/2) panel” on page 478.)	
	External Name	<b>EXTERNAL NAME</b>
	Package Collection	<b>(NO) COLLID</b>
	Workload Manager Environment	<b>(NO) WLM ENVIRONMENT</b>
	Time Limit	<b>ASUTIME (NO) LIMIT</b>
	Language	<b>LANGUAGE</b>
	SQL	<b>(READS)(NO)(MODIFIES) (CONTAINS) SQL (DATA)</b>
	Security	<b>SECURITY</b>
	Parameter Style	<b>PARAMETER STYLE</b>
	Run-time Options	<b>RUN OPTIONS</b>
5. Option List (2/2)	(See “Create Procedure: Option List (2/2) panel” on page 480.)	
	Main Program	<b>PROGRAM TYPE</b>
	Stay Resident	<b>STAY RESIDENT</b>
	Deterministic	<b>(NOT) DETERMINISTIC</b>
	DBINFO argument passed	<b>(NO) DBINFO</b>
	Commit on return	<b>COMMIT ON RETURN</b>

Table 18. Create Trigger

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Trigger panel” on page 524.)	
	Schema	<i>trigger-name</i>
	Name	<i>trigger-name</i>
1. Type	(See “Create Trigger: Details panel” on page 526.)	
	(Order) No cascade before	<b>NO CASCADE BEFORE</b>
	(Order) After	<b>AFTER</b>
	(Type) Insert	<b>INSERT</b>
	(Type) Delete	<b>DELETE</b>
	(Type) Update	<b>UPDATE</b>
	Columns	<b>UPDATE OF</b>
	(Trigger Table) Name	<b>ON</b>
	(Trigger Table) Owner	<b>ON</b>

Table 18. Create Trigger (continued)

Main/subsidiary panel	Field	SQL Keyword(s)
	Old correlation name	<b>OLD</b>
	New correlation name	<b>NEW</b>
	Old table identifier	<b>OLD TABLE</b>
	New table identifier	<b>NEW TABLE</b>
	(Executed) For each modified row	<b>FOR EACH ROW</b>
	(Executed) Once	<b>FOR EACH STATEMENT</b>
2. Search Condition	(See “Create Trigger: Search Condition panel” on page 528.)	
	Search Condition	<b>WHEN</b>
3. SQL Statement	(See “Create Trigger: SQL statement panel” on page 529.)	
	Triggered SQL Statement(s)	<b>BEGIN ATOMIC</b>

Table 19. Create Auxiliary Table

Main/subsidiary panel	Field	SQL Keyword(s)
Main	(See “Create Auxiliary Table panel” on page 447.)	
	(Auxiliary Table) Owner	<i>aux-table-name</i>
	(Auxiliary Table) Name	<i>aux-table-name</i>
	(Table Space) Name	<b>IN</b>
	Database	<b>IN</b>
	(Base Table) Owner	<b>STORES</b>
	(Base Table) Name	<b>STORES</b>
	(Base Table Column) Name	<b>COLUMN</b>
	Partition	<b>PART</b>

## Creating a database

To create a new database, perform the following on the DB2 Object Functions panel:

1. Type 1 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Database panel.

The Create Database panel defines a DB2 database at the current server.

The only required field on the panel is the first, where you enter the name for the new database. All of the other fields on the panel are optional, although values are often specified for the second group of input fields.

The database options and member selection sections of the panel contain input fields that you can use to define a work file or temporary database.

The default data encoding scheme for z/OS systems is EBCDIC. You can specify ASCII encoding if required.

For workfile databases, you can also specify a member name (for use in a data sharing environment only).

## Creating and dropping DB2 objects

### RELATED REFERENCES

- "DB2 Object Functions panel" on page 550
- "Create Database panel" on page 449

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## Creating a table space

To create a new table space, perform the following on the DB2 Object Functions panel:

1. Type 2 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Table Space panel.

Use the Create Table Space panel to define a simple, segmented or partitioned table space at the current server.

### RELATED TASKS

- "Table Space Type (Create Table Space)"
- "Table Space Allocation (Create Table Space)"
- "Data Storage (Create Table Space)" on page 177
- "Locking (Create Table Space)" on page 177
- "Data Sharing (Create Table Space)" on page 177
- "Partitions (Create Table Space)" on page 177

### RELATED REFERENCES

- "DB2 Object Functions panel" on page 550
- "Create Table Space panel" on page 489
- "Create Table Space: Type panel" on page 499
- "Create Table Space: Allocation panel" on page 491
- "Create Table Space: Data Storage Options panel" on page 494
- "Create Table Space: Locking Options panel" on page 498
- "Create Table Space: Data Sharing Options panel" on page 492
- "Create Table Space: Define Partitions panel" on page 496

## Table Space Type (Create Table Space)

In DB2, table space is either non-partitioned, or partitioned. A non-partitioned table space can be segmented (a partitioned table space cannot). Non-partitioned means that there is a 1:1 relationship between the table space and the data set defined to store the data. Partition means that many data sets are used to store the data.

To make more effective use of non-partitioned table spaces, by improving the support for multiple table definitions within the one table space, use segmented table spaces.

The maximum partition size for a partitioned table space determines the amount of data that can be stored within the table space. Large values imply the creation of multi-volume table spaces capable of storing GB of data.

### RELATED REFERENCES

- "Create Table Space: Type panel" on page 499

## Table Space Allocation (Create Table Space)

The Create Table Space: Allocation panel is optional, although most users need to specify a DB2 storage group and the size of the table space.

You have the option of defining DB2 data sets externally, or DB2 can create the data sets on behalf of you. The former option is selected by specifying a VCAT name in the data set parameters section of the panel. The most common option is to specify a (DB2) storage group name. These parameters are mutually exclusive.

### RELATED REFERENCES

“Create Table Space: Allocation panel” on page 491

## Data Storage (Create Table Space)

Use the Create Table Space: Data Sharing Options panel to specify options that control various aspects of data management for the function.

### RELATED REFERENCES

“Create Table Space: Data Sharing Options panel” on page 492

## Locking (Create Table Space)

The locksize parameter specifies the size of locks within the table space.

You can select from six different locking parameters. Page and Row cannot be specified for LOB table spaces. Table can only be specified for a segmented table space.

You can also specify a maximum value for the number of locks that application programs can hold on a table space before lock escalation occurs.

### RELATED REFERENCES

“Create Table Space: Locking Options panel” on page 498

## Data Sharing (Create Table Space)

The Create Table Space: Data Sharing Options panel is optional and contains options that control how the table space behaves in a data sharing environment. In most cases, the default values are appropriate.

### RELATED REFERENCES

“Create Table Space: Data Sharing Options panel” on page 492

## Partitions (Create Table Space)

The Create Table Space: Define Partitions panel is optional, even for the definition of a partitioned table space. However, you might want to specify parameters for each partition of a partitioned table space, rather than relying on the values set at the table space level.

For a partitioned table space, there is an optional 'USING CLAUSE' for every partition of the table space. You can define the number of partitions on the Table Space Type panel before selecting this panel. The table at the bottom of the panel is pre-formatted with the required number of rows (one for each partition).

Alternatively, you can select the Define Partitions panels directly. The number of pre-formatted rows reflect the value specified for a number of partitions (the default value is 1). You can then adjust the values for this single partition to what is required. After this is done, you can use the R prefix command (optionally followed by an integer) to expand the number of partitions to the required number. The value specified for number of partitions on the Table space Type panel is updated accordingly.

## Creating and dropping DB2 objects

**Note:** The individual partitions of a partitioned table space are typically defined with similar parameters. It is easier for you to define the values once, then repeat them, rather than type the same information in for each row repeatedly.

The DB2 default values for Free Pages, Percent Free, Data Compression and GBPCACHE are used.

### RELATED REFERENCES

“Create Table Space: Define Partitions panel” on page 496

“Create Table Space: Type panel” on page 499

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## Creating a table

To create a new table, perform the following on the DB2 Object Functions panel:

1. Type 3 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Table panel.

Use the Create Table utility to create a new DB2 table. If a table already exists that is similar to the one you want to create, you can use that table as a model for the new table.

### RELATED TASKS

“1. Columns (Create Table)” on page 182

“2. Nulls and default values (Create Table)” on page 182

“3. Options (Create Table)” on page 182

“4. Unique constraints (Create Table)” on page 182

“5. Referential constraints (Create Table)” on page 183

“6. Check constraints (Create Table)” on page 184

“7. Procedure exits (Create Table)” on page 185

“8. Generate values (Create Table)” on page 185

### RELATED REFERENCES

“DB2 Object Functions panel” on page 550

“Create Table panel” on page 486

“Create Table: Columns panel” on page 505

“Create Table: Nulls and Default Values panel” on page 511

“Create Table: Options panel” on page 514

“Create Table: Unique Constraints panel” on page 523

“Create Table: Column Referential Constraints panel” on page 503

“Create Table: Column Check Constraints panel” on page 501

“Create Table: Procedure Exits panel” on page 516

“Create Table: Generate Values panel” on page 507

## Creating a table using a model

The Create Table utility lets you use an existing table or view as a model for the new table you want to create. You can use this modeling facility to create a table in either of these ways:

- With columns that have exactly the same name and description as the model table or view: Usage option 1.

**Note:** If you use Usage option 1, none of the Table Creation options related to columns are available (DB2 copies the column information about the model table or view when it issues the CREATE TABLE statement).

However, you can still specify non-column details on the main panel and by selecting Table Creation option 3 (**Table options**).

- Based on the model table or view but where you want to change some of the column details : Usage option 2, Table Creation options 1–8.

To create a table with columns that have exactly the same name and description as the model table or view:

1. Specify the name of the table you want to create in **New Table**.
2. Specify the name of the model table or view in **Model Table/View**. You can optionally qualify the name of the model table or view by specifying an owner. If you do not specify a model table (or view) owner, FM/DB2 uses your current SQL ID.
3. Select Usage option 1 (**Generate LIKE clause**).
4. Select the Table Creation option **Create the table**.
5. Press Enter.

FM/DB2 generates the following SQL statement:

```
CREATE TABLE new_table_name LIKE model_table_name
```

before sending it to DB2 for execution. FM/DB2 issues a message to confirm that the generated SQL statement has been run. For further details about the LIKE clause in the CREATE TABLE statement, see the *DB2 UDB for z/OS SQL Reference*.

**Note:** To view the generated SQL statement, either before or after it is issued, enter SQL on the command line.

To create a table based on the model table or view, but where you want to change some of the column details:

1. Specify the name of the DB2 table you want to create in **New Table**.
2. Specify the name of the model DB2 table or view in **Model Table/View**. You can optionally qualify the name of the model table or view by specifying an owner. If you do not specify a model table (or view) owner, FM/DB2 uses your current SQL ID.
3. Select Usage option 2 (**Load table information**).
4. Press Enter.

FM/DB2 displays the Create Table Model Load panel.

**Note:** The Create Table Model Load panel is displayed if you:

- Initially specify, or subsequently change, the **Model Table/View** details,
- Select Usage option 2 (**Load table information**), and
- Press Enter.

Use the Create Table Model Load panel to selectively load information describing the model table or view from the DB2 catalog into the ISPF variables and tables used to generate the CREATE TABLE statement. You can also use this panel to specify whether you want this information to replace the current information, or to be added to it.

5. Select the **Model Load Options** you want by typing a slash (/) next to the required option. (FM/DB2 selects the first three options for you.) To deselect a model load option, type a blank in place of the slash.

## Creating and dropping DB2 objects

**Note:** If no data exists in the model table or view for any of the model load options you select, FM/DB2 issues the message “Some data not loaded” when it redisplay the main panel.

When you return to the main Create Table panel, you can change or add to this information by selecting the appropriate table creation option 1–8. For details, see “Table Creation options” on page 181.

**Note:** If you use a view as the model, FM/DB2 loads only the database name, table space name, encoding scheme, and column information.

6. To specify whether you want FM/DB2 to use the information about the model table or view as a refresh, or if you want FM/DB2 to add it to the current information for the table you are creating, select the appropriate **Refresh/Add** option.
7. If the model table has referential constraints, specify whether you want single-column referential constraints loaded as *column* referential constraints or *table* referential constraints by selecting one of the following options:
  - 1. Column referential constraints
  - 2. Table referential constraints

**Notes:**

- a. FM/DB2 does not check for duplicate column names if multiple model tables (or views) are loaded or model table (or view) columns are added to manually-defined columns.
  - b. If you select any of the key or constraint options (**Primary key information**, **Unique key information**, **Referential constraints** or **Check constraints**), the **Column information** option is selected automatically.
  - c. FM/DB2 loads all check constraint information in the form of *table* check constraints.
8. Press Enter.  
FM/DB2 loads information into the ISPF variables and tables used to generate the CREATE TABLE statement according to the **Model Load Options** and **Refresh/Add** options you have selected and returns you to the main Create Table panel.

**Note:** To view the generated SQL statement, type SQL on the command line of the main Create Table panel.

9. To specify further information for the table you want to create, select any of the table creation options 1–8 and press Enter.

FM/DB2 validates your input and displays a panel that you use to enter information for the table creation option you have selected. For details about each table creation option, see “Table Creation options” on page 181.

10. Select the Table Creation option **Create the table** on the main panel.
11. Press Enter.

FM/DB2 generates the following SQL statement:

```
CREATE TABLE new_table_name other_details
```

where *other\_details* represents SQL clauses based on the details you have selected using the model table or view and Table Creation options. FM/DB2 sends the generated SQL statement to DB2 and issues a message to confirm that it has been successfully run.

**Note:** To view the generated SQL statement, either before or after it is issued, enter SQL on the command line.



### RELATED REFERENCES

“Create Table: Model Load panel” on page 509

“Create Table panel” on page 486

## Creating a table without using a model

To create a new table without using a model (for instance, if no table already exists that is similar to the one you want to create):

1. Specify the name of the DB2 table you want to create in **New Table**.
2. Leave the owner and name of the model DB2 table in **Model Table** blank.
3. Select any of the Table Creation options 1–8 and press Enter. The default setting is Option 1 (**Columns**).

**Note:** Before you can specify any of the table creation options 2, 4, 5, 6, 7, or 8, you must create at least some of the columns for the new table (using option 1).

FM/DB2 validates your input and displays a panel that you use to enter information for the table creation option you have selected.

For information about each table creation option, see “Table Creation options.”

4. Select the Table Creation option **Create the table**
5. Press Enter.

FM/DB2 generates the following SQL statement:

```
CREATE TABLE new_table_name other_details
```

where *other\_details* represents SQL clauses based on the details you have selected using the Table Creation options. FM/DB2 sends the generated SQL statement to DB2 and issues a message to confirm that it has been successfully run.

**Note:** To view the generated SQL statement, either before or after it is issued, enter SQL on the command line.

## Table Creation options

Use the table creation options on the main Create Table panel to provide additional information to define the table you are creating.

If you are using a model table with Usage option 2, you can select any of the options 1–8 before using the Table Creation option **Create the table** to create the table. If you have already used the Model Load panel to provide information for the table you want to create, use the table creation options to supplement or change details you have already selected.

If you are *not* using a model table, you must select option 1 (**Columns**) and then optionally options 2–8, before using the Table Creation option **Create the table** to create the table.

You can revisit each of the table creation options as many times as you want to add or modify the data.

If you select one of the table creation options 1 to 8, FM/DB2 displays a panel that you use to enter information for the creation option you have selected. If you select the Table Creation option **Create the table**, FM/DB2 generates and issues a CREATE TABLE SQL statement.



## Creating and dropping DB2 objects

The following pages describe the panels for each creation option.

### RELATED REFERENCES

“Create Table panel” on page 486

“Create Table: Model Load panel” on page 509

## 1. Columns (Create Table)

The Create Table Columns panel is displayed if you select Table Creation option 1 (**Columns**) on the main Create Table panel. You use this panel to define columns for the table you are creating, or to change information for columns you have already defined.

The lower section of the panel shows the columns defined for the table. (If you have not yet defined any columns, this part of the panel shows a single line of empty entry fields.) If you have used the modeling facility, the panel shows the column details for each column in the model table.

### RELATED REFERENCES

“Create Table: Columns panel” on page 505

“Create Table panel” on page 486

## 2. Nulls and default values (Create Table)

The Nulls and Default Values panel is displayed if you select Table Creation option 2 (**Nulls/default values**) on the main Create Table panel.

The Nulls and Default Values panel shows the columns defined for the table. If you have used the modeling facility, the panel shows the column details for each column in the model table. You use this panel to specify information to define the null attributes and default values for the columns of the table you are creating.

### RELATED REFERENCES

“Create Table: Nulls and Default Values panel” on page 511

“Create Table panel” on page 486

## 3. Options (Create Table)

The Options panel is displayed if you select Table Creation option 3 (**Table options**) on the main Create Table panel.

You use the Options panel to specify information to define options for the table you are creating.

### RELATED REFERENCES

“Create Table: Options panel” on page 514

“Create Table panel” on page 486

## 4. Unique constraints (Create Table)

The Unique Constraints panel is displayed if you select Table Creation option 4 (**Unique Constraints**) on the main Create Table panel.

You use the Unique Constraints panel to specify information to define a primary key and up to three additional unique keys for the table you are creating. The panel shows only those columns that are defined as NOT NULL (and therefore eligible to be selected as part of either the primary key or a unique key).

To define the primary key or any of the three unique keys, enter S or a number in one of the **Column Order in Key** fields to add a column to the key. If you enter S, FM/DB2 generates the next highest number for that key. To deselect a column that is already selected, clear the displayed number by overtyping it with spaces.

**Note:** The actual numbers are not important; FM/DB2 uses their relative order to define the column order for the key.

You can optionally specify constraint names for the primary key and the three unique keys.

### RELATED REFERENCES

“Create Table: Unique Constraints panel” on page 523

“Create Table panel” on page 486

## 5. Referential constraints (Create Table)

If you select Table Creation option 5 (**Referential Constraints**) on the main Create Table panel, FM/DB2 displays either the Column Referential Constraints panel or the Table Referential Constraints panel. To change from one panel to the other, press the F11 function key.

**Note:** The first time you select the **Referential Constraints** creation option, FM/DB2 displays the Column Referential Constraints panel. Thereafter, within the same invocation of the Create Table utility, each time you select the **Referential Constraints** creation option, FM/DB2 displays whichever panel (column or table) it last displayed.

### Column referential constraints and table referential constraints

You can specify referential constraints associated with individual columns (column referential constraints), or with the entire table (table referential constraints).

- A *column referential constraint* relates a column (the foreign key) in the table being created (the dependent table) to an equivalent column (the parent key) in another table (the parent table), and restricts non-null values of the foreign key column to the values of the parent key column.
- A *table referential constraint* relates a set of columns (the foreign key) in the table being created (the dependent table) to an equivalent set of columns (the parent key) in another table (the parent table), and restricts non-null values of the foreign key to the values of the parent key.

### Notes:

1. The parent key must be a primary or unique key on the parent table.
2. If you do not specify the parent key column name (or names), the foreign key is related to the primary key of the parent table.

To specify column referential constraints, use the Column Referential Constraints panel.

The Column Referential Constraints panel shows the columns defined for the table you are creating. If you have used the modeling facility, the panel shows the column details for each column in the model table. You use this panel to specify information to define column referential constraints for the table you are creating. To define a referential constraint, you must at least specify the parent table name. To indicate a column does not have a referential constraint, leave all the fields for that column blank.

## Creating and dropping DB2 objects

To specify table referential constraints, use the Table Referential Constraints panel. Each row of the panel defines a single table referential constraint.

You use the Table Referential Constraints panel to specify information to define table referential constraints for the table you are creating. To define a referential constraint, you must at least specify the parent table name.

The Create Table Referential Constraint panel is displayed if you enter S in the **Cmd** entry field.

The Create Table Referential Constraint panel shows the columns defined for the table you are creating (the dependent table). If you have used the modeling facility, the panel shows the column details for each column in the model table. You use this panel to select the dependent table columns (the foreign key) and specify the parent table columns (the parent key) to which they relate.

### RELATED REFERENCES

“Create Table panel” on page 486

“Create Table: Column Referential Constraints panel” on page 503

“Create Table: Table Referential Constraint panel” on page 519

## 6. Check constraints (Create Table)

If you select Table Creation option 6 (**Check Constraints**) on the main Create Table panel, FM/DB2 displays either the Column Check Constraints panel or the Table Check Constraints panel. To change from one panel to the other, press the F11 function key. You use these panels to specify information to define check constraints for the table you are creating.

**Note:** The first time you select the **Check Constraints** creation option, FM/DB2 displays the Column Check Constraints panel. Thereafter, within the same invocation of the Create Table utility, each time you select the **Check Constraints** creation option, FM/DB2 displays whichever panel (column or table) it last displayed.

### Column check constraints and table check constraints

You can specify check constraints associated with individual columns (column check constraints), or with the entire table (table check constraints). Both types of check constraint produce the same result when the statement is issued, and you can specify any valid check condition as either type. However, you might prefer to use table check constraints for check conditions that would violate the SQL standard (not enforced by DB2) that a column check constraint only refers to the column on which it is defined.

#### Notes:

1. If model table information is loaded into the Create Table utility, all check constraints defined on the table are loaded as table check constraints.

To specify column check constraints, use the Column Check Constraints panel.

The Column Check Constraints panel shows the columns defined for the table you are creating. If you have used the modeling facility, the panel shows the column details for each column in the model table.

To specify table check constraints, use the Table Check Constraints panel. Each row of the panel defines a single table check constraint.

You use the Table Check Constraints panel to specify an SQL check condition for each check constraint you want to define for the table you are creating.

### RELATED REFERENCES

“Create Table panel” on page 486

“Create Table: Column Check Constraints panel” on page 501

“Create Table: Table Check Constraints panel” on page 517

## 7. Procedure exits (Create Table)

The Procedure Exits panel is displayed if you select Table Creation option 7 (**Procedure exits**) on the main Create Table panel.

You use the Procedure Exits panel to specify information to define procedure exits for the table you are creating.

### RELATED REFERENCES

“Create Table: Procedure Exits panel” on page 516

“Create Table panel” on page 486

## 8. Generate values (Create Table)

The Generate Values panel is displayed if you select Table Creation option 8 (**Generate value**) on the main Create Table panel.

You use the Generate Values panel to specify information to define generated values for identity or ROWID columns in the table you are creating.

### RELATED REFERENCES

“Create Table: Generate Values panel” on page 507

“Create Table panel” on page 486

---

## Creating a view

To create a new view, perform the following on the DB2 Object Functions panel:

1. Type 4 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create View panel.

Use the Create View panel to create a new view at the current location.

### RELATED REFERENCES

“DB2 Object Functions panel” on page 550

“Create View panel” on page 530

---

## Creating an alias

To create a new alias, perform the following on the DB2 Object Functions panel:

1. Type 5 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Alias panel.

Use the Create Alias panel to create an alias for a table or a view at the correct location.

An alias is an alternative name for a table or view. The table or view need not exist when the alias is created. The table or view can exist at a different location to the

## Creating and dropping DB2 objects

local DB2 system.

### RELATED REFERENCES

- “DB2 Object Functions panel” on page 550
- “Create Alias panel” on page 445

---

## Creating an index

To create a new index, perform the following on the DB2 Object Functions panel:

1. Type 6 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Index panel.

Use the Create Index panel to create an index for a pre-existing base table.

The top section of the panel contains five input fields that define the index to be created. If you entered object name information on the DB2 object functions panel, these values are carried forward and the appropriate name fields are pre-filled.

The bottom part of the panel contains a list of options that need to be completed to define the index. There is a single selection field, in which you can type the number of the required option.

The first option is required (define the columns in the index). Typically, the third option is needed (define the space requirements for the index).

When the index has been completely specified, you select option 7 to create the index.

### RELATED TASKS

- “Index type (Create Index)”
- “Index Column Selection (Create Index)” on page 187
- “Allocation (Create Index)” on page 187
- “Index (Create Index)” on page 187
- “Index Partitions (Create Index)” on page 187
- “Partition Values Option (Create Index)” on page 187

### RELATED REFERENCES

- “DB2 Object Functions panel” on page 550
- “Create Index panel” on page 464
- “Create Index: Type panel” on page 474
- “Create Index: Column Selection panel” on page 467
- “Create Index: Allocation panel” on page 466
- “Create Index: Options panel” on page 469
- “Create Index: Partitions panel” on page 471
- “Create Index: Partition Values panel” on page 473

## Index type (Create Index)

You can use the first group of input fields to enter uniqueness information, and the type of index.

### RELATED REFERENCES

- “Create Index: Type panel” on page 474

## Index Column Selection (Create Index)

Use this panel to select the columns that comprise the index.

### Note:

Each time a column is selected using *S*, it is assigned an order one greater than the maximum order used so far.

If the column currently containing the highest order number is deselected, the maximum order is decremented (otherwise unchanged).

Because of the previous point and the ability of the user to enter an arbitrary number, gaps can occur in the order. However, any such gaps are ignored when the SQL is built.

### RELATED REFERENCES

“Create Index: Column Selection panel” on page 467

## Allocation (Create Index)

Use this panel to specify the space requirements for the index being created.

### RELATED REFERENCES

“Create Index: Allocation panel” on page 466

## Index (Create Index)

Use this panel to specify various YES/NO and data sharing options. In most cases, the default values are appropriate.

### RELATED REFERENCES

“Create Index: Options panel” on page 469

## Index Partitions (Create Index)

Use this panel to specify space information for index partitions.

### RELATED REFERENCES

“Create Index: Partitions panel” on page 471

## Partition Values Option (Create Index)

Use this panel to specify limit values for index entries in each partition.

### RELATED REFERENCES

“Create Index: Partition Values panel” on page 473

---

## Creating a synonym

To create a new synonym, perform the following on the DB2 Object Functions panel:

1. Type 7 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Synonym panel.

A synonym is an alternative name for a table or view. It is used as an unqualified identifier and is specific to the SQLID that owns the synonym.

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For more details, see the *DB2 UDB for z/OS SQL Reference*.

### RELATED REFERENCES

- “DB2 Object Functions panel” on page 550
- “Create Synonym panel” on page 485

---

## Creating a distinct type

To create a new distinct type, perform the following on the DB2 Object Functions panel:

1. Type 8 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Distinct Type panel.

### RELATED REFERENCES

- “DB2 Object Functions panel” on page 550
- “Create Distinct Type panel” on page 451

---

## Creating a function

To create a new function, perform the following on the DB2 Object Functions panel:

1. Type 9 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Function panel.

Use this panel to create an external scalar function.

### RELATED TASKS

- “Parameters (Create Function)”
- “Parameter Types (Create Function)”
- “Returned Data Type (Create Function)” on page 189
- “Option List 1/2 (Create Function)” on page 189
- “Option List 2/2 (Create Function)” on page 189

### RELATED REFERENCES

- “DB2 Object Functions panel” on page 550
- “Create Function panel” on page 457
- “Create Function: Parameters panel” on page 460
- “Create Function: Parameter Types panel” on page 459
- “Create Function: Returned Data Type panel” on page 462
- “Create Function: Option List (1/2) panel” on page 453
- “Create Function: Option List (2/2) panel” on page 455

## Parameters (Create Function)

Use this panel to define and optionally name the parameters for the function.

### RELATED REFERENCES

- “Create Function: Parameters panel” on page 460

## Parameter Types (Create Function)

Use this panel to specify additional type information for function parameters.

RELATED REFERENCES

“Create Function: Parameter Types panel” on page 459

## Returned Data Type (Create Function)

Use this panel to specify the data type returned by the function.

RELATED REFERENCES

“Create Function: Returned Data Type panel” on page 462

## Option List 1/2 (Create Function)

Use this panel to specify various options to further define the function.

RELATED REFERENCES

“Create Function: Option List (1/2) panel” on page 453

## Option List 2/2 (Create Function)

This panel lets you specify additional options.

RELATED REFERENCES

“Create Function: Option List (2/2) panel” on page 455

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## Creating a procedure

To create a new procedure, perform the following on the DB2 Object Functions panel:

1. Type 10 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Procedure panel.

RELATED TASKS

“Procedure Parameters (Create Procedure)”

“Parameter Types (Create Procedure)”

“Option List 1/2 (Create Procedure)” on page 190

“Option List 2/2 (Create Procedure)” on page 190

RELATED REFERENCES

“DB2 Object Functions panel” on page 550

“Create Procedure panel” on page 476

“Create Procedure: Parameters panel” on page 483

“Create Procedure: Parameter Types panel” on page 481

“Create Procedure: Option List (1/2) panel” on page 478

“Create Procedure: Option List (2/2) panel” on page 480

## Procedure Parameters (Create Procedure)

This panel is equivalent to the Create Function: Parameters panel.

RELATED REFERENCES

“Create Procedure: Parameters panel” on page 483

“Create Function: Parameters panel” on page 460

## Parameter Types (Create Procedure)

This panel is equivalent to the Create Function: Parameter Types panel.



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### RELATED REFERENCES

- "Create Procedure: Parameter Types panel" on page 481
- "Create Function: Parameter Types panel" on page 459

## Option List 1/2 (Create Procedure)

This panel lets you specify various options to further define the procedure.

### RELATED REFERENCES

- "Create Procedure: Option List (1/2) panel" on page 478

## Option List 2/2 (Create Procedure)

This panel lets you specify additional options.

### RELATED REFERENCES

- "Create Procedure: Option List (2/2) panel" on page 480

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## Creating a trigger

To create a new trigger, perform the following on the DB2 Object Functions panel:

1. Type 11 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Trigger panel.

### RELATED TASKS

- "Details (Create Trigger)"
- "Search Conditions (Create Trigger)"
- "SQL Statement (Create Trigger)"

### RELATED REFERENCES

- "DB2 Object Functions panel" on page 550
- "Create Trigger panel" on page 524
- "Create Trigger: Details panel" on page 526
- "Create Trigger: Search Condition panel" on page 528
- "Create Trigger: SQL statement panel" on page 529

## Details (Create Trigger)

This panel lets you specify additional details required for the definition of a trigger.

### RELATED REFERENCES

- "Create Trigger: Details panel" on page 526

## Search Conditions (Create Trigger)

Use this panel to specify a search condition. The triggered SQL statements are run only if the search condition evaluates to true or is omitted.

### RELATED REFERENCES

- "Create Trigger: Search Condition panel" on page 528

## SQL Statement (Create Trigger)

Use this panel to specify the SQL to be run if the trigger is activated.

RELATED REFERENCES

“Create Trigger: SQL statement panel” on page 529

---

## Creating an auxiliary table

To create a new auxiliary table, perform the following on the DB2 Object Functions panel:

1. Type 12 in the **Object Type** entry field.
2. Type C on the command line.
3. Press Enter. FM/DB2 displays the Create Auxiliary Table panel.

Auxiliary tables are required for LOB support. An auxiliary table is needed if a table contains a LOB column. If such a column is defined, an auxiliary table needs to be defined to store the data for that column. If the table is also partitioned, there needs to be an auxiliary table for each partition.

RELATED REFERENCES

“DB2 Object Functions panel” on page 550

“Create Auxiliary Table panel” on page 447

---

## Dropping DB2 objects

The available drop functions are shown in Table 7 on page 165.

To drop a DB2 object, perform the following using the DB2 Object Functions panel:

1. Specify the relevant number (1–11) for the DB2 object type you want to drop in the **Object Type** entry field.
2. If you want FM/DB2 to display a Drop Confirmation panel before it actually drops the object you have specified, check the **Confirm object drop** option.
3. Type D on the command line.
4. Press Enter. FM/DB2 displays the relevant Drop panel.
5. Specify the name of the DB2 object you want to drop and press Enter.

If you have selected the **Confirm object drop** option, FM/DB2 displays a Drop Confirmation panel. To proceed with the drop, press Enter. To cancel the drop, press the Cancel function key (F12) or the Exit function key (F3).

If you have not selected the **Confirm object drop** option, FM/DB2 drops the specified object.

If the drop operation fails, FM/DB2 displays an error message; press the Help function key (F1) for further information.

RELATED REFERENCES

“DB2 Object Functions panel” on page 550

“Drop panels” on page 566

“Drop Confirmation panel” on page 567

## Creating and dropping DB2 objects

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## Chapter 6. Populating a DB2 table with data

You can populate a table with data by using the FM/DB2 Create utility (3.8). You can specify the number of rows that are to be created and how each row is to be initialized. By editing a template, you can use fill characters and patterns to initialize the data and change the data create attributes for individual columns.

When fill characters and/or patterns are used to initialize a column, the resultant data must conform to any data type restrictions imposed by DB2 for that column.

During the data creation process, FM/DB2 attempts to insert each row formatted by the data create utility into the target DB2 object. The insert operation may be rejected by DB2 if uniqueness, referential integrity, or other constraints would be violated.

The data create operation can be performed in background (batch execution) or in the foreground.

The main panel for the FM/DB2 Create utility is the Data Create Utility panel.

To display the Data Create Utility panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 8 (Create)

Now that you have the Data Create Utility panel displayed, you can specify the name of the table you want to populate with data, the number of rows that are to be created, and how each row is to be initialized:

1. Identify the DB2 table you want to populate with data using the **Specify the DB2 Object** entry fields.
2. Use the **Create Count** entry field to specify the number of rows you want to create.
3. If you are using a specific template to specify the data initialization details, (see option 1 in **Template usage**), specify the name of the template data set.
4. Use the **Processing Options** to specify which template you want to use for the create process, and whether you want to edit the template before the create process.
5. Press Enter. If you selected **Edit template**, the Column Selection/Edit panel is displayed. Otherwise, FM/DB2 creates the data in the specified DB2 table.

### RELATED TASKS

- “Specifying a DB2 object name” on page 29
- “Specifying a data set and a member name” on page 34
- “Editing the template” on page 194

### RELATED REFERENCES

- “Primary Option Menu panel” on page 670
- “Utility Functions panel” on page 797
- “Data Create Utility panel” on page 533

---

## Editing the template

If you selected the **Edit template** option on the Create panel, FM/DB2 displays the Column Selection/Edit panel when you press Enter.

To populate the columns for the DB2 table you have specified by editing the template:

1. Enter E against the first column in the Column Selection/Edit panel. FM/DB2 displays one of five Column Attributes panels depending on the data type of the column:
  - Alphanumeric (for CHAR, VARCHAR, GRAPHIC, and VARGRAPHIC data types)
  - Numeric (for DECIMAL or NUMERIC, SMALLINT, INTEGER, REAL, and DOUBLE data types)
  - DATE
  - TIME
  - TIMESTAMP
2. Use the Column Attributes panel to specify the *create attributes* for the column. The create attributes determine the value that FM/DB2 puts in the column when it creates data.

For details about how to enter the create attributes, refer to the description for the relevant Column Attributes panel.
3. Press the Exit function key (F3) to return to the Column Selection/Edit panel.
4. Repeat from Step 1 for each of the remaining columns you want to populate.

### RELATED REFERENCES

- Chapter 14, "DB2 data types," on page 367
- "Column Selection/Edit panel" on page 419
- "Column Attributes panel (alphanumeric)" on page 407
- "Column Attributes panel (numeric)" on page 412
- "Column Attributes panel (DATE)" on page 410
- "Column Attributes panel (TIME)" on page 415
- "Column Attributes panel (TIMESTAMP)" on page 417

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## Chapter 7. Copying data

FM/DB2 provides the following utilities that allow you to copy data from one place to another:

### Copy Utility (3.3)

Copies data from one DB2 object to another DB2 object (that is accessible from within the same DB2 subsystem).

### Import Utility (3.6)

Copies data from a VSAM or QSAM file into a DB2 table or view.

### Export Utility (3.7)

Copies data from a DB2 table or view to a VSAM or QSAM file.

#### RELATED TASKS

“Copying data from one DB2 object to another”

“Copying data from a VSAM or QSAM file” on page 200

“Copying data to a VSAM or QSAM file” on page 223

“How do I...?” on page 235

---

## Copying data from one DB2 object to another

To copy data between DB2 tables, use the Copy utility function (3.3).

#### Notes:

1. To copy data *to* a DB2 table or view from a QSAM or VSAM data set, use the Import utility function (3.6).
2. To copy data *from* a DB2 table or view to a QSAM or VSAM data set, use the Export utility function (3.7).

When you copy data from one DB2 object to another, you can:

- Select which rows to copy
- Reformat data during the copy by mapping columns in the input table to different columns in the output table
- Initialize new columns using user-specified values or patterns
- Limit the number of rows copied

The main panel for the Copy utility is the Copy Utility ("From") panel.

To display the Copy Utility ("From") panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 3 (Copy)

You can now specify details about:

- The source table (where the data is that you want to copy). During this step, you can also edit the source template to restrict the data that is copied (if applicable).
- The target table (where you want the data copied). During this step, you can also change the copy options, edit the template mapping for the target table, and specify if you want the copy performed in a batch job.

## Copying data from one DB2 object to another

### RELATED TASKS

- "Copying data from a VSAM or QSAM file" on page 200
- "Copying data to a VSAM or QSAM file" on page 223
- "Specifying details for the "From" table"
- "Specifying details for the "To" table" on page 198

### RELATED REFERENCES

- "Primary Option Menu panel" on page 670
- "Utility Functions panel" on page 797
- "Copy Utility ("From") panel" on page 430

## Specifying details for the "From" table

Specify the name of the source ("From") table on the Copy Utility "From" panel. If the table you specify does not exist, FM/DB2 issues an error message and stops the utility.

If you do not want to copy all of the rows in the "From" table, specify the number of rows you want to copy (1–99999999) in **Copy Count**.

If you are using a specific template for the "From" table (see options 1 and 4 in **Template usage**), specify the name of the template data set and, optionally, the member name, in the **From Template** entry fields.

The **Processing Options** specify which template you want to use for the "From" table, and whether you want to edit the template before the copy process.

### Template usage

The Copy Utility panel provides four options for template usage:

#### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **From Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table. (For a detailed explanation, see Template Usage option 3).

#### 2. Previous

Uses the last (previously used) template for this table.

#### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template From** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

#### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **From Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a "/" or an "A":

### Edit template

Use to edit the template for the “From” table before proceeding to the Copy Utility “To” panel.

### Copy “From” values to “To” panel

Use to copy the values (DB2 object **Location**, **Owner**, **Name**, and template **Data set name**, **Member**) entered on the “From” panel to the corresponding fields on the “To” panel.

To proceed, press Enter.

If you selected **Edit template** (either by using a “/”, or by having previously used the “A” selection character for this option), the Column Selection/Edit panel is displayed. Otherwise, the Copy Utility “To” panel is displayed.

#### RELATED TASKS

- “Specifying a DB2 object name” on page 29
- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55
- “Editing the template for the “From” table”
- “Specifying details for the “To” table” on page 198

#### RELATED REFERENCES

- “Copy Utility (“From”) panel” on page 430
- “Column Selection/Edit panel” on page 419
- “Copy Utility (“To”) panel” on page 438

### Editing the template for the “From” table

If you select the **Edit template** option on the Copy Utility “From” panel, FM/DB2 displays the Column Selection/Edit panel (Figure 49 on page 198). You can use this panel to restrict the data in the “From” table that you want copied by:

- Selecting (or deselecting) specific columns for copying.
- Specifying *row selection criteria*. Only rows whose contents satisfy the criteria are selected for copying.

For example, the template shown in Figure 49 on page 198 has been edited to select certain columns and only rows whose contents meet certain criteria. If you use this template as the “From” template for your Copy, the data copied is restricted to columns where WORKDEPT contains “MNT” and JOB contains “PAINTER”.



## Copying data from one DB2 object to another

Process		Options		Utilities		Help			
FM/DB2 (DFA2)				Column Selection/Edit		Line 1 of 16			
TABLE FMUSER.EMP									
----- Row Selection Criteria ----- (Use SQL/PF4 for full screen edit) -----									
1 Sel: WHERE WORKDEPT = 'MNT' AND JOB = 'PAINTER' +									
Cmd	Seq	SHE	CL#	Column name	Data type(length)	Null	Default	Order	A/D
				**** Top of data ****					
---	---	S	1	EMPNO	CHARACTER(6)		None	---	-
---	---	S	2	FIRSTNME	VARCHAR(12)		None	---	-
---	---	S	3	MIDINIT	CHARACTER(1)		None	---	-
---	---	S	4	LASTNAME	VARCHAR(15)		None	---	-
---	---	S	5	WORKDEPT	CHARACTER(3)	Y	Null	---	-
---	---	S	6	PHONENO	CHARACTER(4)	Y	Null	---	-
---	---	S	7	HIREDATE	DATE	Y	Null	---	-
---	---	S	8	JOB	CHARACTER(8)	Y	Null	---	-
---	---	S	9	EDLEVEL	SMALLINT	Y	Null	---	-
---	---	S	10	SEX	CHARACTER(1)	Y	Null	---	-
---	---	S	11	BIRTHDATE	DATE	Y	Null	---	-
---	---	S	12	SALARY	DECIMAL(9,2)	Y	Null	---	-
Command ==>								Scroll	PAGE
F1=Help		F2=Split		F3=Exit		F4=SQL		F5=RFind	
F7=Up		F8=Down		F9=Swap		F10=Left		F11=Right	
								F6=RunTemp	
								F12=Cancel	

Figure 49. Primary Column Selection/Edit panel

### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

### RELATED REFERENCES

“Copy Utility (“From”) panel” on page 430

“Column Selection/Edit panel” on page 419

“Copy Utility (“To”) panel” on page 438

## Specifying details for the “To” table

Specify the name of the target (“To”) table on the Copy Utility “To” panel.

If you are using a specific template for the “To” table, specify the name of the template data set and, optionally, the member name, in the **To Template** entry fields.

The **Processing Options** specify which template you want to use for the “To” table, and whether you want to edit the template before the copy process.

### Template usage

The Copy Utility panel provides four options for template usage:

#### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **To Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table. (For a detailed explanation, see Template Usage option 3).

#### 2. Previous

Uses the last (previously used) template for this table.

#### 3. Generate from table

Generates a template based on the information in the DB2 catalog

## Copying data from one DB2 object to another

for the specified table. This is the default setting. If you have specified a member name in the **To Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **To Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a "/" or an "A":

#### Edit copy options

Use to edit the Copy options before copying the data.

#### Edit template mapping

Use to edit the template mapping for the "To" table before copying the data.

#### Batch execution

Builds the necessary JCL to perform the Copy utility in a batch job.

To proceed, press Enter.

If you selected **Edit Copy options** (either by using a "/", or by having previously used the "A" selection character for this option), the Copy Options panel is displayed for editing.

If you selected **Edit template mapping** (either by using a "/", or by having previously used the "A" selection character for this option), the Template Mapping panel is displayed for editing.

If you selected **Batch execution** (either by using a "/", or by having previously used the "A" selection character for this option), the generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

Otherwise (if you selected none of the preceding options), FM/DB2 copies the data from the "From" table to the "To" table.

### Setting options for the current Copy session

If you select **Edit copy options** on the Copy "To" panel FM/DB2 displays the Copy Options panel.

You can use this panel to change the options for the current Copy session.

**Note:** Any options you set on this panel apply for the current Copy session only. When you exit from the Copy session, the copy options revert to the global copy options.

#### RELATED REFERENCES

"Copy Options panel" on page 427

### Running Copy in batch

If you want to copy large DB2 tables, you can perform the copy in a batch job.

If you select the **Batch execution** option on the Copy Utility "From" panel, the Copy utility builds the necessary JCL to perform the copy function in a batch job.

## Copying data from one DB2 object to another

The generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

### RELATED TASKS

- “Specifying a DB2 object name” on page 29
- “Selecting options on FM/DB2 panels” on page 28
- “Setting options for the current Copy session” on page 199
- “Mapping data” on page 86
- “Running Copy in batch” on page 199

### RELATED REFERENCES

- “Copy Utility (“To”) panel” on page 438
- “Copy Utility (“From”) panel” on page 430
- “Copy Options panel” on page 427
- “Copy utility options (option 3.3)” on page 49

---

## Copying data from a VSAM or QSAM file

To copy data to a DB2 table or view from a QSAM or VSAM data set, use the Import utility function (3.6).

### Notes:

1. To copy data between DB2 tables, use the Copy utility function (3.3).
2. To copy data *from* a DB2 table or view to a QSAM or VSAM data set, use the Export utility function (3.7).

The input to the Import utility function can be a QSAM or VSAM data set produced by:

- The FM/DB2 Export utility
- Any external source

You must specify a copybook or template that describes the record format of the data in the input QSAM or VSAM data set. If you specify a copybook, FM/DB2 compiles it to produce a template.

When you copy data to a DB2 table or view from a QSAM or VSAM data set, you can:

- Reformat data during import by mapping DB2 table columns to fields in the input QSAM or VSAM data set (as defined by a copybook or template).
- Use a REXX procedure to enhance the way in which data is selected and imported.
- Specify the number of rows to be imported, and the starting record in the import file.
- Specify whether you want to run the import in foreground or batch.
- Specify that any duplicate rows are to be updated with the values in the imported row.
- Specify how often FM/DB2 should commit changes to DB2 during the import process.

The main panel for the Import utility is the Import Utility (“From”) panel.

To display the Copy Utility (“From”) panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.

2. From the Utility Functions panel, enter 6 (Import)

You can now specify details about:

- The source QSAM or VSAM data set (where the data is that you want to copy). During this step, you can also edit the source template to restrict the data that is copied (if applicable).
- The target table (where you want the data copied). During this step, you can also:
  - Edit the template mapping for the target table
  - Specify if you want the copy performed in a batch job
  - Optionally specify the name of a REXX procedure to further enhance the way data is selected

### When (and when not) to use the Import utility

The Import utility provides one method for moving DB2 data between different DB2 subsystems (that is, export on one subsystem followed by import on another). If you want to move data between tables in the same DB2 sub-system, either the Copy utility or direct execution of SQL statements is typically more convenient.

In general terms, the Import utility is suitable for inserting small to medium volumes of data into DB2 tables. Import operations are achieved by inserting each selected record in the import data set into the target table, and any update operations are achieved by generating an update statement.

All insert and update operations are logged by DB2, which can have operational and performance implications. The Import utility is not intended as a substitute for the DB2 utilities if unloading or migrating large volumes of data, and the DB2 utilities offer superior performance in these situations. Whenever possible, run import operations in batch.

The import utility provides for automatic mapping of the DB2 null indicator, and, optionally, one of the following formats can be specified corresponding to the template used:

- FM/DB2 (SQLDA) format
- DB2 unload format
- DSNTIAUL format
- User defined format (excluding Placement, User defined)

However, the template editor does not show the null indicator as a separate item in the "From" template on the Field Mapping panel. It is therefore not possible to re-map the null indicator associated with nullable columns to a column in the target table.

#### RELATED TASKS

- “Compiler language selection (option 0.4)” on page 46
- “Specifying details for the “From” data set” on page 202
- “Specifying details for the “To” table” on page 203
- “Using a REXX procedure with the Import utility” on page 205

#### RELATED REFERENCES

- “Primary Option Menu panel” on page 670
- “Utility Functions panel” on page 797
- “Import Utility (“From”) panel” on page 639
- “Import Utility (“To”) panel” on page 641

### Specifying details for the “From” data set

Specify the name of the source (“From”) data set on the Import Utility “From” panel. Use a combination of the **Data set name**, **Member**, and **Volume** entry fields to specify the sequential data set, VSAM data set, or PDS member from which you want to import the data.

If you do not want to import all of the records from the input data set, specify the number of records you want to import (1–99999999) in **Import Count**.

If you are using a specific template for the “From” data set (see option 1 in **Template usage**), specify the name of the template data set and, optionally, the member name, in the **From Copybook or Template** entry fields.

The **Processing Options** on the Import Utility “From” panel specify template usage, and whether you want to edit the template before the import process.

#### Template usage

The Import Utility “From” panel provides two options for template processing:

##### 1. Above

Requires that you enter the name of a copybook or template in the **From Copybook or Template** section of the panel. After you have specified a name of a copybook or template, processing continues using this template in place of the previously used template (see Template usage option 2).

##### 2. Previous

Uses the last (previously used) template for this data set.

You can select the following option by entering a “/” or an “A”:

#### Edit template

Use to edit the template for the “From” data set before proceeding to the Import Utility “To” panel.

To proceed, press Enter.

If you selected **Edit template** (either by using a “/”, or by having previously used the “A” selection character for this option), the Field Selection/Edit panel is displayed.

Otherwise, the Import Utility “To” panel is displayed.

#### RELATED TASKS

- “Specifying a data set and a member name” on page 34
- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55
- “Editing the template for the “From” data set”
- “Specifying details for the “To” table” on page 203

#### RELATED REFERENCES

- “Import Utility (“From”) panel” on page 639
- “Import Utility (“To”) panel” on page 641

### Editing the template for the “From” data set

If you select the **Edit template** option on the Import Utility “From” panel, FM/DB2 displays the Field Selection/Edit panel (see Figure 50 on page 203).

You can narrow down which records you want to process by specifying *record selection criteria*. Only records whose contents satisfy the criteria are selected. You specify record selection criteria using REXX comparison expressions.

**Note:** Record selection criteria is applied on the input data *before* any field mapping or data conversion is performed, whereas the REXX import procedure applies *after* any field mapping or data conversion is performed.

For example, the template shown in Figure 50 has been edited to select only records that meet certain criteria. If you use this template as the “From” template for your Import utility, the data imported is restricted to records where SALARY contains a value greater than 50 000.

Process		Options		Help	
File Manager		Field Selection/Edit		Line 1 of 10	
----- Criteria - Enter 1 or 2 to specify expression by field -----					
1 Id :					
2 Sel: #6 > 50000					
Offset	5				
Cmd Seq	SHE	Ref	Field Name	Picture	Type Start Length
**** Top of data ****					
---	S	1	1 REC-TYPE01		AN 1 85
---	S	2	2 REC-TYPE	XX	AN 6 2
---	S	3	2 NAME	X(20)	AN 8 20
---	S	4	2 EMPLOYEE-NO	9(4)	BI 28 2
---	S	5	2 AGE	9(4)	BI 30 2
---	S	6	2 SALARY	9(7)	PD 32 4
---	S	7	2 MONTH OCCURS 12 TIMES	9(8)	BI 36 4
---	S	8	2 FILLER	XX	AN 84 2
**** End of data ****					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F5=RFind	Scroll HALF
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F6=RunTemp
					F12=Cancel

Figure 50. Import Utility: Field Selection/Edit panel for the “From” data set

If you press Enter, FM/DB2 saves the updated template and returns you to the Import Utility “From” panel.

**Note:** For more information about specifying record selection criteria, see the *File Manager User's Guide and Reference*.

### RELATED TASKS

“General information about REXX” on page 206

### RELATED REFERENCES

“Import Utility (“From”) panel” on page 639

“Field Selection/Edit panel” on page 615

## Specifying details for the “To” table

Specify the name of the table to which the input data is to be imported on the Import Utility “To” panel. If the table you specify does not exist, FM/DB2 issues an error message.

If you are using a specific template for the “To” table (see options 1 and 4 in **Template usage**), specify the name of the template in the **To Template** entry fields.

## Copying data from a VSAM or QSAM file

To delete all the rows in the target table before importing the data from the QSAM or VSAM data set, select the **Delete existing rows** option.

Set the **Duplicate row options** according to how you want FM/DB2 to handle any instances where the data to be imported is a “duplicate” of an existing row; that is, where the only changes to the data are in non-unique index columns:

- To ignore duplicate rows, select **1. Ignore**.  
Any duplicates that FM/DB2 detects are not updated and FM/DB2 ignores the value (if any) in the **For ... duplicates** field.
- To update duplicate rows, select **2. Update**.  
FM/DB2 updates any duplicate rows. If the number of duplicates exceeds the value specified in the **For ... duplicates** field, FM/DB2 terminates the import operation and all changes are rolled back.

To proceed, press Enter.

If you selected **Edit template mapping** (either by using a “/”, or by having previously used the “A” selection character for this option), then, before FM/DB2 imports the data, the Template Mapping panel is displayed for editing.

If you selected **Batch execution** (either by using a “/”, or by having previously used the “A” selection character for this option), the generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

Otherwise, FM/DB2 imports the data from the “From” data set to the “To” DB2 table.

### RELATED TASKS

- “Specifying a DB2 object name” on page 29
- “Specifying a data set and a member name” on page 34
- “Mapping data” on page 86
- “Running Import in batch”

### RELATED REFERENCES

- “Import Utility (“To”) panel” on page 641
- “Template Mapping panel” on page 783

## Running Import in batch

If you want to import large DB2 tables, you can perform the import in a batch job.

If you select the **Batch execution** option on the Import Utility “To” panel, the Import utility builds the necessary JCL to perform the import function in a batch job. The generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

If you have one or more data sets that contain the template that describes the record structure of your input data, you can specify the data set details (or TSO ALLOC statement) in the generated JCL with the keywords TINPUT or TCIN.

Similarly, if you have one or more data sets that contain the template that describes the record structure of your output data, you can specify the data set details (or TSO ALLOC statement) in the generated JCL with the keywords TOUTPUT or TCOU.



## RELATED REFERENCES

- “DBI (Import) batch command” on page 867
- “Import Utility (“To”) panel” on page 641

## Using a REXX procedure with the Import utility

You can specify an existing REXX procedure, or create a new one, to further enhance the way in which data is selected and imported.

You can code any number of REXX statements and functions to manipulate the output record, select specific records, print reports and tally numeric values. If you are coding a REXX procedure, be aware that:

- The import procedure is run after input template record selection is performed. The import procedure can cause a record (which would have been selected by the template selection process, if there was one) to be deselected for copying using RETURN DROP.
- The import procedure is run after any field mapping or conversion supplied by a template has been performed.
- If the record has been reformatted as a result of the template processing, the variable INREC contains the input record value and the variable OUTREC contains the reformatted output record.
- Changes made by the import procedure to INREC are ignored. Changes made to OUTREC are used in the import process to load the DB2 table.
- If using the PRINT() function, the template is determined as follows:
  - If an input template without an output template has been specified, the input template is used.
  - If an output template is specified, and the record value specified to print is the input record, the input template is used. Otherwise the output template is used.
  - If a record cannot be matched against the selected printing template, it is not printed.

### Example 1

Import records, inserting a new field after column 40 for a length of 4.

```
outrec = fld(1,40)||'    '||fld(41)
```

### Example 2

Import records with type A and print the first 10. The type value is in column 6.

```
if fld(6,1) = 'A' then do                                /* Type A? */
  If prtcnt() <= 10 then print(inrec,'CHAR') /* Print 10 */
  RETURN                                           /* Copy */
end
return 'DROP'                                           /* Drop the rest */
```

### Example 3

Change the output records to uppercase while importing.

```
upper outrec
```



### RELATED TASKS

"Specifying details for the "To" table" on page 203

"Enhancing the Import utility using a REXX procedure" on page 213

## General information about REXX

REXX stands for the REstructured eXtended eXecutor language. REXX is a general purpose programming language, similar to PL/I. It includes extensive parsing capabilities for character manipulation, extensive mathematical capabilities, and numerous built-in functions that perform various processing, searching, and comparison functions.

REXX programs are typically run by a language processor (interpreter). That is, the program is run statement-by-statement, without first being converted to another form (compiled). Because of the interpretive nature of REXX, FM/DB2 is able to exploit the power of REXX when processing record selection criteria.

Although REXX is a powerful and versatile language, coding selection criteria using REXX is straightforward. You do not need to know how to write REXX programs. All you need to know is how to write REXX comparison expressions. FM/DB2 takes care of turning your selection criteria into a REXX program.

Much of the information in this section has been extracted from the *OS/390 TSO/E REXX Reference* and *OS/390 TSO/E REXX User's Guide*. For more detailed information about REXX, see those manuals.

### Overview of REXX expressions

REXX expressions consist of one or more *terms* interspersed with zero or more *operators* that denote operations to be carried out on terms. Expressions are evaluated left to right, modified by parentheses and by operator precedence in the typical algebraic manner. If parentheses are encountered (other than those that identify function calls) the entire subexpression between the parentheses is evaluated immediately when the term is required. Expressions are wholly evaluated, unless an error occurs during evaluation. The REXX language uses a free format. This means you can insert extra spaces between words without causing an error.

The following list shows the terms you can use in a selection criteria expression. The operators you can use are described on the pages that follow.

#### Literal strings

A literal string is a sequence including any characters and delimited by the single quotation mark (') or the double quotation mark ("). Use two consecutive double quotation marks (") to represent a " character within a string delimited by double quotation marks. Use two consecutive single quotation marks (') to represent a ' character within a string delimited by single quotation marks. A literal string is a constant and its contents are never modified when it is processed.

These are valid strings:

```
'Fred'  
"Don't Panic!"  
'You shouldn't'          /* Same as "You shouldn't" */
```

Note that a string followed immediately by a ( is considered to be the name of a function. If followed immediately by the symbol X or x it is considered to be a hexadecimal string. If followed immediately by the symbol B or b it is considered to be a binary string.

A hexadecimal string is a literal string, expressed using a hexadecimal notation of its encoding. It is any sequence of zero or more hexadecimal digits (0-9, a-f, A-F), grouped in pairs. A single leading 0 is assumed, if necessary, at the front of the string to make an even number of hexadecimal digits. The groups of digits are optionally separated by one or more blanks, and the whole sequence is delimited by single or double quotation marks, and immediately followed by the symbol X or x. (Neither x nor X can be part of a longer symbol. A hexadecimal string is a literal string formed by packing the hexadecimal digits given. Packing the hexadecimal digits removes blanks and converts each pair of hexadecimal digits into its equivalent character, for example: 'C1'X A.

You can use hexadecimal strings to include characters in a program even if you cannot directly enter the characters themselves. These are valid hexadecimal strings:

```
'ABCD'x
"1d ec f8"X
"1 d8"x
```

A binary string is a literal string, expressed using a binary representation of its encoding. It is any sequence of zero or more binary digits (0 or 1) in groups of 8 (bytes) or 4 (nibbles). The first group can have fewer than four digits; in this case, up to three 0 digits are assumed to the left of the first digit, making a total of four digits. The groups of digits are optionally separated by one or more blanks, and the whole sequence is delimited by matching single or double quotation marks and immediately followed by the symbol b or B.

A binary string is a literal string formed by packing the binary digits given. If the number of binary digits is not a multiple of eight, leading zeros are added on the left to make a multiple of eight before packing. You can use binary strings to specify characters explicitly, bit by bit.

These are valid binary strings:

```
'11110000'b      /* == 'f0'x      */
"101 1101"b      /* == '5d'x      */
'1'b             /* == '00000001'b and '01'x */
'10000 10101010'b /* == '0001 0000 1010 1010'b */
'b              /* == ''          */
```

### Symbols

Character strings, without quotation marks, which are converted to uppercase. Any symbol that begins with a # is treated as a reference to a field in the record being processed, and the value of the field is used. All other symbols are treated as constants.

FM/DB2 assigns to each field defined in a template a unique field reference number. If you want to refer to a field in a selection criteria expression, you specify the field's field reference number prefixed by #. Note that you can only refer to fields defined in the record you are currently working with.

REXX expression evaluation only processes data in the form of "typeless" character strings (typeless because they are not, as in the case of COBOL, of a particular data type such as binary, packed-decimal, and so forth). Therefore, if you refer to a numeric field, FM/DB2 converts the value of the field to a numeric character string that can be processed by REXX when evaluating the selection criteria expression. The number of integer and decimal digits in the character string is determined by the field definition in your template. For example, if you refer to a packed-decimal

## Copying data from a VSAM or QSAM file

field with a COBOL PICTURE clause of 999V99, FM/DB2 converts the value of the field to a character string consisting of numeric digits, a period for the virtual decimal place, and, if the value of the field is negative, a leading sign character (such as -123.45). Note that all numeric fields are treated as signed, regardless of whether the COBOL PICTURE clause contains a sign symbol.

Occasionally, you might want to evaluate the value of a numeric field without converting it to a numeric character string. To do this, prefix the field reference number by #u instead of #. This tells FM/DB2 not to convert the number to a numeric character string. For example, if to test a 2-byte binary numeric field (with a field reference number of 45) for a special value of X'FFFF', code:

```
#u45 = 'FFFF'x
```

If you refer to a field in an array, you must qualify the field reference with the required number of subscripts enclosed in parentheses and separated by commas. The number of subscripts you specify must equal the number of dimensions in the array that contains the field you are referencing. In COBOL terms, there must be a subscript for each OCCURS clause in the hierarchy containing the field, including any OCCURS clause for the field itself. Each subscript you specify must be a positive integer in the range 1 to the maximum number of occurrences of the field as specified in the OCCURS clauses. If the field you refer to is in a variable-length array (specified using the OCCURS DEPENDING ON clause), ensure that you do not refer to an occurrence of the field that, for any given record, might not exist. If you do refer to a non-existent field, the selection criteria is not satisfied, and the record is not selected.

**Note:** The object of an OCCURS DEPENDING ON clause must be defined as a field in the static portion of the same record as the array (that is, the portion of the record that precedes any variable-length array defined with the OCCURS DEPENDING ON clause). If the object of the OCCURS DEPENDING ON clause is not defined in this way, you cannot refer to any fields in the array or any fields in the record that follow the array.

### Function call

A call to REXX built-in function.

### Subexpressions

Terms in an expression bracketed within left and right parentheses.

## Comparison operators

REXX comparison operators compare two terms and return the value 1 if the result of the comparison is true, or 0 otherwise. Comparison operators can compare numbers or character strings. The most commonly used comparison operators are:

Operator	Meaning
=	Equal
≠, \=	Not equal
<	Less than
≧, \<	Not less than
>	Greater than
≦, \>	Not greater than
<=	Less than or equal to
>=	Greater than or equal to
><	Greater than or less than (same as not equal)

<> Less than or greater than (same as not equal)

Note that the not character (¬), is synonymous with the backslash (\). You can use the two characters interchangeably.

When comparing terms using these comparison operators, if both terms in the expression are numeric, REXX performs a numeric comparison. Otherwise, both terms are treated as character strings and REXX performs character comparison. (A number in REXX is a string that contains one or more decimal digits, an optional decimal point, and an optional leading sign character. The string can contain one or more leading or trailing blanks, and the sign character can be separated from the digits by one or more blanks.)

In a character comparison, leading and trailing blanks are ignored, and the shorter string is padded with blanks on the right. Character comparisons are case-sensitive. To prevent lowercase characters being converted to uppercase, delimit character strings with quotation marks. For example, if the field #4 contains the value MixedCase both the following comparison operations would be true:

```
#4 = 'MixedCase'
#4 = '    MixedCase    '
```

but the following comparison operation would not be true:

```
#4 = MixedCase
```

In numeric comparisons, the comparison is effected by subtracting the two numbers (calculating the difference) and then comparing the result with 0. For example, the comparison operation:

```
#6 = 10
```

is identical to the operation:

```
(#6 - 10) = 0
```

In addition to these comparison operators, REXX provides a number of “strict” comparison operators that are mainly intended for use if comparing character strings. The strict comparison operators all have one of the characters defining the operator doubled, such as == (strictly equal).

The strict comparison operators are:

Operator	Meaning
==	Strictly equal
¬==, \==	Strictly not equal
<<	Strictly less than
¬<<, \<<	Strictly not less than
>>	Strictly greater than
¬>>, \>>	Strictly not greater than
<<=	Strictly less than or equal to
>>=	Strictly greater than or equal to

If you use the == comparison operator (strictly equal), the two character strings being compared must be identical (character by character) and of the same length to be considered strictly equal. Leading and trailing blanks are significant. For example, continuing the example using field #4 that contains the value MixedCase only the first of the following comparison operations would be true:

```
#4 == 'MixedCase'
#4 == '    MixedCase    '
```

## Copying data from a VSAM or QSAM file

Similarly, the strict comparison operators such as >> or << carry out a simple character-by-character comparison, with no padding of either of the strings being compared. The comparison of the two strings is from left to right. If one string is shorter than and is a leading substring of another, then it is smaller than (less than) the other. The strict comparison operators do not attempt to perform a numeric comparison on the two terms. Do not use them to compare numeric fields.

### Arithmetic operators

You can process numeric terms in comparison expressions using the arithmetic operators:

Operator	Meaning
+	Add
-	Minus
*	Multiply
/	Divide
%	Integer divide (divide and return the integer part of the result)
//	Remainder (divide and return the remainder--not modulo, because the result might be negative)
**	Power (raise a number to a whole-number power)
Prefix -	Same as the subtraction: 0 - number
Prefix +	Same as the addition: 0 + number

You can use these operators to produce an intermediate result that you can compare with another term. For example, given these fields:

#6        Contains a numeric value representing an employee's annual salary.  
#15       Contains a numeric value representing his annual travel allowance.  
#23       Contains a numeric value representing his annual bonus.

you can use this comparison to select records for employees with a combined annual payment of greater than \$100,000:

$(\#6 + \#15 + \#23) > 100000$

For another example, with these fields:

#45       Contains the number of sick days an employee is entitled to annually.  
#46       Contains the number of sick days an employee has used in the current year.

you can use this comparison to select records for employees who have used 50% or more of their sick days entitlement:

$(\#46 / \#45) >= .5$

Note that in each of these examples, the arithmetic subexpression is contained in parentheses. This ensures that the entire subexpression is evaluated before the comparison operation.

The order of precedence of arithmetic operators is as follows (highest is at the top):

Operator	Meaning
+ - * \	Prefix operators
**	Power
* /	Multiply and divide
+ -	Add and subtract

For example, \* (multiply) has a higher priority than + (add), therefore  $3+2*5$  evaluates as 13 (rather than the 25 that would result if strict left to right evaluation

occurred). To force the addition to occur before the multiplication, rewrite the expression as (3+2)\*5. Adding the parentheses makes the first three tokens a subexpression.

### Logical (boolean) operators

REXX comparison expressions return a true (1) or false (0) value when processed. Logical operators combine two comparisons and return the true (1) or false (0) value depending on the results of the comparisons.

The logical operators are:

Operator	Meaning
<b>&amp;</b>	AND
	Returns 1 if both comparisons are true. For example: (4 > 2) & (a = a) /* true, therefore result is 1 */ (2 > 4) & (a = a) /* false, therefore result is 0 */
<b> </b>	Inclusive OR
	Returns 1 if at least one comparison is true. For example: (4 > 2)   (5 = 3) /* at least one is true, therefore result is 1 */ (2 > 4)   (5 = 3) /* neither one is true, therefore result is 0 */
<b>&amp;&amp;</b>	Exclusive OR
	Returns 1 if only one comparison (but not both) is true. For example: (4 > 2) && (5 = 3) /* only one is true, therefore result is 1 */ (4 > 2) && (5 = 5) /* both are true, therefore result is 0 */ (2 > 4) && (5 = 3) /* neither one is true, therefore result is 0 */
<b>Prefix ~ \</b>	Logical NOT
	Returns the opposite response. For example: \ 0 /* opposite of 0, therefore result is 1 */ \ (4 > 2) /* opposite of true, therefore result is 0 */

Logical expressions are used in complex comparisons and can act as checkpoints to stop unwanted conditions (such as testing a field for a value of zero before using it as a divisor). If you have a series of logical expressions, for clarification, use one or more sets of parentheses to enclose each expression. For example:

```
(#46 = 999) | ((#45 > 0) & (#46 / #45) >= .5)
```

### Useful functions

REXX provides a rich set of built-in functions, including character manipulation and conversion functions. Some of these functions might be of use when you are writing your comparison expressions. To call a function, type the function name directly followed by one or more arguments within parentheses. There can be no space between the function name and the left parenthesis. For example:

```
function(arguments)
```

A function call can contain up to 20 arguments separated by commas. Each argument can be:

Argument	Example
Blank	<i>function</i> ( )
Constant	<i>function</i> (55)
Symbol	<i>function</i> (#5)
Literal string	<i>function</i> ('With a literal string')

## Copying data from a VSAM or QSAM file

Option recognized by function *function(option)*

Another function *function(function(arguments))*

Combination of argument types  
*function('Literal string', #5, option)*

Some of the built-in functions provided by REXX that you might find useful are:

### ABS()

►►—ABS—(*number*)—◄◄

Returns the absolute value of a *number*. For example, to select records in which field #12 contains a value in the range -10 to +10, specify:

ABS(#12) <= 10

### MAX()

►►—MAX—(—*number*—)  
          ↑,     |  
          └───┘

Returns the largest number from the list specified. For example, to select records in which any of fields #10, #11, or #12 contains a value greater than 55, specify:

MAX(#10, #11, #12) > 55

### MIN()

►►—MIN—(—*number*—)  
          ↑,     |  
          └───┘

Returns the smallest number from the list specified. For example, to select records in which any of fields #10, #11, or #12 contains a value less than 0, specify:

MIN(#10, #11, #12) < 0

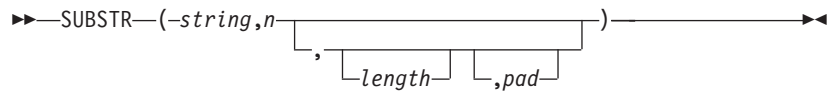
### POS()

►►—POS—(—*needle*—,—*haystack*—  
                                  └, *start*┘)—◄◄

Returns the position of one string, *needle*, in another, *haystack*. Returns 0 if *needle* is a null string, or is not found in *haystack*, or if *start* is greater than the length of *haystack*. By default, the search starts at the first byte of *haystack* (that is, the value of *start* is 1). You can override this by specifying *start* (which must be a positive whole number), the point at which the search starts. For example, to select records in which any character in field #22 is a blank, specify: POS(' ', #22) > 0

### SUBSTR()





Returns the substring of *string* that begins at the *n*th byte and is of length *length* bytes, padded with *pad* if necessary. *n* is a positive whole number. If *n* is greater than the length of *string* (in bytes), only pad characters are returned.

If you omit *length*, the rest of the string is returned. The default *pad* character is a blank.

For example, to select records in which bytes 4-6 of field #22 are the string 'NOT', specify:

```
SUBSTR(#22,4,3) = 'NOT'
```

### Performance tips

#### Do not use EXITs in REXX

Use RETURN to terminate all your REXX processing. Do not use EXIT statements. EXIT statements in REXX used with FM/DB2 cause excessive CPU usage.

### Examples

The following are examples of REXX comparison expressions:

**Example 1** Select records in which the transaction date (field #14) is any date in July 2000, or the transaction value (field #27) is greater than \$100,000.00

```
(#14 >= 20000701 & #14 < 20000801) | #27 > 100000.00
```

**Example 2** Select records in which the count of credit notes (field #62) is greater than 10% of the count of invoices (field #61)

```
#62 > #61/10
```

**Example 3** Select records in which either the transaction value (field #27) is greater than \$50,000.00 and the purchase order number (field #25) starts with characters other than 'TX', or the transaction value is greater than \$70,000 and the supplier number (field #23) is 984545, but not if both sets of conditions are true

```
(#27 > 50000.00 & SUBSTR(#25,1,2) ~= 'TX') &&  
(#27 > 70000.00 & #23 = 984545)
```

## Enhancing the Import utility using a REXX procedure

When you use the Import utility, you can supply a REXX procedure to enhance typical import FM/DB2 processing according to your own custom requirements.

### Supplying a REXX procedure when using the Import utility

You use the **Use REXX proc** field on the Import "From" panel to supply the REXX procedure:

/ Use REXX proc member

If you enter an \* (asterisk) as the *member* name, FM/DB2 displays an edit panel where you can enter a temporary procedure for one time use. Use this method only for short, ad hoc procedures that you do not want to keep for future use.

Alternatively, you can allocate an FMNEXEC DD that identifies a PDS where your saved REXX procedures reside. If you specify a member name, File Manager either



## Copying data from a VSAM or QSAM file

edits a new member or runs with an existing member. Specifying blank or a pattern other than \* displays a member selection list of the PDS allocated to FMNEXEC. Concatenated FMNEXEC data sets are not supported under ISPF.

For example, if you store your REXX procedures in a PDS called 'USERID.FMNEXEC' then, before using the **Use REXX proc** field, you must issue a TSO ALLOC command similar to this:

```
TSO ALLOC DD(FMNEXEC) DSN('USERID.FMNEXEC') SHR
```

In each case, FM/DB2 validates the REXX procedure that you supply. If errors are detected, FM/DB2 shows all detected errors in a message box and opens the procedure in an edit panel which you can use to correct it. Canceling the Edit session clears the **Use REXX proc** field and redisplay the entry panel.

### How enhanced processing works

The REXX procedure that you supply is run against each input record in sequence, either until the end of the input data set is reached, or until the REXX procedure issues a RETURN STOP (or RETURN STOP IMMEDIATE) command.

FM/DB2 defines two special REXX variables, INREC and OUTREC, that you can use in the REXX procedure that you supply to perform enhanced processing. When the FM/DB2 function or panel calls the REXX procedure, the contents of each input record selected for processing are passed to the procedure in both INREC and OUTREC. When the procedure is called, the contents of INREC and OUTREC are identical.

The variable INREC is intended to be used as a reference variable (FM/DB2 ignores any changes to INREC). The variable OUTREC can be updated by the procedure, and (unless you “drop” the record from further processing, as described later in this section) when the REXX procedure has completed, is passed back for processing by the Import utility. For example, the following code changes a two-digit year in the output record to a four-digit year:

```
/* Changes a date of format MMDDYY (starting at column 1) to MMDDYYYY */
If fld(5,2,z) > 50
  outrec = fld(1,4)||'19'||fld(5)
else
  outrec = fld(1,4)||'20'||fld(5)
```

**Using templates with enhanced processing:** Only those records that the template selects are passed to the REXX procedure for further processing.

Regardless of whether or not the template you are using selects only certain fields, the INREC and OUTREC variables contain complete records with all fields.

#### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

**Dropping a record from further processing:** If the REXX procedure exits normally after processing a record, that record is considered to be “selected”, and the contents of OUTREC are used as the output record for importing. However, if the REXX procedure ends with a RETURN DROP (or RETURN STOP IMMEDIATE) instruction, the current record is “dropped” from further processing by FM/DB2, and is not imported.

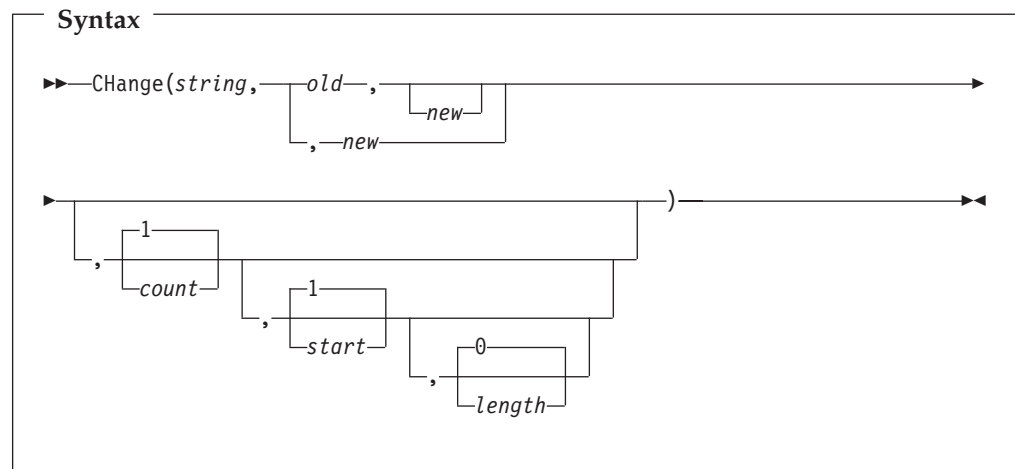
## External REXX functions

FM/DB2 provides the following external REXX functions that you can use in addition to the built-in REXX functions described in the *OS/390 TSO/E REXX Reference*.

<b>CHANGE</b>	Change a character string
<b>CONTAINS</b>	Check for character values
<b>FLD</b>	Refer to a field from the current input record
<b>NCONTAIN</b>	Check for numeric values
<b>PRINT</b>	Print a record
<b>PRTCOUNT</b>	Count of records printed
<b>RECSIN</b>	Count of records read
<b>RECSOUT</b>	Count of records written to a given data set
<b>TALLY</b>	Total a field value and report the total
<b>TM</b>	Test a string for a bit value
<b>WRITE</b>	Write a record

**Note:** You can only use these FM/DB2-specific REXX external functions, and the INREC and OUTREC variables, in a REXX procedure specified by the **Use REXX proc** field). You cannot use these functions and variables in REXX procedures outside of this FM/DB2 environment.

### CHANGE:



Returns *string*, with up to *count* occurrences of the substring *old* changed to the substring *new*. The default value for *count* is 1. If you specify *count*, it must be zero or a positive whole number. If you specify zero, all occurrences of *old* in *string* are changed to *new*.

You can restrict the byte positions within *string* that are examined for substring *old* by specifying a starting byte position (*start*) and a length in bytes (*length*). The default value for *start* is 1. If you specify *start*, it must be a positive whole number. If *start* is greater than `LENGTH(string)`, the **CHANGE** function has no effect. If you specify *length*, it must be zero or a positive whole number. If you omit *length*, or specify zero, the remainder of *string* from byte position *start* is examined. If *length* is less than `LENGTH(old)`, the **CHANGE** function has no effect.

The lengths of substrings *old* and *new* can be different. If you omit *old*, the substring *new* is inserted in *string* at the byte position indicated by *start*. If you omit *new*, the substring *old* is deleted from *string*.

## Copying data from a VSAM or QSAM file

Here are some examples:

### Example 1

```
CHANGE('abcbabcabc','abc','DeF')      → 'DeFabcbabc'
/* 1 (default) occurrence of old changed */
```

### Example 2

```
CH('abcbabcabc','abc','DeF',2)        → 'DeFDeFabcb'
/* 2 occurrences of old changed */
```

### Example 3

```
CHANGE('abcbabcabc','abc','DeF',0)     → 'DeFDeFDeF'
/* count = 0, all occurrences of old changed */
```

### Example 4

```
CH('abcbabcabc','abc','DeF',,4)        → 'abcDeFabcb'
/* 1 (default) occurrences of old changed, */
/* starting at position 4 */           */
```

### Example 5

```
CHANGE('aaaaaaaa','a','A',0,3,2)       → 'aaAaaaaa'
/* all occurrences of old changed, starting at */
/* position 3 for a length of 2 */         */
```

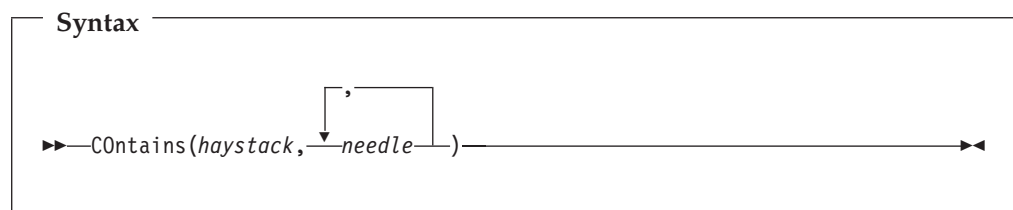
### Example 6

```
CH('abcbabcabc','a',,0)                → 'bcbcbcb'
/* new omitted, count = 0, */
/* all occurrences of old deleted */      */
```

### Example 7

```
CHANGE('abc',,'def',,2)                → 'adefbc'
/* old omitted, new inserted, starting at */
/* position 2 */                       */
```

## CONTAINS:



If the *haystack* string contains one or more of the *needle* strings, CONTAINS returns 1. Otherwise, CONTAINS returns 0.

CONTAINS is case-sensitive: it only returns 1 if the *haystack* contains a string with the same mix of uppercase and lowercase as a *needle*.

### Example 1

If the current input record contains “Michael”, “Mick” or “Mike” in the first ten columns, print the record.

```
If co(fld(1,10),'Michael','Mick','Mike') Then print(inrec, 'CHAR')
```

## Example 2

If the current input record contains "USA", "Australia" or "England", drop the record from processing.

```
If contains(inrec,'USA','Australia','England') Then exit 'DROP'
```

### RELATED TASKS

"NCONTAIN" on page 218

### FLD:

#### Syntax

```
►►FLD(start_column [length] [type])◄◄
```

Returns the value of a field from the current input record (INREC), starting at *start\_column* (in bytes), of *length* number of bytes, interpreted according to the specified *type*:

- B** if the field is binary. If you specify B for *type*, *length* must be 2, 4, or 8.
- C** if the field contains characters.
- P** if the field is packed decimal. If you specify P for *type*, *length* must be between 1 and 16.
- Z** if the field is zoned decimal. If you specify Z for *type*, *length* must be between 1 and 32 or, if the field contains a separate sign character, between 1 and 33.

The default value for *type* is C.

If you omit *length* and specify *type* P (packed decimal), FLD attempts to determine the packed field length from the record data, and returns only that field. If you omit *length* for other field types, FLD returns the remainder of the record.

The FLD function is similar to the built-in REXX SUBSTR function, except that FLD interprets the "substring" according to the specified data type, and returns the value formatted appropriately. (For a numeric field, FLD returns the value with a sign, and without leading zeros.)

## Example 1

If the value of the packed-decimal field that starts at byte 8 is greater than 100, do not process the current record.

```
if fld(8,P) > 100 then exit 'DROP'
```

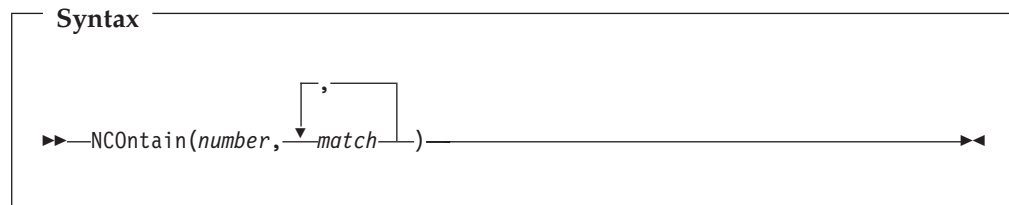
## Example 2

If the value of the 2-digit year field starting at byte 42 is greater than 60, insert the literal "19" before the year field. Otherwise, insert "20".

## Copying data from a VSAM or QSAM file

```
if fld(42,2,Z) > 60 then
  outrec = fld(1,41)||'19'||fld(42)
else
  outrec = fld(1,41)||'20'||fld(42)
```

### NCONTAIN:



If the numeric value of any of the *match* arguments is equal to the numeric value of *number*, NCONTAIN returns 1. Otherwise, NCONTAIN returns 0.

#### Example 1

If the current record contains a packed decimal value of value of 10, 20, or 30 starting at byte 8, print the record.

```
if nco(fld(8,P),10,20,30) then print(inrec,'CHAR')
```

#### Example 2

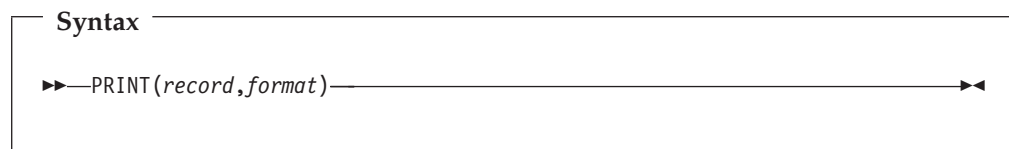
If the current record contains a zoned decimal value of 11, 12, or 13 starting at byte 10, drop the record from processing.

```
if nco(fld(10,5,Z),11,12,13) then exit 'DROP'
```

#### RELATED TASKS

“CONTAINS” on page 216

### PRINT:



Prints the *record* string in the specified *format*: SNGL or TABL.

#### Notes:

1. Only those fields that have been selected in the template are printed.
2. If the record has been reformatted by template processing, the variable INREC contains the input record value and OUTREC will contain the reformatted output record.

#### Example 1

Print the first hundred records.

```
if PRTCOUNT() < 100 then PRINT(inrec,'CHAR')
```

#### Example 2

Print the current input record in TABL format.

```
rc = PRINT(inrec,'TABL')
```

### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

“Selecting a display format” on page 118

### PRTCOUNT:

#### Syntax

```
►► PRTCOUNT() ◄◄
```

Returns the current count of records printed.

#### Example

Print the first 10 input records.

```
if prtcount() < 10 then print(inrec,'CHAR')
```

### RECSIN:

#### Syntax

```
►► RECSIN() ◄◄
```

Returns the count of records read so far from the input data set, and passed to the REXX procedure. Only the input records that are selected by the template are passed to the REXX procedure and included in the count returned by RECSIN.

#### Example

Print every hundredth record.

```
if RECSIN()//100 = 0 then PRINT(inrec,'CHAR')
```

### RECSOUT:

#### Syntax

```
►► RECSOUT(ddname) ◄◄
```

Returns the count of records so far written to the specified output data set.

The argument you can specify is:

<b>ddname</b>	Specifies that the count of records so far written to the data set identified by the specified <i>ddname</i> be returned.
---------------	---

## Copying data from a VSAM or QSAM file

The count of records written to an output data set is incremented each time a WRITE function is issued against the specified data set. In the case of the primary output data set, the count is also incremented each time a record is written to the data set by the FM/DB2 function. Unless a record is discarded using the RETURN DROP (or STOP IMMEDIATE) instruction, each record selected for processing is written to the primary output data set.

### Example 1

If more than one hundred records have been written to the EXT100 file, stop FM/DB2 processing.

```
rc = WRITE(EXT100)
if RECSOUT(EXT100) > 100 then exit "STOP"
```

#### RELATED TASKS

“RETURN values” on page 222

### TALLY:

#### Syntax

►► TALLY(*start*, *length*, Z  
*type*, *string*) ◄◄

Accumulates the value of the specified input record field in a TALLY register and, at the end of the Import utility, prints on SYSPRINT the TALLY register prefixed by the character string *string*. If the TALLY function is successful, it returns a value of 0. If it is unsuccessful, it raises the REXX syntax error condition.

The field whose value is to be accumulated starts at position *start* (in bytes) in the input record, and is *length* bytes long. If the sum of *start* and *length* is greater than LENGTH(INREC), the TALLY function returns a value of 0 without changing the TALLY register.

The data type of the field to be accumulated is specified by *type*. The values that can be specified for *type* are:

- B** if the field is binary. If you specify B for *type*, *length* must be 2, 4, or 8. The field is assumed to be signed.
- P** if the field is packed decimal. If you specify P for *type*, *length* must be between 1 and 16 bytes.
- Z** if the field is zoned decimal. If you specify Z for *type*, *length* must be between 1 and 32 bytes or, if the field contains a separate sign character, between 1 and 33 bytes.

The default value for *type* is Z.

You can code more than one TALLY function in your procedure. FM/DB2 creates a separate TALLY register for each TALLY function with a unique combination of arguments. This means that you can accumulate a given field in more than one TALLY register by specifying a different value for *string* in each TALLY function.

### Example

Accumulate hours recorded in personnel records depending on record type.

```
select;
  when(fld(1,1) = 'E') then
    rc = TALLY(15,4,B,'Sum of employee hours')
  when(fld(1,1) = 'S') then
    rc = TALLY(15,4,B,'Sum of supervisor hours')
  otherwise
    rc = TALLY(28,4,B,'Sum of manager hours')
end
```

**TM:**

### Syntax

►►—TM(*string*,*mask*)—◄◄

Tests selected bits of a string and sets the condition code accordingly.

The length of the test is based on the length of the shorter of the two arguments, *string* and *mask*. A *mask* bit of one indicates that the equivalent bit in *string* is to be tested. If a *mask* bit is zero, the equivalent *string* bit is ignored. If the tested bits are all ones, TM returns 1. Otherwise, TM returns 0.

### Example 1

Test the third byte of the input record and if the low order bit is set, overlay a hex FF into the second byte of that record.

```
if TM(fld(3,1),'01'x) then do
  outrec = OVERLAY('FF'x,outrec,2)
  exit
end
exit drop
```

### Example 2

Test the third byte of the input record and if the high order bit is set, logically OR a hex 04 over the contents of the second byte of that record.

```
if TM(fld(3,1),'10000000'b) then do
  outrec = OVERLAY(BITOR(fld(2,1),'04'x),outrec,2)
  exit
end
exit drop
```

**WRITE:**

### Syntax

►►—WRITE(—  
           ↓  
           ' '—  
           ↓  
           ddname—  
           ↓  
           )—◄◄



## Copying data from a VSAM or QSAM file

Writes a record to the specified data sets. If the WRITE function is successful, it returns a value of 0. If the WRITE function is unsuccessful, it raises the REXX syntax error condition.

The argument you can specify is:

**ddname** Specifies a record is to be written to the data set identified by the specified *ddname*.

The record is written from the contents of one of the following REXX variables:

- If it has been assigned a value by the procedure, the variable `OUTREC.ddname`, where *ddname* is the *ddname* specified in the WRITE function
- If the variable `OUTREC.ddname` has not been assigned a value, or has been unassigned using the DROP instruction, the FM/DB2-defined variable, `OUTREC`

The length of the record written depends upon the data set attributes of the output data set. If the output data set contains variable-length records, the length of the record is determined from the length of the data in the REXX variable. If the length of the data is greater than the maximum record length specified in the data set attributes, the record is truncated. If the output data set contains fixed-length records, the length of the record written is the length specified in the data set attributes, truncated or padded as necessary.

If the record format of the output data set specifies that the records contain a carriage control character, depending on the output device, the first character of the record data in the REXX variable is interpreted as a carriage control character. For more information about records containing carriage control characters, see *OS/390 DFSMS: Using Data Sets*.

### Example 1

If the current record is type 01, write it to the DD01 file.

```
if fld(1,2) = 01 then WRITE('DD01')
```

### Example 1

If the current record is type 02, write it to the DD02 and DD02COPY files.

```
if fld(1,2) = 02 then WRITE('DD02','DD02COPY')
```

## RETURN values

In REXX, you can use the RETURN instruction to leave a procedure. You can optionally specify a character string as a parameter on the RETURN instruction. This character string is returned to the caller of the procedure. File Manager recognizes and processes the following character strings if specified on the RETURN instruction. The character strings can be specified in uppercase, lowercase, or a mixture of both.

**DROP:** The character string DROP tells FM/DB2 to not write the current record to the primary output data set. Specifying DROP on the RETURN instruction results in the current record not being imported to the target table.

Here are some examples:

```
RETURN 'DROP'  
Return 'Drop'  
Return drop /* assumes no variable named 'drop' has been assigned */
```

**STOP:** The character string STOP tells FM/DB2 to stop the current FM/DB2 function after the current record has been written to the primary output data set. Specifying STOP on the RETURN instruction results in the current record being imported to the target table and the Import utility being stopped.

Here are some examples:

```
RETURN 'STOP'  
Return 'Stop'  
Return stop /* assumes no variable named 'stop' has been assigned */
```

**STOP IMMEDIATE:** The character string STOP IMMEDIATE tells FM/DB2 to stop the current FM/DB2 function without writing the current record to the primary output data set. Specifying STOP IMMEDIATE on the RETURN instruction results in the current record not being imported to the target table and the Import utility being stopped.

Here are some examples:

```
RETURN 'STOP IMMEDIATE'  
Return 'Stop Immediate'  
Return stop immediate /* assumes variables 'stop' and 'immediate' not assigned */
```

---

## Copying data to a VSAM or QSAM file

To copy data from a DB2 table or view to a partitioned, sequential, or VSAM data set, use the Export utility function (3.7).

### Notes:

1. To copy data between DB2 tables, use the Copy utility function (3.3).
2. To copy data to a DB2 table or view from a QSAM or VSAM data set, use the Import utility function (3.6).
3. To copy data to a sequential file using the DB2 UNLOAD utility, use the DB2 Utilities option (3.9). When copying large tables, the use of the DB2 UNLOAD utility is preferable (for reasons of performance and efficiency).

The Export utility generates the export data using DB2 SQL. The data can be exported in any of these formats:

- DB2 (File Manager internal) format. This format is *not* the same as the data formats used by the DSNTIAUL sample job and the DB2 utilities. This is the recommended option if the exported data is imported into another DB2 table using the FM/DB2 Import utility.
- DB2 external (or unload) format. This is the same format used by the DB2 UNLOAD utility.
- DB2 DSNTIAUL unload format. This is the format used by the DB2 DSNTIAUL sample program.
- A user defined format. Note that the user defined Placement: **3. User defined** is not supported by the Import utility.
- Delimited (CSV) format. The exported data format is not supported by the Import utility.
- Copybook layout format.

You can use the output data set generated by the Export Utility for input to:

1. The FM/DB2 Import utility. This utility supports data in DB2 format and copybook formats.
2. A PC-based spreadsheet application program in the form of a comma-delimited (CSV) file.

## Copying data to a VSAM or QSAM file

### 3. Other user application programs.

If you export data, you can:

- Select the format in which the data is exported.
- Select the columns to be exported by selecting the required columns in the "from" template.
- Reformat data during export by mapping table columns to fields in the output partitioned, sequential, or VSAM data set (as defined by a template).
- Create and save a template that describes the exported data.
- Select which rows to export.
- Specify the number of rows that are exported.
- Specify whether you want to run the export in foreground or batch.

To display the Export Utility panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 7 (Export)

#### RELATED TASKS

"Copying data from a VSAM or QSAM file" on page 200

"Notes on using Export" on page 230

"Specifying details for the "From" table"

"Specifying details for the "To" data set" on page 227

#### RELATED REFERENCES

"Primary Option Menu panel" on page 670

"Utility Functions panel" on page 797

"Export Utility panel" on page 612

## Specifying details for the "From" table

Specify the name of the source ("From") table on the Export Utility panel. If the table you specify does not exist, FM/DB2 issues an error message and stops the utility.

If you do not want to export all of the rows in the "From" table, specify the number of rows you want to export (1–99999999) in **Export Count**.

If you are using a specific template for the "From" table (see option 1 in **Template usage**), specify the name of the template in the **From Template** entry fields.

The **Processing Options** on the Export Utility panel specify which template you want to use for the "From" table, and whether you want to edit the template before the export process.

### Template usage

The Export Utility panel provides four options for template processing:

#### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **From Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues

using this template in place of the automatically-generated template for the table (see Template usage option 3).

### 2. Previous

Uses the last (previously used) template for this table.

### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **From Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **From Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a "/" or an "A":

#### Edit options

Use to display the first of the Export Options panels.

#### Edit template

Use to edit the template for the "From" table before proceeding to the Export Utility "To" panel.

To proceed, press Enter.

If you selected **Edit options** (either by using a "/", or by having previously used the "A" selection character for this option), the first of the Export Options panels is displayed.

If you selected **Edit template** (either by using a "/", or by having previously used the "A" selection character for this option), the Column Selection/Edit panel is displayed.

Otherwise, the Export Utility "To" panel is displayed.

#### RELATED TASKS

"Specifying a DB2 object name" on page 29

"Specifying a data set and a member name" on page 34

"Selecting options on FM/DB2 panels" on page 28

Chapter 3, "Working with templates," on page 55

"Editing the template for the "From" table" on page 226

"Specifying details for the "To" data set" on page 227

#### RELATED REFERENCES

"Export Utility panel" on page 612

## Setting options for the current Export session

If you select **Edit options** on the Export Utility panel (or the Export Utility "To" panel), FM/DB2 displays the first of up to three Export Options panels. The remaining panels are displayed by pressing the NextPage function key (F11).

## Copying data to a VSAM or QSAM file

### Notes:

1. To navigate to the Export Options (2 of 3) panel, you must select one of the data format options **4. User defined** or **5. Delimited variables (CSV), and Null indicators / CSV options** on the Export Options (1 of 3) panel.
2. To navigate to the Export Options (3 of 3) panel, you must select the data format option **4. User defined** and **Data type format** on the Export Options (1 of 3) panel.

Use the Export Options panels to change the options for the current Export session.

**Note:** Options apply for the current session of FM/DB2 and only revert to global settings when the session is terminated or global settings are invoked (from the pull down or from the menu).

### RELATED REFERENCES

“Export Utility panel” on page 612

“Export Options (1 of 3) panel” on page 602

## Editing the template for the “From” table

If you select the **Edit template** option on the Export Utility panel, FM/DB2 displays the Column Selection/Edit panel. You can use this panel to restrict the data in the “From” table that you want exported by:

- Selecting (or deselecting) specific columns for exporting.
- Specifying *row selection criteria*. Only rows whose contents satisfy the criteria are selected for exporting.

**Note:** When you export data in FM/DB2 internal (SQLDA) format, you cannot alter the order in which the columns are exported. Data is always exported in the order that the columns are defined in the DB2 catalog (the same order in which the columns are displayed in the Column/Selection Edit panel).

The Export Utility ignores any information specified in the **Seq** field of the template (this information is used to change the order in which FM/DB2 *displays* or *prints* columns).

For example, the template shown in Figure 51 on page 227 has been edited to select certain columns and only rows whose contents meet certain criteria. If you use this template as the “From” template for your Export, the data exported is restricted to:

- The columns FIRSTNME, LASTNAME, WORKDEPT, and JOB, but only where WORKDEPT equals “MNT” and JOB equals “PAINTER”.

Process		Options		Utilities		Help	
FM/DB2 (DFA2)				Column Selection/Edit		Line 1 of 16	
TABLE FMNUSER.EMP							
----- Row Selection Criteria ----- (Use SQL/PF4 for full screen edit) -----							
1 Sel: WHERE "WORKDEPT" = 'MNT' AND "JOB" = 'PAINTER' +							
Cmd	Seq	SHE	CL#	Column name	Data type(length)	Null	Default
				**** Top of data ****			
---	---		1	EMPNO	CHARACTER(6)		None
---	---	S	2	FIRSTNME	VARCHAR(12)		None
---	---		3	MIDINIT	CHARACTER(1)		None
---	---	S	4	LASTNAME	VARCHAR(15)		None
---	---	S	5	WORKDEPT	CHARACTER(3)	Y	Null
---	---		6	PHONENO	CHARACTER(4)	Y	Null
---	---		7	HIREDATE	DATE	Y	Null
---	---	S	8	JOB	CHARACTER(8)	Y	Null
---	---		9	EDLEVEL	SMALLINT	Y	Null
---	---		10	SEX	CHARACTER(1)	Y	Null
---	---		11	BIRTHDATE	DATE	Y	Null
---	---		12	SALARY	DECIMAL(9,2)	Y	Null
Command ==>				Scroll PAGE			
F1=Help		F2=Split		F3=Exit		F4=SQL	
F7=Up		F8=Down		F9=Swap		F10=Left	
						F11=Right	
						F12=Cancel	

Figure 51. Column Selection/Edit panel for the “From” table

#### RELATED TASKS

Chapter 3, “Working with templates,” on page 55

“Changing the sequence of displayed or printed data” on page 76

#### RELATED REFERENCES

“Export Utility panel” on page 612

“Column Selection/Edit panel” on page 419

## Specifying details for the “To” data set

Type the “To” data set details. Use a combination of the **Data set name**, **Member**, and **Volume** entry fields to specify the partitioned, sequential, or VSAM data set to which you want to export the data. You can specify the name of an existing data set, or the name of a data set that you want the Export utility function to create.

If you are using a specific template or copybook for the “To” data set, specify the name of the template or copybook data set and, optionally, the member name, in the **To Copybook or Template** entry fields.

Use the **Processing Options** to select a number of options for the export process.

To proceed, press Enter.

If you selected **Edit options** (either by using a “/”, or by having previously used the “A” selection character for this option), the second of the Export Options panels is displayed.

If you selected **Edit template mapping** (either by using a “/”, or by having previously used the “A” selection character for this option), the Template Mapping panel is displayed for editing.

If you selected **Batch execution** (either by using a “/”, or by having previously used the “A” selection character for this option), the generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

## Copying data to a VSAM or QSAM file

If you selected options **3. Batch, using DB2 utility** and **Edit UNLOAD options** on the Export Options - (1 of 3) panel, before the generated JCL is displayed using the ISPF editor, the UNLOAD Options panel is displayed.

Otherwise, FM/DB2 exports the data from the “From” table to the “To” partitioned, sequential, or VSAM data set.

### RELATED TASKS

- “Specifying a data set and a member name” on page 34
- “Mapping data” on page 86
- “Exported data formats”
- “Running Export in batch” on page 230
- “Notes on using Export” on page 230

### RELATED REFERENCES

- “Export “To” panel” on page 609
- “Template Mapping panel” on page 783

## Exported data formats

You can export data in four pre-defined formats:

- DB2 (File Manager internal) format
- DB2 external (or unload) format
- DB2 DSNTIAUL unload format
- Comma-delimited format (CSV output)

and two formats that require user definition:

- A user-defined format
- Copybook layout format

The output format depends on which **Data format** option you selected on the Export Options - (2 of 3) panel:

To export data in DB2 (File Manager internal) format, specify option 1 (**FM/DB2 (SQLDA) format**).

To export data in DB2 external (or unload) format, specify option 2 (**DB2 unload format**).

To export data in DB2 DSNTIAUL unload format, specify option 3 (**DSNTIAUL format**).

To export data in user-defined format, specify option 4 (**User defined**).

To export data in comma-delimited format (CSV output), specify option 5 (**Delimited Variables (CSV)**).

The output format depends on which **Template usage** processing option you select.

To export data in DB2 (File Manager internal) format, specify **Template usage** option 3 (**Generate from input**) or option 4 (**Generate and save**) and export option 1 **FM/DB2 (SQLDA) format**. When you specify these options, FM/DB2 copies the output template from the input template, and exports the data in the format returned by DB2 if an SQLDA is used to access the result table. In this format, any nullable column is preceded by a 2-byte binary field containing the null indicator. If the “From” column has a null value, the null indicator field for the



corresponding "To" field contains -1, otherwise it contains 0. Each decimal field in the output data set occupies 16 bytes, with the data left-aligned followed by trailing binary zeros. Any graphic or vargraphic field is followed by two bytes containing binary zeros. Use this option if you plan to import the exported data into another DB2 table using Import (option 3.6).

To export data in DB2 unload format, specify Template usage option 3 (**Generate from input**) or option 4 (**Generate and save**) and select export option 2 **DB2 unload format**. The exported data is in the same format as that returned by the DB2 UNLOAD utility, with the NOPAD option not specified. In this format, any nullable column is preceded by a 1-byte binary field containing the null indicator. If the "From" column has a null value, the null indicator field for the corresponding "To" field contains X'FF', otherwise it contains 0. Any decimal field occupies the minimum number of bytes needed to represent the data as a packed decimal field. Variable length columns in the unloaded records are padded to their maximum length and the padded data fields are preceded by length fields that indicate the size of the actual data without the padding. CCSID conversion is not supported. The exported data will be in the CCSID used to bind the FM/DB2 plan.

To export data in DSNTIAUL format, specify Template usage option 3 (**Generate from input**) or option 4 (**Generate and save**), and select export option 3. **DSNTIAUL format**. In this format, any nullable column is followed by a 1-byte binary field containing the null indicator. If the "From" column has a null value, the null indicator field for the corresponding "To" field contains "?", otherwise it contains 0. Any decimal field occupies the minimum number of bytes needed to represent the data as a packed decimal field.

To export data in comma-delimited format (CSV output), specify **Template usage** option 5 (**None. CSV output**). If you specify this option, FM/DB2 does not generate an output template but writes the exported data as varying-length records, separated by a delimiter. For delimited format, FM/DB2 uses the **Null column display indicator** to indicate that data for a nullable column is the null value.

To export data in user-defined format, specify **Template usage** option 3 (**Generate from input**) or option 4 (**Generate and save**), and select export option 4. **User defined format**. For a user-defined format, FM/DB2 provides the following options for nullable columns:

- To use or not use nulls. In the latter case, there would be no fields in the exported data corresponding to the null indicator. Set Null Indicators Usage to 2. **None** on Export Options screen.
- To place the null indicator either before or after the data for the column to which it applies. Set Null Indicators Placement to 1. **Before** or 2. **After** on the Export Options screen.
- To use either a 1-byte (character format) or 2-byte (signed integer format) for the null indicator, set Null Indicators Type to 1. **One byte** or 2. **Two byte** on the Export Options screen. Set the value to be used in Indicator **Char** or **Integer**.

To export data in user-defined format, and to place either a 1-byte (character format) or a 2-byte (signed integer format) null indicator somewhere in the output record, but not before or after the data for the column to which it applies, select Null Indicators Placement to 3. **User defined** on the Export Options - (2 of 3) panel. You must provide a copybook and specify Template usage option 1 (**Above**) or 2 (**Previous**), and select **Edit template mapping** and map the null indicators. If the field names in the copybook are not the same as the DB2 column names, you will also need to map each DB2 column to the appropriate field in the copybook.



## Copying data to a VSAM or QSAM file

To export data in any other format, you must use a user-defined template. Specify **Template usage** option 1 (**Above**) to use the template you have specified in the **To Copybook or Template** section of the panel, or **Template usage** option 2 (**Previous**) to use the template last used for the table from which you are exporting data. If exporting columns that permit null values, FM/DB2 processes them as follows: if the field that corresponds to a nullable column is followed by an unmapped 2-byte binary field, FM/DB2 maps the null indicator for the column to this 2-byte binary field. In all other situations, FM/DB2 does not map the null indicator to any field in the output template.

### RELATED REFERENCES

“Editor Options (4 of 7) panel” on page 584

## Running Export in batch

If you want to export large DB2 tables, you can perform the export in a batch job.

If you select the **Batch execution** option on the Export Options (1 of 3) panel, the Export utility builds the necessary JCL to perform the export function in a batch job. The generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing. If you select the **Batch, using DB2 utility** option, the JCL is set up for the DB2 UNLOAD utility, and displayed for review before submission.

If you have one or more data sets that contain the template that describes the record structure of your input data, you can specify the data set details (or TSO ALLOC statement) in the generated JCL with the keywords TINPUT or TCIN.

Similarly, if you have one or more data sets that contain the template that describes the record structure of your output data, you can specify the data set details (or TSO ALLOC statement) in the generated JCL with the keywords TOUTPUT or TCOU.

If the export data set does not already exist, you are prompted to create it. However, you can defer the creation of the export data set until batch job execution time by selecting the **Batch data set creation** option. If you select this option, FM/DB2 creates a new sequential export data set in the JCL for the batch job.

### RELATED REFERENCES

“DBX (Export) batch command” on page 875

## Notes on using Export

The Export utility function provides one method for moving DB2 data between different DB2 sub-systems (that is, to export data from one DB2 sub-system and import it to another DB2 sub-system). If you want to move data between tables in the same DB2 sub-system, you might find it more convenient to use Copy (3.3), or move the data by direct execution of SQL statements.

In general terms, the Export utility function is suitable for extracting small to medium volumes of data from DB2 tables. It is not intended to serve as a substitute for the DB2 utilities if unloading or migrating large volumes of data. The DB2 utilities offer superior performance in these situations.

It is recommended that you run the Export utility in batch whenever possible.

The Export utility provides for automatic mapping of the DB2 null indicator. However, if Export Option Data format 4. User defined Null Indicators Placement 3. User defined is selected the template editor shows the null indicator as a separate item in the "From" template on the Field Mapping panel. It is therefore possible to re-map the null indicator associated with nullable columns to a field in the export data set. If you want to rearrange the data fields in the export data set, it is recommended that you first export the data using the default mapping and then use File Manager (base) to map the data to the required format.

A sample REXX exec is provided (in SFMNSAMP) which converts a FM/DB2 template generated by FM/DB2 into a COBOL or PL/I copybook.

To convert a FM/DB2 template generated by FM/DB2 into a COBOL or PL/I copybook, you specify a TSO command like the following:

```
FMN2CPYB input output language
```

where:

*input* The name of a sequential file or partitioned data set and member that contains a File Manager DB2 template.

*output* The name of a sequential file or partitioned data set and member that will contain the copybook.

*language*

Optional keyword that determines the type of copybook generated. Valid values are:

COBOL

PL/I

If not specified, a COBOL copybook is generated.

The sample REXX must be copied to a library in your SYSPROC or SYSEXEC concatenation. Alternatively, you can specify the library name containing the sample exec in the command.

### RELATED TASKS

"Copying data from one DB2 object to another" on page 195

Chapter 11, "Generating batch JCL for DB2 utility jobs," on page 281

Chapter 3, "Working with templates," on page 55

## Copying data from an FM/DB2 editor session, or from an SQL statement

Use the EXPORT primary command to write data from the current FM/DB2 editor session to an external file. Alternatively, you can re-execute the SQL statement that generated the data for the current FM/DB2 editor session and write rows for this select statement to an external file.

Data can be exported in the same data formats as for the Export utility (3.7).

During the export process, the Export Utility panel is optionally displayed. You enter the data format for the exported data on this panel.

The Export "To" panel is also optionally displayed. The Export "To" panel enables you to:

- Specify the name of the data set that will contain the exported data.

## Copying data from an FM/DB2 editor session, or from an SQL statement

- Specify the name of a data set that contains a template or copybook, that describes the exported data.
- Specify a processing option for the template data set.
- Specify a disposition option for the export data set.
- View and possibly change the export options.
- Use the template editor to display and possibly change the mapping between the source and data to be exported.

### RELATED REFERENCES

“Export Utility panel” on page 612

“Export “To” panel” on page 609

“Specifying details for the “From” data set” on page 202

“Specifying details for the “To” table” on page 198

“EXPORT primary command” on page 823

### Specifying the source for the exported data

You can specify the source for the exported data with the ALL, NX, X, or EX parameter to the EXPORT primary command.

When you specify this parameter, FM/DB2 copies all, or selected, rows in the current FM/DB2 editor session to the target data set.

If you omit this parameter, FM/DB2 re-executes the SQL statement that produced the data for the current FM/DB2 editor session. FM/DB2 exports the rows fetched by the SQL statement to the target data set, up to any row limit specified on the export options panel.

You can use the **Export Count** field on the Export Utility panel to limit the data loaded into the FM/DB2 editor, for large DB2 objects, or arbitrary select statements that generate large result tables. Issuing the EXPORT primary command without the ALL parameter enables all rows for the DB2 object, or result table from the arbitrary select statement, to be written to the export data set.

### RELATED REFERENCES

“EXPORT primary command” on page 823

“Export Utility panel” on page 612

### Specifying the format of the exported data

You can export data in a number of data formats (see “Exported data formats” on page 228).

You can specify the data format for the exported data as an optional parameter to the EXPORT primary command. When specified, the parameter overrides the current data format, as displayed on the Export Options (1 of 3) panel.

The possible parameter values are SQLDA, DB2, DSNTIAUL, USER, and CSV.

### RELATED REFERENCES

“EXPORT primary command” on page 823

“Export Options (1 of 3) panel” on page 602

### Limiting the rows exported with a label range

You can limit the rows processed to only those rows within a specified label range, rather than all rows in the FM/DB2 editor session.

## Copying data from an FM/DB2 editor session, or from an SQL statement

**Note:** You can only specify a label range if you have also specified the source parameter (ALL, NX, X, or EX).

You must specify a "from" label and a "to" label.

### RELATED REFERENCES

- "Assigning labels to rows" on page 116
- "EXPORT primary command" on page 823

### Differences compared with the export utility

The process for exporting data with the EXPORT primary command is similar to that for the Export utility function (3.7) with the following exceptions:

- The **Batch** and **Batch, using DB2 UNLOAD** execution options are not available when exporting data using the EXPORT primary command.
- The dialog commences with the optional display of the Export Options (1 of 3) panel. The Export Utility panel is not displayed.
- The data to be exported can be the result table for the SQL statement that generated the current FM/DB2 editor session, *or* rows from the current FM/DB2 editor session. In the former case, the SQL statement can refer to a DB2 object (for example, when entered using the Edit function), or an arbitrary SQL statement (for example, when entered using one of the SQL options 4.1, 4.2, 4.3 or 4.4). The arbitrary SQL statement can be any valid select statement, including joins of multiple tables, sub-selects, and so on. By contrast, the Export utility only allows export of data from a DB2 object (for example, table, view, alias).
- The export options panel includes an input field where the number of rows to be exported can be entered. This operates independently of any input field that limits the number of rows loaded into the FM/DB2 editor session. It is therefore possible to edit a few rows of a result table using FM/DB2 edit, and then export *all* the rows for that result table to a data set.

### RELATED REFERENCES

- "Export Options (1 of 3) panel" on page 602
- "Export Utility panel" on page 612
- "EXPORT primary command" on page 823

### Ways that you can use the EXPORT primary command

Here are two ways you can use the EXPORT primary command:

- To export data from an arbitrary SQL statement to an external file:
  1. Develop the SQL SELECT statement using options 4.1, 4.2, 4.3, or 4.4. The SQL statement can be any valid SQL statement, including joins of multiple tables, sub-selects, and so on.
  2. Use the row count field to limit the rows loaded into the FM/DB2 editor, if the result table is large.
  3. Confirm that the result table is correct by examining the data in the Edit session.
  4. Optionally edit the template and de-select any columns of the result table that are not required.
  5. Issue the EXPORT command without the ALL parameter, to export all rows from the result table of the arbitrary SQL statement to an external file.
- To export selected editor session rows to an external file:
  1. Ensure that the **Use edit (instead of browse) to display results** option is selected. This option is set using the FM/DB2 System Options (2 of 3) panel.

## Copying data from an FM/DB2 editor session, or from an SQL statement

2. Develop the SQL SELECT statement using options 4.1, 4.2, 4.3 or 4.4, or edit the required DB2 object using the FM/DB2 Edit utility.
3. Use editor commands to isolate the required data in either excluded, not excluded rows, label ranges, or some combination of these methods.
4. Issue the EXPORT primary command with the OPT parameter and one of ALL, X, or NX. Ensure that the required data format is selected. On the Export "To" panel, enter the required export data set name and set the disposition option to MOD.
5. After the initial export of rows to the export data set, isolate additional rows to be exported, then issue EXPORT QUIET plus a combination of ALL, X, or NX and optionally a label range, to export the additional rows. The MOD setting for the export file ensures that each additional EXPORT primary command adds the newly-exported rows to the end of the export data set.

---

## Scrambling data

Scrambling data allows you to create test data based on production (or "live") data, but with the ability to change the values of certain columns. In this way, you can avoid sensitive or confidential information appearing in test data.

### When can you scramble data?

When you copy data from one place to another with either the Copy Utility (option 3.3), Import Utility (option 3.6), or Export Utility (option 3.7), you can choose to scramble some or all of the columns being copied.

For scrambling to occur during the copy, import, or export process, you must supply an *output template* which has mapped fields *marked for scrambling*.

### Scrambling rules

FM/DB2 scrambles data according to these rules:

- If you do not specify any value or range options:
  - Uppercase alphabetic characters are scrambled to other uppercase alphabetic characters.
  - Lowercase alphabetic characters are scrambled to other lowercase alphabetic characters.
  - DBCS characters are scrambled to other DBCS characters.
  - Numerics are scrambled to other numerics.
  - Any other characters remain unchanged.
  - Repeatable scrambling produces unique results for numeric fields defined with **Leading zeros** set to YES, and all non-numeric fields.
- If you provide a value list, then the column is populated with a value from the list.
- If you provide a range, then the resultant number is in the range provided.
- If you specify a scramble type of random or repeatable and also the value option and a value data set, then the column is populated with a value from the data set.
- If you specify a scramble type of translate, then the input column value is matched and the corresponding output value is used from the value data set.

#### RELATED TOPICS

"Specifying scrambling options" on page 82

"Column Attributes panel (alphanumeric)" on page 407

"Column Attributes panel (numeric)" on page 412

“Value List Edit panel” on page 798

“Scramble Exit Specification panel” on page 722

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### How do I...?

If you want to copy data from one place to another, but are not sure of the best way of going about it, you may find the following sections helpful.

The sections below describe typical situations that you may encounter when planning to copy data. For each scenario, step-by-step instructions are included describing how to achieve the required result.

**Note:** In the following examples, “source table” refers to the table from which the data is exported, and “target table” refers to the table to which the data is imported.

### How do I copy data from one DB2 table to another on the same DB2 system?

**Scenario:** I have data in a DB2 table and want to copy it to another DB2 table. The source and target DB2 tables are on the same DB2 system.

Consider using the FM/DB2 Copy Utility (3.9), instead of the FM/DB2 Export Utility and the FM/DB2 Import Utility. If the source and target table have different column names, different numbers of columns, or if data type conversions are needed, you can use template re-mapping to map columns in the source table to columns in the target table. In most cases, FM/DB2 performs any data type conversions automatically.

#### RELATED TASKS

“Copying data from one DB2 object to another” on page 195

“Column mapping rules” on page 92

### How do I copy data from one DB2 table to another on a different (connectable) DB2 system?

**Scenario:** I have data in a DB2 table and want to copy it to another DB2 table. The source and target DB2 tables are on different DB2 systems. It is possible to connect to the target DB2 system from the source DB2 system by specifying a location value.

Consider using the FM/DB2 Copy Utility (3.9), instead of the FM/DB2 Export Utility and the FM/DB2 Import Utility. See “How do I copy data from one DB2 table to another on the same DB2 system?”. If a large number of rows are to be transferred, some caution needs to be exercised due to network considerations.

#### RELATED TASKS

“Copying data from one DB2 object to another” on page 195

“Column mapping rules” on page 92

### How do I copy data from one DB2 table to another on a different (non-connectable) DB2 system?

**Scenario:** I have data in a DB2 table and want to copy it to another DB2 table. The source and target DB2 tables are on different DB2 systems. It is not possible



## How do I...?

to connect to the target DB2 system from the source DB2 system by specifying a location value, or I want to transfer the data out of DB2 as part of the copy process.

To copy the data, you need to perform two steps:

1. Use the FM/DB2 Export Utility (3.7) to export the data to a sequential file (preferably) or a VSAM file. In general, the default mapping is sufficient. To use the default mapping, specify a template data set and member name on the Export “To” panel and select **Template usage** option 4 (Generate and save). If the amount of data to be transferred is large (more than 10,000 rows), run the export in batch by selecting **Batch execution**. If the amount of data to be transferred is very large (more than 100,000–1,000,000 rows), consider using the DB2 UNLOAD utility (accessed from Utilities, 3.9) instead.
2. Use the FM/DB2 Import Utility (3.6) to load the exported data into the target DB2 table. If the target table has different column names to the source table, or if data type conversions are required, use template re-mapping to map columns in the source table to columns in the target table. In most cases, FM/DB2 performs any data type conversions automatically.

### RELATED TASKS

- “Copying data to a VSAM or QSAM file” on page 223
- “Running Export in batch” on page 230
- “Copying data from a VSAM or QSAM file” on page 200
- “UNLOAD utility” on page 310
- “Column mapping rules” on page 92

### RELATED REFERENCES

- “Export “To” panel” on page 609

## How do I copy and reorder selected data from a DB2 table to a sequential file?

**Scenario:** I have data in a DB2 table and I want to copy it to a sequential file. I only want the data for some of the columns in the DB2 table, and I want the data for those columns reordered in the sequential data set.

The FM/DB2 Export Utility (3.7) supports the export of selected columns from a DB2 object. To export selected columns only, edit the template on the Export Utility panel and deselect the columns that are not required.

The FM/DB2 Export Utility does *not* support the reordering of columns in the export data set. The selected columns are always exported in the order in which they are defined in the DB2 catalog. There is a simple workaround for this. Create a view for the DB2 object to be exported, specifying the columns in the desired order. Then export data from the view, to achieve the desired result.

### RELATED TASKS

- “Copying data to a VSAM or QSAM file” on page 223
- “Mapping data” on page 86

### RELATED REFERENCES

- “Export Utility panel” on page 612

## How do I define a copybook that describes data exported to a sequential file?

**Scenario:** I have data in a DB2 table and I've used the FM/DB2 Export Utility to copy the data to a sequential file. I need to define a copybook that describes the exported data.

You need to code the copybook in either COBOL, HLASM, or PL/I. The amount of space required in the export data set for each of the DB2 data types is summarized in the following example:

- Suppose you want to export data from the table created using the following definition:

```
CREATE TABLE SAMPLE.EXPORT_EX
(COL1  INTEGER          NOT NULL
 ,COL2  SMALLINT        NOT NULL
 ,COL3  FLOAT(21)        NOT NULL
 ,COL4  FLOAT(53)        NOT NULL
 ,COL5  DECIMAL(1,0)     NOT NULL
 ,COL6  DECIMAL(15,7)    NOT NULL
 ,COL7  CHAR(10)         NOT NULL
 ,COL8  VARCHAR(10)      NOT NULL
 ,COL9  DATE             NOT NULL
 ,COL10 TIME             NOT NULL
 ,COL11 TIMESTAMP        NOT NULL
 ,COL12 ROWID GENERATED ALWAYS NOT NULL
)
```

A COBOL copybook that describes the exported data is as follows:

```
01  EXPORT-EXAMPLE.
*  INTEGER DATA TYPE
    10 COL1                PIC S9(6) USAGE COMP.
*  SMALLINT DATA TYPE
    10 COL2                PIC S9(4) USAGE COMP.
*  FLOATING POINT (4 BYTES) DATA TYPE
    10 COL3                USAGE COMP-1.
*  FLOATING POINT (8 BYTES) DATA TYPE
    10 COL4                USAGE COMP-2.
*  PACKED DECIMAL DATA TYPE
    10 COL5                PIC S9(1)V USAGE COMP-3.
    10 FILLER              PIC X(15).
*  PACKED DECIMAL DATA TYPE
    10 COL6                PIC S9(8)V9(7) USAGE COMP-3.
    10 FILLER              PIC X(8).
*  CHARACTER DATA TYPE
    10 COL7                PIC X(10).
*  VARCHAR DATA TYPE
    10 COL8.
        49 COL8-LEN        PIC S9(4) USAGE COMP.
        49 COL8-TEXT      PIC X(10).
*  DATE DATA TYPE
    10 COL9                PIC X(10).
*  TIME DATA TYPE
    10 COL10               PIC X(8).
*  TIMESTAMP DATA TYPE
    10 COL11               PIC X(26).
*  ROWID DATA TYPE
    10 COL12.
        49 COL12-LEN      PIC S9(4) USAGE COMP.
        49 COL12-TEXT    PIC X(40).
```

In HLASM, the copybook looks like this:



## How do I...?

```
EXAMPLE DSECT
* Integer data type
COL1 DS F
* Smallint data type
COL2 DS H
* Floating point (4 bytes) data type
COL3 DS E
* Floating point (8 bytes) data type
COL4 DS D
* Packed decimal data type (1 byte)
COL5 DS PL1
* Packed decimal data type (8 bytes)
COL6 DS PL8
* Character data type
COL7 DS CL10
* VARCHAR data type
COL8_LEN DS H
COL8_TXT DS CL10
* DATE data type
COL9 DS CL10
* TIME data type
COL10 DS CL8
* TIMESTAMP data type
COL11 DS CL26
* ROWID data type
COL12_LEN DS H
COL12_TXT DS CL40
END
```

In PL/I, the copybook looks like this:

```
DCL 1 EXPORT_EXAMPLE UNALIGNED,
/* INTEGER DATA TYPE */
2 COL1 BIN(31,0),
/* SMALLINT DATA TYPE */
2 COL2 BIN(15,0),
/* FLOATING POINT (4 BYTES) DATA TYPE */
2 COL3 FLOAT,
/* FLOATING POINT (8 BYTES) DATA TYPE */
2 COL4 FLOAT(8),
/* PACKED DECIMAL DATA TYPE */
2 COL5 FIXED DEC(1,0),
2 COL5_PAD CHAR(15),
/* PACKED DECIMAL DATA TYPE */
2 COL6 FIXED DEC(15,7),
2 COL6_PAD CHAR(8),
/* CHARACTER DATA TYPE */
2 COL7 CHAR(10),
/* VARCHAR DATA TYPE */
2 COL8,
3 COL8_LEN BIN(15,0),
3 COL8_TEXT CHAR(10),
/* DATE DATA TYPE */
2 COL9 CHAR(10),
/* TIME DATA TYPE */
2 COL10 CHAR(8),
/* TIMESTAMP DATA TYPE */
2 COL11 CHAR(26),
/* ROWID DATA TYPE */
2 COL12,
3 COL12_LEN BIN(15,0),
3 COL12_TEXT CHAR(40);
```

Note the following:

<b>DB2 data type</b>	Space in exported data set.
<b>INTEGER</b>	4 bytes.

<b>SMALLINT</b>	2 bytes.
<b>REAL (4 bytes)</b>	4 bytes.
<b>FLOAT (8 bytes)</b>	8 bytes.
<b>PACKED DECIMAL</b>	16 bytes in total. The data is left-aligned. The unused bytes contain binary zeros. A $\text{DECIMAL}(n,m)$ field occupies $\text{TRUNC}(n/2) + 1$ bytes within the 16-byte field.
<b>CHAR(<i>n</i>)</b>	<i>n</i> bytes.
<b>VARCHAR(<i>n</i>)</b>	<i>n</i> +2 bytes. The data is preceded by a 2-byte binary field, containing the number of characters in the VARCHAR field.
<b>DATE</b>	10 bytes. See note 1.
<b>TIME</b>	8 bytes. See note 1.
<b>TIMESTAMP</b>	26 bytes.
<b>ROWID</b>	42 bytes. Define a ROWID column as for a VARCHAR(40) column.

**Notes:**

1. The length required for DATE and TIME fields may vary if a date or time exit is in use.
- If the DB2 table has columns that allow nulls and was created using the following definition:

```
CREATE TABLE SAMPLE.EXPORT_EX_NULL
(COL1    INTEGER
 ,COL2    SMALLINT
 ,COL3    FLOAT(21)
 ,COL4    FLOAT(53)
 ,COL5    DECIMAL(1,0)
 ,COL6    DECIMAL(15,7)
 ,COL7    CHAR(10)
 ,COL8    VARCHAR(10)
 ,COL9    DATE
 ,COL10   TIME
 ,COL11   TIMESTAMP
 ,COL12   ROWID  GENERATED ALWAYS NOT NULL
)
```

A COBOL copybook that describes the exported data is as follows:

```
01 EXPORT-EXAMPL2.
* INTEGER DATA TYPE WITH NULL INDICATOR
  10 COL1=NULL          PIC S9(4) USAGE COMP.
  10 COL1                PIC S9(6) USAGE COMP.
* SMALLINT DATA TYPE WITH NULL INDICATOR
  10 COL2=NULL          PIC S9(4) USAGE COMP.
  10 COL2                PIC S9(4) USAGE COMP.
* FLOATING POINT (4 BYTES) DATA TYPE WITH NULL INDICATOR
  10 COL3=NULL          PIC S9(4) USAGE COMP.
  10 COL3                USAGE COMP-1.
* FLOATING POINT (8 BYTES) DATA TYPE WITH NULL INDICATOR
  10 COL4=NULL          PIC S9(4) USAGE COMP.
  10 COL4                USAGE COMP-2.
* PACKED DECIMAL DATA TYPE WITH NULL INDICATOR
  10 COL5=NULL          PIC S9(4) USAGE COMP.
  10 COL5                PIC S9(1)V USAGE COMP-3.
  10 FILLER              PIC X(15).
* PACKED DECIMAL DATA TYPE WITH NULL INDICATOR
```

## How do I...?

```
10 COL6=NULL          PIC S9(4) USAGE COMP.
10 COL6               PIC S9(8)V9(7) USAGE COMP-3.
10 FILLER             PIC X(8).
* CHARACTER DATA TYPE WITH NULL INDICATOR
10 COL7=NULL          PIC S9(4) USAGE COMP.
10 COL7               PIC X(10).
* VARCHAR DATA TYPE WITH NULL INDICATOR
10 COL8=NULL          PIC S9(4) USAGE COMP.
10 COL8.
49 COL8-LEN           PIC S9(4) USAGE COMP.
49 COL8-TEXT          PIC X(10).
* DATE DATA TYPE WITH NULL INDICATOR
10 COL9=NULL          PIC S9(4) USAGE COMP.
10 COL9               PIC X(10).
* TIME DATA TYPE WITH NULL INDICATOR
10 COL10=NULL         PIC S9(4) USAGE COMP.
10 COL10              PIC X(8).
* TIMESTAMP DATA TYPE WITH NULL INDICATOR
10 COL11=NULL         PIC S9(4) USAGE COMP.
10 COL11              PIC X(26).
* ROWID DATA TYPE
10 COL12.
49 COL12-LEN          PIC S9(4) USAGE COMP.
49 COL12-TEXT         PIC X(40).
```

In HLASM, the copybook looks like this:

```
EXAMPLE2 DSECT
* Integer data type with null indicator
COL1_NI DS H
COL1 DS F
* Smallint data type with null indicator
COL2_NI DS H
COL2 DS H
* Floating point (4 bytes) data type with null indicator
COL3_NI DS H
COL3 DS E
* Floating point (8 bytes) data type with null indicator
COL4_NI DS H
COL4 DS D
* Packed decimal data type (1 byte) with null indicator
COL5_NI DS H
COL5 DS PL1
* Packed decimal data type (8 bytes) with null indicator
COL6_NI DS H
COL6 DS PL8
* Character data type with null indicator
COL7_NI DS H
COL7 DS CL10
* VARCHAR data type with null indicator
COL8_NI DS H
COL8_LEN DS H
COL8_TXT DS CL10
* DATE data type with null indicator
COL9_NI DS H
COL9 DS CL10
* TIME data type with null indicator
COL10_NI DS H
COL10 DS CL8
* TIMESTAMP data type with null indicator
COL11_NI DS H
COL11 DS CL26
* ROWID data type
COL12_LEN DS H
COL12_TXT DS CL40
END
```

In PL/I, the copybook looks like this:

```

DCL 1 EXPORT_EXAMPLE UNALIGNED,
/* INTEGER DATA TYPE WITH NULL INDICATOR */
    2 COL1_NULL      BIN(15,0),
    2 COL1            BIN(31,0),
/* SMALLINT DATA TYPE WITH NULL INDICATOR */
    2 COL2_NULL      BIN(15,0),
    2 COL2            BIN(15,0),
/* FLOATING POINT (4 BYTES) DATA TYPE WITH NULL INDICATOR */
    2 COL3_NULL      BIN(15,0),
    2 COL3            FLOAT,
/* FLOATING POINT (8 BYTES) DATA TYPE WITH NULL INDICATOR */
    2 COL4_NULL      BIN(15,0),
    2 COL4            FLOAT(8),
/* PACKED DECIMAL DATA TYPE WITH NULL INDICATOR */
    2 COL5_NULL      BIN(15,0),
    2 COL5            FIXED DEC(1,0),
    2 COL5_PAD        CHAR(15),
/* PACKED DECIMAL DATA TYPE WITH NULL INDICATOR */
    2 COL6_NULL      BIN(15,0),
    2 COL6            FIXED DEC(15,7),
    2 COL6_PAD        CHAR(8),
/* CHARACTER DATA TYPE WITH NULL INDICATOR */
    2 COL7_NULL      BIN(15,0),
    2 COL7            CHAR(10),
/* VARCHAR DATA TYPE WITH NULL INDICATOR */
    2 COL8_NULL      BIN(15,0),
    2 COL8,
        3 COL8_LEN      BIN(15,0),
        3 COL8_TEXT     CHAR(10),
/* DATE DATA TYPE WITH NULL INDICATOR */
    2 COL9_NULL      BIN(15,0),
    2 COL9            CHAR(10),
/* TIME DATA TYPE WITH NULL INDICATOR */
    2 COL10_NULL     BIN(15,0),
    2 COL10           CHAR(8),
/* TIMESTAMP DATA TYPE WITH NULL INDICATOR */
    2 COL11_NULL     BIN(15,0),
    2 COL11           CHAR(26),
/* ROWID DATA TYPE */
    2 COL12,
        3 COL12_LEN     BIN(15,0),
        3 COL12_TEXT    CHAR(40);

```

The only difference between the first and second set of definitions is the addition of a 2-byte binary field immediately prior to the column definition for those columns that allow DB2 null values.

#### RELATED TASKS

“Copying data to a VSAM or QSAM file” on page 223

“Using templates with non-DB2 data” on page 58

#### RELATED REFERENCES

“Export Utility panel” on page 612

## How do I export data using a copybook that describes a different data format to that used by the FM/DB2 Export Utility?

**Scenario:** I have data in a DB2 table. I want to export data using a copybook that I have defined, but the copybook describes a different data format to that used by the FM/DB2 Export Utility.

## How do I...?

You need to code the copybook in either COBOL, HLASM, or PL/I. When you perform the export with the FM/DB2 Export Utility (3.7), enter the name of the data set that contains the copybook in the **To Copybook or Template** section on the Export “To” panel. Set the **Template usage** processing option to 1 (Above). If you specify 4 (Generate and save), your copybook will be overwritten. If you have renamed the fields in the copybook, or if data type conversions are required, use template re-mapping to map columns in the source table to fields in the target data set.

If the DB2 data contains one or more nullable columns, you are restricted in the processing for the DB2 null indicator. If you need the DB2 null indicator in the exported data, you *must* include a 2-byte binary field immediately after the definition for the field in the template that corresponds to the column.

For example, for a CHAR(10) field that allows for the DB2 null value, you would code:

```
* CHARACTER DATA TYPE
   10 COL7                PIC X(10).
   10 COL7-NULL           PIC S9(4) USAGE COMP.
```

In addition, the 2-byte field must be un-mapped when the export begins. In other words, you must not map a column of the table to this field using template re-mapping; if you do, the FM/DB2 Export Utility does not include the null indicator for the column in the exported data set.

If you want the DB2 null indicator mapped to a different position in the export data set, or you want the DB2 null indicator converted into a different data type, you can:

1. Export the data using either the default mapping, or using a user-defined copybook that includes fields defined for the DB2 null indicators as described above.
2. Create a template that describes the final data format.
3. Use File Manager “base” to copy the data from the export data set into the final format. You may need to use REXX to convert the DB2 null indicators (and possibly other data values) as part of the copy process.

### RELATED TASKS

“Copying data to a VSAM or QSAM file” on page 223

“Using templates with non-DB2 data” on page 58

### RELATED REFERENCES

“Export “To” panel” on page 609

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## Chapter 8. Working with lists of DB2 objects

If you want to look at a group of DB2 objects, you can use the Object List utility (3.4) to list or print the objects in which you're interested.

You can use the Object List utility to specify:

- Whether you want the list of objects displayed or printed.
- The type of object you want listed or printed.
- Criteria to restrict the objects listed or printed.
- Options to apply when processing the listed objects.

To display the Object List Utility panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 4 (Object List)

Now that you have the Object List Utility panel displayed, you can start specifying the sorts of DB2 objects you want to display or print.

### Notes:

1. One of the options available at the time of installing FM/DB2 allows for views on DB2 catalog tables to be created for those tables accessed by FM/DB2. The set of views includes only those columns within the tables that are needed by FM/DB2.

If this option has been used at installation, it may affect the results obtained when you use the Object List utility. When FM/DB2 accesses a view, it shows only the columns of the view, rather than the columns of the table. If there are fewer columns in the view than the underlying table, the information displayed is incomplete.

2. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.

When you select this option, any display of catalog table information includes every available column, including any columns marked as "unused" or "internal use only" in the *DB2 UDB for z/OS SQL Reference*.

The default for this option is not selected. Selecting this option overrides any settings for the **Show "unused" catalog table columns** and **Show "internal use only" catalog table columns** options.

### RELATED TASKS

"Working with object list panels" on page 246

"Displaying or printing a list of objects" on page 244

### RELATED REFERENCES

"Primary Option Menu panel" on page 670

"Object List Utility panel" on page 663

"Utility Functions panel" on page 797

"Editor Options (3 of 7) panel" on page 579

### Displaying or printing a list of objects

To display or print a list of objects:

1. Specify object identification criteria to identify the objects you want listed:

<b>Location</b>	<p>The location of the objects you want listed.</p> <p>Leave this field blank if the objects you want listed are at your current location. Otherwise, type the full name of the remote location, an asterisk (*) to display all available remote locations, or a pattern using wildcard characters. If you specify an asterisk on its own or a pattern, FM/DB2 displays a selection list showing the locations that match the input specification.</p> <p>To select the location you want, type S against the required entry and press Enter.</p>
<b>Owner</b>	<p>The name of the person who created the DB2 object.</p> <p>To select objects regardless of their owner, leave this field blank. Otherwise, to restrict the list of objects by owner, type either the full name of the owner or a pattern using wildcard characters. If this entry field is not blank, FM/DB2 limits the objects listed to those matching the owner selection criteria you specify.</p>
<b>Name</b>	<p>The name of the DB2 object.</p> <p>To select objects regardless of their name, leave this field blank. Otherwise, to restrict the list of objects by name, type either the full name of the object or a pattern using wildcard characters. If this entry field is not blank, FM/DB2 limits the objects listed to those matching the name selection criteria you specify.</p>
<b>Database/collect/schema</b>	<p>The name of a database, a collection, or a schema. The name can be a full name or a pattern. This name is used to restrict the list of objects to only those objects that are in the specified database, collection, or schema. If you specify a pattern, the list of objects includes any objects that are included in a database or collection or schema whose name matches the pattern specification.</p>

The way in which FM/DB2 uses this field depends upon the type of object being listed as specified using the **Object Type** (see step 3 on page 245):

<b>Object type</b>	<b>Field use</b>
<b>Database</b>	Not allowed
<b>Table space</b>	Used as database name
<b>Table, view, or alias</b>	Used as database name
<b>Index</b>	Used as database name
<b>Column</b>	Used as database name
<b>Synonym</b>	Used as database name
<b>Plan</b>	Not allowed
<b>Package</b>	Used as collection name
<b>Collection</b>	Not allowed
<b>DBRM</b>	Not allowed
<b>Schema</b>	Used as schema name
<b>Distinct type</b>	Used as schema name
<b>Function</b>	Used as schema name

**Stored procedure**

Used as schema name

**Trigger**

Used as schema name

2. Specify any additional selection criteria to further restrict the objects to be listed by coding a simple SQL SELECT “where clause” that specifies a column in the appropriate DB2 system catalog table.

**Column** Name of column in the relevant DB2 system catalog table. To list the columns in the appropriate DB2 system catalog table, enter an asterisk (\*).

**Operator** A valid SQL operator.

**Value** The value to be compared with the contents of the column.

For further information about SQL statements, see the *DB2 UDB for z/OS SQL Reference*.

For example, to restrict a list of columns to only those columns with a data type of DATE, specify the following values:

Additional Selection Criteria:

Column . . . . . COLTYPE \_\_\_\_\_ Enter \* to list catalog columns

Operator . . . . . = \_\_\_\_\_

Value . . . . . 'DATE' \_\_\_\_\_

3. Nominate the type of object you want listed, and other options to apply to processing of the listed objects.

### Object Type

Specify the type of DB2 object that you want listed. The numeric indicator for each object type is shown on the Object List Utility panel. This input field is mandatory, but defaults to “3” (Table/view/alias).

### Confirm DB2 Object Drop

Indicates if you want FM/DB2 to display a confirmation panel each time you enter a DR(op) command against an object.

/ Display a confirmation panel if a DROP command is entered against an object. This is the default setting.

(blank) If a DROP command is entered against an object, issue the command without displaying a confirmation panel.

4. Specify if you want to display or print the list of objects:
  - To display a list of objects, leave the command line blank.
  - To print a list of objects, enter P on the command line.

5. Press Enter.

FM/DB2 displays or prints the object list panel for the type of object you have specified.

### RELATED TASKS

“Using an asterisk (\*) or a pattern in entry fields” on page 32

### RELATED REFERENCES

“Remote DB2 Location Selection panel” on page 702



## Working with object list panels

After you have completed the necessary steps to display a list of objects, FM/DB2 displays the object list panel for the corresponding object type.

The following pages describe the features that are common to all object list panels.

Figure 52 shows the areas of a typical object list panel.

Process		Options		Utilities		Help		A	
FM/DB2 (DFA2)					Databases				
Location:					Format TABL				
SEL	DATABASE NAME	DATABASE CREATOR	STORAGE GROUP NAME	BUFFER POOL NAME	INTERNAL DATABASE IDENTIFIER	AUTHID THAT CREATED	TYPE OF DATABASE	B	
	* C	*	*	*	*	*	*		
	#1--+-	#2--+-	#3--+-	#4--+-	#5	#7--+-	#20--+-	D	
****	Top of data ****								
E	ABC	KEISTE2	DDDDDDDDDD	BP0		270	KEISTE2		
	DSN8D81A	JCULLEN	DSN8G810	BP0		259	JCULLEN		
	DSN8D81P	JCULLEN	DSN8G810	BP0		260	JCULLEN		
	DSNATPDB	JCULLEN	SYSDEFLT	BP0		257	JCULLEN		
	DSNDB04	SYSIBM	SYSDEFLT	BP0		4	SYSIBM		
	DSNDB06	SYSIBM				6	SYSIBM		
	DSNDB07	JCULLEN	SYSDEFLT	BP0		7	JCULLEN	WORKFILE	
	DSNRGfdb	JCULLEN	SYSDEFLT	BP0		258	JCULLEN		
	DSNRLST	JCULLEN	SYSDEFLT	BP0		256	JCULLEN		
	JLV3D81A	KEISTEW	JLV3G810	BP0		266	KEISTEW		
	JLV3D81P	KEISTEW	JLV3G810	BP0		267	KEISTEW		
	JOHND81P	KEISTEW	JOHNG810	BP0		265	KEISTEW		
	KPS8D81A	KEISTEW	KPS8G810	BP0		268	KEISTEW		
	KPS8D81P	KEISTEW	KPS8G810	BP0		269	KEISTEW		
	KPSAD81A	KEISTEW	KPSAG810	BP0		262	KEISTEW		
	KPSAD81P	KEISTEW	KPSAG810	BP0		263	KEISTEW		
	RFM0133	KEISTEW	SYSDEFLT	BP0		261	KEISTEW		
****	End of data ****								
F									
Command ==> G									
F1=Help		F2=Zoom		F3=Exit		F4=CRetriev		F5=RFind	
F7=Up		F8=Down		F9=Swap		F10=Left		F11=Right	
					Scroll PAGE				
					F6=RChange				
					F12=Cancel				

Figure 52. Layout of a typical object list panel

- A** **Action bar.** The action bar choices for the object list panels function.
- B** **Column heading lines.** Shows the name of the column of data shown below. A plus sign ("+"), minus sign ("-"), or both ("+-") indicates that the column is scrollable and may contain more data than is currently displayed.
- C** **Filter line.** This is where you can specify a filter string for one or more columns to limit the information FM/DB2 displays.
- D** **Operator line.** This is where you can specify an operator for one or more columns to work in conjunction with the corresponding filter pattern.
- E** **Line command area.**
- F** **End of data marker.** This marker line indicates the end of the data returned from FM/DB2.
- G** **Command line.** On this line you can specify any DB2 command, ISPF command, or FM/DB2 primary command.

## RELATED TASKS

- “Displaying or printing a list of objects” on page 244
- “Working with scrollable display fields” on page 26
- “Limiting the data displayed”
- “Using the line command area (Cmd)” on page 251
- “Sorting the displayed data” on page 259

## RELATED REFERENCES

- “Collections panel” on page 405
- “Columns panel” on page 423
- “Databases panel” on page 538
- “Database Request Modules panel” on page 536
- “Distinct Types panel” on page 565
- “Functions panel” on page 632
- “Indexes panel” on page 645
- “Application Packages panel” on page 395
- “Application Plans panel” on page 397
- “Schemas panel” on page 721
- “Stored Procedures panel” on page 754
- “Synonyms panel” on page 756
- “Tables, Views and Aliases panel” on page 776
- “Table Spaces panel” on page 768
- “Triggers panel” on page 785

## Limiting the data displayed

You can limit the data that FM/DB2 displays by “filtering out” the data you do not want displayed.

To filter the data, use:

- The *filter line* to specify a filter pattern for one or more columns
- And, optionally, the *operator line* to specify an operator to work in conjunction with the corresponding filter pattern.

### Using the filter line

On the filter line, the asterisk (\*) under a column heading marks an area where you can enter a filter pattern to limit the data displayed. You can specify filter patterns for more than one column if necessary.

For alphanumeric columns, the asterisk is displayed in the leftmost position. For numeric columns, the asterisk is displayed in the rightmost position.

In the filter pattern area, use:

- An asterisk (\*) on its own to match all values, or
- A filter pattern using wildcard characters to select only those objects that match the pattern.

You can specify a filter pattern using any of the following special characters:

<b>asterisk (*)</b>	Represents a string of zero or more characters. Acts the same as a percent sign (%).
<b>percent sign (%)</b>	Represents a string of zero or more characters. Acts the same as an asterisk (*).
<b>underscore (_)</b>	Represents any single character, excluding a trailing blank.

## Working with object list panels

When you specify a filter pattern for a column, FM/DB2 only selects objects where the contents of that column match the specified filter pattern.

**Note:** If you have also specified an operator (on the operator line) for the column, FM/DB2 uses the operator in conjunction with the filter pattern to match objects (see following section).

For alphanumeric columns, FM/DB2 matches the filter pattern you enter with the *leading* characters of the contents of the column for each row. That is, the filter pattern DEF matches 'DEF' and 'DEFG', but not 'CDEF'.

For numeric columns, FM/DB2 matches the filter pattern you enter with the *value* of the contents of the column for each row. That is, the search argument 7 matches columns containing 7 but not, for example, 70 or 17.

The following examples show how you can use filter patterns to limit the data FM/DB2 displays. (In the examples shown, it is assumed no operator has been specified in the corresponding area on the operator line.)

Pattern filter	Selects objects where column contains...
*	Any alphanumeric string
ABC*	Any alphanumeric string starting with "ABC"
*ABC*	Any alphanumeric string containing the string "ABC"
A__C	Any four-character alphanumeric string where the first character is "A" and the last character is "C"
%BC_	Any alphanumeric string containing the string "BC" followed by one more character
123	For numeric columns: the value 123
23	For numeric columns: the value 23

### Using the operator line

You use the operator line to specify an operator that FM/DB2 uses in conjunction with the filter pattern specified in the corresponding area on the filter line. You can specify operators for more than one column if necessary. Normally, you only specify an operator for a column where you have also specified a filter pattern.

To enter an operator in the operator line, type the required operator anywhere within the operator area for the required column. Processing occurs left to right. FM/DB2 only recognizes the first operator encountered and any other characters entered in the operator field are ignored. For example, if you type "=>" in the operator field, FM/DB2 treats it as "=", and ignores the ">".

To remove an operator, overwrite the operator with a space.

You can use any of the following operators:

- Blank** Means "like". Any \*, %, or \_ characters in the corresponding filter pattern are treated as special characters. A match occurs if the filter pattern matches the data after considering any special characters.
- ! (or) ~** Means "not like". Any \*, %, or \_ characters in the corresponding filter pattern are treated as special characters. A match occurs if the filter pattern does not match the data after considering any special characters.
- =** Means "equals". For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*,

%, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

**!=, !=, (or) <>**

Means “not equals”. For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*, %, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

**<**

Means “less than”. For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*, %, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

**<=, !>, (or) ~>**

Means “less than or equal to”. For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*, %, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

**>=, !<, (or) ~<**

Means “greater than or equal to”. For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*, %, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

**>**

Means “greater than”. For numeric data types, special characters in the corresponding filter pattern are not allowed. For non-numeric data types, \*, %, and \_ characters are allowed but are not treated as special characters. \*, %, and \_ characters match themselves only.

You can also enter the following commands in the operator field for a column:

- X** Excludes the column from the data display. The effect is the same as editing the template and de-selecting the column, followed by a re-display of the data.
- W\*** Resets the display width for the column to the maximum value for the column. The command is only effective when entered against a column that has a non-numeric data type.
- Wnnn** Sets the display width for the column to *nnn* (*nnn* must be an integer between 6 and the maximum possible display width for the column). The command is only effective when entered against a column that has a non-numeric data type.

When you specify an operator for a column, FM/DB2 first applies the operator to the corresponding filter pattern and then only selects objects where the contents of that column match the resultant filter pattern.

The following examples show how you can use operators, in conjunction with filter patterns, to limit the data FM/DB2 displays.

<b>Pattern filter (operator)</b>	<b>Selects objects where column...</b>
<b>ABC* (blank)</b>	Contains any alphanumeric string starting with “ABC”
<b>ABC* (=)</b>	Contains the string “ABC*”
<b>ABC* (~)</b>	Does not contain the string “ABC*”
<b>A (&gt;)</b>	Contains an alphanumeric string whose first character is greater than “A”

## Working with object list panels

A_C (→)	Contains an alphanumeric string whose first three characters are less than or equal to the string "A_C"
123 (=)	For numeric columns: contains the value 123
23 (<)	For numeric columns: contains a value less than 23

Let's take an example. Figure 52 on page 246 shows a list of database object types. To limit the columns displayed to those where:

- The database creator is KEISTEW
- The storage group name starts with the letter K
- The internal database identifier is greater than 264

enter the following filter patterns and operators:

1. Under the column heading, **DATABASE CREATOR**, type KEISTEW on the filter line.
2. Under the column heading, **STORAGE GROUP NAME**, type K\* on the filter line.
3. Under the column heading, **INTERNAL DATABASE IDENTIFIER**, type 264 on the filter line and > on the operator line.

Process	Options	Utilities	Help
FM/DB2 (DFA2)			
Location: Databases			
			Format TABL
SEL	DATABASE NAME	DATABASE CREATOR	STORAGE GROUP NAME
	*	KEISTEW	K*
			INTERNAL DATABASE IDENTIFIER
			264
			>
			AUTHID
			*
			TYPE OF DATABASE
			*
----	#1--+	#2--+	#3--+-1- #4--+
----	#7--+	#20--+	
****	Top of data	****	
----	ABC	KEISTE2	DDDDDDDDDD BP0 270 KEISTE2
----	DSN8D81A	JCULLEN	DSN8G810 BP0 259 JCULLEN
----	DSN8D81P	JCULLEN	DSN8G810 BP0 260 JCULLEN
----	DSNATPDB	JCULLEN	SYSDEFLT BP0 257 JCULLEN
----	DSNDB04	SYSIBM	SYSDEFLT BP0 4 SYSIBM
----	DSNDB06	SYSIBM	SYSDEFLT BP0 6 SYSIBM
----	DSNDB07	JCULLEN	SYSDEFLT BP0 7 JCULLEN WORKFILE
----	DSNRGfdb	JCULLEN	SYSDEFLT BP0 258 JCULLEN
----	DSNRLST	JCULLEN	SYSDEFLT BP0 256 JCULLEN
----	JLV3D81A	KEISTEW	JLV3G810 BP0 266 KEISTEW
----	JLV3D81P	KEISTEW	JLV3G810 BP0 267 KEISTEW
----	JOHND81P	KEISTEW	JOHNG810 BP0 265 KEISTEW
----	KPS8D81A	KEISTEW	KPS8G810 BP0 268 KEISTEW
----	KPS8D81P	KEISTEW	KPS8G810 BP0 269 KEISTEW
----	KPSAD81A	KEISTEW	KPSAG810 BP0 262 KEISTEW
----	KPSAD81P	KEISTEW	KPSAG810 BP0 263 KEISTEW
----	RFM0133	KEISTEW	SYSDEFLT BP0 261 KEISTEW
****	End of data	****	
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel
			Scroll PAGE

Figure 53. Object list: databases

4. Press Enter. A list of database object types is displayed, restricted to the search criteria you specified:

<u>Process</u>		<u>Options</u>	<u>Utilities</u>	<u>Help</u>			
FM/DB2 (DFA2)			Databases				
Location:			Format <u>TABL</u>				
	DATABASE	DATABASE	STORAGE	BUFFER	INTERNAL	AUTHID	
SEL	NAME	CREATOR	GROUP	POOL	DATABASE	THAT	TYPE OF
	*	KEISTEW	K*	*	264	*	*
----	#1--+-	#2--+-	#3--+-	#4--+-	>---#5	#7--+-	#20--+-
****	Top of data		****				
	KPS8D81A	KEISTEW	KPS8G810	BP0	268	KEISTEW	
	KPS8D81P	KEISTEW	KPS8G810	BP0	269	KEISTEW	
****	End of data		****				
Command ==>						Scroll PAGE	
F1=Help	F2=Zoom		F3=Exit	F4=CRetrie	F5=RFind	F6=RChange	
F7=Up	F8=Down		F9=Swap	F10=Left	F11=Right	F12=Cancel	

Figure 54. Object List: databases (list restricted using filter patterns and operators)

## Locating a row or column in a list of DB2 objects

When you display data with the Object List utility, you can use the LOCATE primary command to locate either a row or a column in a similar way to when you are viewing data with FM/DB2 View or Edit.

### RELATED REFERENCES

- “Locating a row” on page 109
- “Locating a column” on page 110
- “LOCATE primary command” on page 836

## Finding a string in a list of DB2 objects

When you display data with the Object List utility, you can use the FIND primary command to find a specific string in a similar way to when you are viewing data with FM/DB2 View or Edit.

### RELATED REFERENCES

- “Finding a string” on page 113
- “FIND primary command” on page 825

## Using the line command area (Cmd)

In the line command area (under the heading **Cmd**) for a listed object, you can enter a line command or one of the general line commands (?, =, or ROW).

### Line command

Table 20 on page 252 shows the line commands you can use with each type of object.

Table 20. Object list line commands

Command	Description	Database	Table space	Table/View	Index	Column	Synonym	Plan	Package	Collection	DBRM	Schema	Distinct Type	Function	Procedure	Trigger	Storage Group	Sequence
A	Alter an object.	✓	✓	✓	✓									✓	✓			
ADD	Add table check constraint.		✓ <sup>1</sup>															
ALS	Show aliases of an object.			✓														
AT	Show auxiliary tables for LOB columns.			✓		✓												
B	Browse the object.			✓			✓ <sup>7</sup>				✓							
BI	Bind the object.							✓										
BT	Show base table for auxiliary table.			✓														
C	Copy table.			✓			✓ <sup>7</sup>											
CBI	Copy and bind the object.							✓										
CDI	Show column distribution statistics (as generated by RUNSTATS).			✓														
CH	Show child (dependent) tables.			✓														
CHR	Show child relationships (referential constraints).			✓														
CK	Show information about table check constraints.			✓														
COL	Show the columns for the object.			✓	✓	✓ <sup>2</sup>												
COM	Comment on an object.			✓	✓	✓							✓	✓	✓			
CR	Create an object like this object.	✓	✓	✓	✓		✓						✓	✓	✓	✓	✓	✓
CRA	Create an alias for an object.			✓			✓											
CRS	Create a table space in the database.	✓																
CRT	Create a table in the table space.		✓															
CRX	Create an index.			✓														
CS	Describe the columns for an object (abbreviation of information provided by COL command).			✓														
D	Show the database for an object.	✓ <sup>2</sup>	✓	✓	✓												✓	
DEP	Show the dependencies on an object.			✓ <sup>1</sup>				✓										✓

Table 20. Object list line commands (continued)

Command	Description	Database	Table space	Table/View	Index	Column	Synonym	Plan	Package	Collection	DBRM	Schema	Distinct Type	Function	Procedure	Trigger	Storage Group	Sequence
DI	Display distribution statistics of a column.	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	
DR	Drop the object/constraint.	✓	✓	✓	✓		✓							✓	✓	✓	✓	
DS	Display the database structure.	✓	✓															
DT	Show the source data type (columns) or distinct types (schemas).				✓	✓						✓		✓				
E	Edit the object.			✓			✓ <sup>7</sup>											
EDC	Show enabled/disabled connections.						✓											
F	Show functions.											✓						
FC	Show the foreign key From Column.			✓ <sup>3</sup>														
FK	Show information about the referential integrity defined for foreign keys.			✓														
FRE	Free the object.							✓	✓									
G	Grant privileges for the object.	✓	✓	✓		✓		✓	✓	✓			✓	✓	✓		✓	✓
GEN	Generate SQL for object from DB2 catalog.	✓	✓	✓	✓							✓	✓	✓	✓			
H	Show the homonyms (like-named objects) for the object.					✓												
I	Show detailed information about the object.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓		
ICS	Show the status of image copies for the object.	✓	✓		✓													
L	Show the collection for the object or, for tables, show the rows of this table.									✓ <sup>2</sup>								
LAB	Label the object.			✓		✓												
LC	Show LISTCAT information for the data set.	✓ <sup>6</sup>	✓ <sup>6</sup>															
LPT	List the PLAN_TABLE table for the object.						✓		✓									
M	Show the DBRMs for the object.							✓										
O	Show related stored procedures.											✓						
P	Display information about the privileges for this object.	✓	✓	✓		✓		✓	✓	✓		✓	✓	✓	✓		✓	



Table 20. Object list line commands (continued)

Command	Description	Database	Table space	Table/View	Index	Column	Synonym	Plan	Package	Collection	DBRM	Schema	Distinct Type	Function	Procedure	Trigger	Storage Group	Sequence
PA	Show parent tables.			✓														
PAR	Show parent relations (referential constraints).		✓															
PARM	Show the routine parameters.													✓				
PC	Show the column privileges for this object.		✓ <sup>2</sup>															
PK	Show the primary key for this table.		✓															
PKG	Show the packages for the object.		✓	✓	✓			✓	✓ <sup>2</sup>	✓				✓	✓	✓		
PKL	Show the package lists for the object.							✓	✓	✓								
PL	Show the plans for the object.		✓	✓	✓			✓ <sup>2</sup>	✓	✓	✓							
PR	Print table.		✓				✓ <sup>7</sup>											
PS	Display information about the privileges for the schema for this object.												✓	✓	✓	✓		
PST	Show partition statistics.		✓	✓		✓												
PT	Show the parts of the object.		✓		✓												✓	
R	Revoke the privilege for this object <sup>2</sup> .	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓			
RBI	Rebind the object.							✓	✓									
RDT	Return data type.													✓				
ROW (or "/" /")	Show all the columns in this row of the result table.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RT	Recover TOCOPY.	✓ <sup>6</sup>	✓ <sup>6</sup>															
S	Show the table spaces for the object.	✓	✓ <sup>2</sup>	✓				✓	✓			✓ <sup>2</sup>					✓	
SCH	Show the schema the object.													✓	✓ <sup>2</sup>	✓		
SEL	Build SQL SELECT statement for this object.		✓				✓ <sup>7</sup>											
SEQ	Show identity column information.																	
SQL	Show the SQL statements in the object.										✓					✓		
SYN	Show the synonyms for the object.		✓					✓	✓	✓								

Table 20. Object list line commands (continued)

Command	Description	Database	Table space	Table/View	Index	Column	Synonym	Plan	Package	Collection	DBRM	Schema	Distinct Type	Function	Procedure	Trigger	Storage Group	Sequence
T	Show the tables for the object.	✓	✓	✓ <sup>5</sup>	✓	✓	✓	✓	✓				✓			✓		
TC	Show the foreign key To Column.			✓ <sup>3</sup>														
TR	Show triggers.			✓								✓						
UTL	Run a DB2 utility job against the object.		✓	✓	✓		✓ <sup>7</sup>											
V	View the object.			✓			✓											
VER	Show the versions of the object.								✓									
VOL	Show volumes.															✓		
VS	Show how the view was created.			✓ <sup>4</sup>														
VW	Show views.			✓			✓											
X	Show the indexes for the object.	✓		✓		✓		✓									✓	
XC	Show the indexes and index columns for the object.			✓														
XPT	Show index parts.			✓												✓	✓	

**Notes:**

1. Only available from a list of table constraints.
2. Only available from a list of object privileges.
3. Only available from a list of foreign keys.
4. Only available when the object is a view.
5. Only available when the object is a view or an alias, or from a list of object privileges.
6. Only available from a list of image copies.
7. The synonym name is copied to the function panel if the location is unspecified and the owner is the SQLID; otherwise, the synonym name is resolved and the resolved name is copied.

### RELATED TASKS

“Line command query (?)”

“Equal (=)”

“ROW” on page 257

### Line command query (?)

If you enter ? in the line command area, FM/DB2 displays a list of the line commands you can enter for this object type. Figure 55 shows an example of a list of valid line commands (in this case, for a synonym object type).

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Object List Line Commands		Row 1 to 6 of 6
Type S against the required line command and press Enter.			
Sel	Command	Description	
-	B	Browse table	
-	C	Copy table	
-	CR	Create a synonym	
-	CRA	Create an alias	
-	DR	Drop synonym	
-	E	Edit table	
-	I	Details about synonym	
-	PR	Print table	
-	ROW	Show all columns for this row	
-	SEL	Build a SELECT statement	
-	T	Show tables	
-	UTL	Utility functions	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieve
F9=Swap	F10=Actions	F12=Cancel	F7=Backward
			F8=Forward

Figure 55. Using the ? line command to display a list of valid line commands

To select a command from the list of valid commands, enter S in the **Sel** column.

### RELATED REFERENCES

“Object List Line Commands panel” on page 662

Table 20 on page 252

### Equal (=)

If you enter = in the line command area, FM/DB2 runs the previous line command.

Figure 56 on page 257 shows the use of the = line command. The previous line command that FM/DB2 ran was DS (to display the structure of the data base DSNRLST). The asterisk is displayed in the first position of the line command area after FM/DB2 has run the command and you have returned to the original panel. If you enter = in the line command area for another listed object (in this case, the data base FMN2), FM/DB2 runs the DS command for that object.

<u>Process</u> <u>Options</u> <u>Utilities</u> <u>Help</u>										
FM/DB2 (DFA2)						Databases				Row 1 to 10 of 63
Location:										
Cmd	Name	Owner	+	Storage Group	Buffer Pool	DBID	Created		+ T E	Index Buffer
							By			Pool
	*	*		*	*	*	*		*	*
_____	DSNDB04	SYSIBM		SYSDEFLT	BP0	4	SYSIBM			BP0
_____	DSNDB06	SYSIBM				6	SYSIBM		E	BP0
_____	DSNDB07	FMNUSER		SYSDEFLT	BP0	7	FMNUSER		W	BP0
*S_____	DSNRLST	FMNUSER		SYSDEFLT	BP0	256	FMNUSER			E BP0
_____	DSNRGFDB	FMNUSER		SYSDEFLT	BP0	257	FMNUSER			E BP0
=_____	FMN2	FMNUSER		SG01	BP0	258	FMNUSER			E BP0
_____	FMDB2	FMNUSER		SYSDEFLT	BP0	259	FMNUSER			E BP0
_____	DSN8D61P	BRADB		DSN8G610	BP0	261	BRADB			E BP0
_____	DSN8D61A	BRADB		DSN8G610	BP0	260	BRADB			E BP0
_____	DSN8D61L	BRADB		DSN8G610	BP0	262	BRADB			E BP0
Command ==> _____ Scroll PAGE										
F1=Help		F2=Split		F3=Exit		F4=Expand		F7=Backward		F8=Forward
F9=Swap		F10=Left		F11=Right		F12=Cancel				

Figure 56. Using the equal (=) line command

If you enter the “=” line command multiple times, as shown in Figure 57, FM/DB2 runs the line command (in this case, DS) consecutively for each of the nominated objects in the list without returning to the original panel between each execution.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp						
FM/DB2 (DFA2)				Databases		Row 1 to 10 of 63			
Location:									
Cmd	Name	Owner	+ Storage Group	Buffer Pool	DBID	By	+ T E	Index Buffer Pool	
	*	*	*	*	*	*	*	*	
	DSNDB04	SYSIBM	SYSDEFLT	BP0	4	SYSIBM		BP0	
	DSNDB06	SYSIBM			6	SYSIBM	E	BP0	
	DSNDB07	FMNUSER	SYSDEFLT	BP0	7	FMNUSER	W	BP0	
*S	DSNRLST	FMNUSER	SYSDEFLT	BP0	256	FMNUSER	E	BP0	
	DSNRGFDB	FMNUSER	SYSDEFLT	BP0	257	FMNUSER	E	BP0	
=	FMN2	FMNUSER	SG01	BP0	258	FMNUSER	E	BP0	
	FMDB2	FMNUSER	SYSDEFLT	BP0	259	FMNUSER	E	BP0	
=	DSN8D61P	BRADB	DSN8G610	BP0	261	BRADB	E	BP0	
=	DSN8D61A	BRADB	DSN8G610	BP0	260	BRADB	E	BP0	
	DSN8D61L	BRADB	DSN8G610	BP0	262	BRADB	E	BP0	
Command ==>									
				Scroll PAGE					
F1=Help		F2=Split		F3=Exit		F4=Expand		F7=Backward	
F9=Swap		F10=Left		F11=Right		F12=Cancel		F8=Forward	

Figure 57. Using the equal (=) line command multiple times

## ROW

If you enter ROW in the line command area, FM/DB2 displays the column name (and its value) as held in the DB2 catalog table for each column of the specified object,

You can enter more than one ROW line command at a time.

## Working with object list panels

Figure 58 shows the use of the ROW line command, placed in the line command area for the synonym object TCONA.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Synonyms			
		Row 1 to 11 of 36			
Location:					
Cmd	Synonym	+ Owner	+ Table/View Name	+ Owner	+ Created By
	*	*	*	*	*
DEPT		HARFOUJ	DEPT	DSN8610	HARFOUJ
DEPT		KIEFERA	DEPT	DSN8610	KIEFERA
SDEPT		KIEFERA	DEPT	DSN8610	KIEFERA
VPSTRDE1		BRADB	VPSTRDE1	FMDB2	BRADB
VPSTRDE2		BRADB	VPSTRDE2	FMDB2	BRADB
VASTRDE1		BRADB	VASTRDE1	FMDB2	BRADB
EMP		BRADB	EMP	FMDB2	BRADB
VPHONE		BRADB	VPHONE	FMDB2	BRADB
ROW TCONA		BRADB	TCONA	FMDB2	BRADB
DEPT		BRADB	DEPT	FMDB2	BRADB
VDEPT		BRADB	VDEPT	FMDB2	BRADB
Command ==>				Scroll PAGE	
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

Figure 58. Using the ROW line command

Figure 59 shows the result. In this case, the column names are from the DB2 catalog table, SYSSYNONYMS.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Display Row	Row 1 to 7 of 7
Column Name	Column Value		
*	*		
NAME	TCONA		
CREATOR	BRADB		
TBNAME	TCONA		
TBCREATOR	FMDB2		
IBMREQD	N		
CREATEDBY	BRADB		
CREATEDTS	2001-05-02-10.01.58.268038		
***** END OF DB2 DATA *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F7=Backward F8=Forward

Figure 59. Result of using the ROW line command

You can limit the number of entries shown on the panel by entering search criteria in the areas marked by an asterisk (\*) immediately below the headings.

## RELATED TASKS

“Limiting the data displayed” on page 247

## Sorting the displayed data

Use the SORT primary command to sort a column in the current object list.

To sort one column (in ascending sequence):

1. Type SORT on the command line.
2. Place the cursor within the column you want to sort.
3. Press Enter.

FM/DB2 sorts the column in ascending sequence.

To sort multiple columns, in ascending or descending sequence:

1. Type SORT on the command line.
2. Ensure the cursor is not positioned within any column.
3. Press Enter:

FM/DB2 displays the Sort Fields panel.

You can limit the number of entries shown on the panel by entering search criteria in the areas marked by an asterisk (\*) immediately below the headings.

## RELATED TASKS

“Limiting the data displayed” on page 247

## RELATED REFERENCES

“Sort Fields panel” on page 747

“SORT primary command” on page 853

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## Reverse engineering

Reverse engineering lets you reverse engineer the DB2 objects in your database catalog.

Reverse engineering generates the SQL statements necessary to re-create a DB2 object.

Use the GEN line command on the corresponding object list panel to reverse engineer any of the following objects:

- Database
- Table space
- Table or view
- Index
- Schema
- Distinct type
- Function
- Stored procedure

**Note:** The GEN line command applies to objects at the current server only. If you enter the GEN line command against an object at a remote location, the location information is discarded when the Generate SQL From DB2 Catalog panel is displayed.

To generate DDL for objects at a remote location, first connect to that location, then use the GEN line command.

Figure 60 shows the GEN line command entered on a database object list panel:

<div> Process Options Utilities Help </div>									
FM/DB2 (DFA2)				Databases				Row 51 to 54 of 54	
Location:									
Cmd	Name	Owner	Storage Group	Buffer Pool	DBID	By	Created	Index Buffer	
	*	*	+	*	*	*	+	T E	Pool
	CONVDB4	OSPEED	SYSDEFLT	BP0	302	OSPEED		E	BP0
GEN	JOHNLEDP	SIROED	JOHNLEGP	BP0	304	SIROED		E	BP0
	GPCOPYL	GRAHAMP	GRAHAMPO	BP0	276	GRAHAMP		E	BP0
	UTILBIG1	OSPEED	DB2BIG	BP0	306	OSPEED		E	BP0
***** END OF DB2 DATA *****									
<div> Command ==&gt; <div> F1=Help F2=Split F3=Exit F4=Expand F7=Backward F8=Forward </div> <div> F9=Swap F10=Left F11=Right F12=Cancel </div> <div> Scroll PAGE </div> </div>									

Figure 60. GEN line command entered on Databases object list panel

Typical uses for reverse engineering include:

- Extracting the DDL for an object before changes are made, so that the changes are applied to the current definition and are available for fallback purposes.
- Move DB2 objects to another DB2 subsystem. By using reverse engineering (together with the DB2 table unload and load facilities), objects can be moved after a few manual modifications to the generated SQL and batch jobs.

When extracting database, table space, and table objects, all dependent objects can also be generated; this includes table spaces, tables, indexes, views, synonyms, aliases, referential constraints, table checks, and table triggers. When extracting objects in schemas, reverse engineering can extract the dependent distinct types, functions, and stored procedures. All authorizations to these objects can also be generated.

You can generate the SQL statements using a batch or online job. If you are using FM/DB2 to extract several objects from a large catalog, batch jobs are recommended.

If you use the GEN line command, FM/DB2 displays the Generate SQL From DB2 Catalog panel.

On the Generate SQL From DB2 Catalog panel, you can:

- As an option, specify new values for the :
  - Storage group (possibly using a different storage group for table spaces and index spaces).
  - Database.
  - Specify a new object owner. If specified, the new owner is used whenever an object is created.
  - Specify a new schema name (where applicable). If specified, the new schema is used whenever an object is created.

- Specify the data set in which FM/DB2 places the generated SQL.
- Specify whether the SQL generation runs as a batch or online job.
- Specify how often reverse engineering adds an SQL COMMIT statement to the generated SQL.
- Specify whether DB2 default parameters are removed or kept in the generated SQL.

If you specify an execution mode of BATCH, FM/DB2 generates a batch job and displays the job in an ISPF Edit session, ready for any modifications you need to make before submitting the job for execution. If you specify TSO, FM/DB2 generates the SQL statements online and displays the results.

#### RELATED TASKS

“Performance tips”

#### RELATED REFERENCES

“Generate SQL From DB2 Catalog panel” on page 634

## Performance tips

To improve performance of the extract program, consider adding the following indexes to the DB2 catalog:

On SYSDBAUTH	(database,(grantor,grantee))
On SYSCHECKS	(towner,tbname)
On SYSRELS	(creator,tbname,relname)
On SYSRESAUTH	(qualifier,name,(grantor,grantee,obtype))
On SYSTABAUTH	(tcreator,tname,(grantor,grantee,grantee_type))
On SYSCOLAUTH	(creator,tname,(dategranted,timegranted))

The recommended mode of operation is batch, even if only a few objects are requested. This is because the design process is based on the standard DB2 catalog indexes, which means that some parts of the process scan the catalog tables instead of doing a direct reference.

## Considerations

The following considerations apply to reverse engineering:

- FM/DB2 does not extract IDCAMS DEFINE CLUSTER statements for VCAT-defined table spaces and indexes.
- The generated SQL for table spaces and indexes defined with a DSETPASS (password) contains a SPUFI comment line such as:

```
--      DSETPASS XXXXXXXX
```

FM/DB2 does not reveal the data set password in the catalog; FM/DB2 generates the comment line and issues a warning.

- The ability to generate actually allocated or actually used space allocations depends on information in the DB2 catalog. The actual data set sizes for table spaces or index spaces are not retrieved. Only use these options if you have recently run STOSPACE and RUNSTATS for the selected objects.





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## Chapter 9. Printing

FM/DB2 provides various utilities that allow you to print or view printed output:

- To print the contents of a DB2 table or view, use the Print utility function (3.1).
- To browse, and optionally purge, the print output from your current FM/DB2 editor session held in the print data set, use the Print Browse utility function (3.11).
- To print an audit trail report using the contents of the audit trail data set, use the Audit trail utility function (3.10).

Each of these utilities is described in the remainder of this chapter.

### RELATED TASKS

“Printing the contents of a DB2 table”

“Looking at the print output from your FM/DB2 session” on page 268

“Printing an audit trail report” on page 269

---

## Printing the contents of a DB2 table

To print the contents of a DB2 table or view, use the Print utility function (3.1).

When you print data, you can:

- Select which rows to print.
- Select which columns to print and the order in which they are arranged on the listing.
- Print DB2 tables or views with columns formatted according to column data type.
- Provide customized column headings.
- Limit the number of rows printed:

### Limit the print

You can limit the number of rows that are printed by specifying the number of rows to print.

To print all the rows of the DB2 object, specify 0 (zero) or ALL.

### Select rows

You can select the rows you want to print by specifying *row selection criteria*.

To display the Print Utility panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 1 (Print)

Now that you have the Print Utility panel displayed, you can specify the name of the DB2 table or view you want to print, how many rows you want to print, and other options to control how the data is printed.

When you have finished specifying these details, press Enter.

## Printing the contents of a DB2 table

If you selected **Edit options** (either by using a “/”, or by having previously used the “A” selection character for this option), before printing the data, the Print Utility Options panel is displayed.

If you selected **Edit template** (either by using a “/”, or by having previously used the “A” selection character for this option), before printing the data, the Column Selection/Edit panel is displayed.

If you selected **Batch execution** (either by using a “/”, or by having previously used the “A” selection character for this option), the generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

Otherwise (if you selected none of the preceding options), FM/DB2 prints the data.

## Formatting the print output

Formatting of the print output is controlled by the following:

### Settings: Print settings (option 0.0.1)

Several processing options, that you can specify using the Set Print Processing Options panel, affect the printed output:

#### Output destination

Where you want the printed output sent:

##### **SYSPRINT**

Send print output to the current SYSPRINT allocation.

Typically, SYSPRINT is allocated to the terminal, making this option synonymous with TERMINAL. However, you can allocate SYSPRINT in other ways.

##### **Terminal**

Send print output to the terminal.

##### **Data set**

Output is accumulated in the print data set specified in the **Data set name** field. This data set can be browsed using the PB command or sent to the JES spool queue for printing by issuing the PRINT command while browsing the data set. (The output is sent to the JES spool queue class specified in the Output class field.)

**REXX** Send print output to the REXX stem variable FILEM.

Choose this option when you want to control your printing from within a REXX program.

#### **Record length**

How many columns wide the output is

#### **Page skip**

Whether output from each function starts on a new page

#### **Wide print**

Whether the maximum print line length for print output is used

#### **Translate non-printable chars**

Whether non-printable characters are translated to blanks

#### **Uppercase message text**

Whether all message text is translated to uppercase.

### Data set DISP

Whether the print output is appended to the existing data set (MOD) or replaces it (OLD).

**Note:** This option only affects output sent to the print data set specified in the PRINTDSN option.

### Dump format

Which format (updown or across) is used for hexadecimal print output

### Data set name

The print data set where print output is directed when the PRINTOUT print option is set to SYSOUT=c

### Output class

The class of the JES spool queue to be used when the PRINT command is issued while browsing the temporary print data set.

### Lines per page

How many lines per page the output has

### Record limits

Which part of each record to print

You can view the print data set using Print Browse (option 3.11). While you are using the Print Browse, you can use the PURGE primary command to clear the print data set. To transfer the contents of the print data set to a SYSOUT class, press the Print function key (F4).

### Print Mode

This entry field on the Print Utility panel determines the format of the printed output.

#### RELATED REFERENCES

“Set Print Processing Options panel” on page 735

“PURGE primary command” on page 844

## Editing the template

Before you print the data, you can edit the template to specify what data is printed and how it is displayed. For example, you might only want to print certain columns, specify different headings for them, and change the sequence in which the columns are printed.

To edit the template, select the **Edit template** option on the Print Utility panel. The Column Selection/Edit panel is displayed.

## Running Print in batch

If you want to print large DB2 tables, you can perform the print in a batch job.

If you select the **Batch execution** option on the Print Utility panel, the Print utility builds the necessary JCL to perform the print function in a batch job. The generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

#### RELATED TASKS

“Editing the template for the “From” table” on page 197

“Specifying a DB2 object name” on page 29

## Printing the contents of a DB2 table

“Specifying a data set and a member name” on page 34  
“Print settings (option 0.1)” on page 46  
Chapter 3, “Working with templates,” on page 55  
“Looking at the print output from your FM/DB2 session” on page 268

### RELATED REFERENCES

“Primary Option Menu panel” on page 670  
“Utility Functions panel” on page 797  
“Print Utility panel” on page 675  
“Column Selection/Edit panel” on page 419

## Printing rows from a DB2 table

To print rows from a DB2 table, use:

- The RD (“Record Dump”) primary command to print the data in dump format
- The RP (“Record Print”) primary command to print the data in character format

### Examples

Here is an example of RD output when the display format is SNGL:

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
<hr/>			
FM/DB2 (DFA2)	Print Browse		
			Col 1
<hr/>			
IBM File Manager for z/OS DB2 Component			
Ref Key	Column	Type(len)	Data
<hr/>			
Record Number - 1			
#1	PU	EMPNO	CH(6)
			000010
			FFFFFF
			000010
#2		FIRSTNME	VC(12)
			CHRISTINE<
			CCDCEECDC
			389923955
#3		MIDINIT	CH(1)
			I
			C
			9
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Print
F8=Down	F9=Swap	F10=Left	F11=Right
			F12=Cancel
			F5=RFind
			F6=Purge
			F7=Up
			Scroll PAGE

Figure 61. Sample printed output from RD primary command (SNGL display format)

Here is an example of RD output when the display format is TABL:

```

Process   Options   Utilities   Help
-----
FM/DB2 (DFA2)      Print Browse

                                     Col 1
-----+-----1-----2-----3-----4-----5-----6-----7-----8
IBM File Manager for z/OS DB2 Component
EMPNO  FIRSTNME      MIDINIT  LASTNAME      WORKDEPT  PHONENO  HIREDATE      JOB
CH(6)  VARCHAR(12)   CH(1)    VARCHAR(15)   CH(3)     CH(4)    DATE          CH(8)
PU-->  <---+-----1---> -      <-----1-----> <-NF      <-->      <---+-----> <----->
000010 CHRISTINE<   I          HAAS<       A00        3978      01/01/1965  PRES
FFFFFF CCDCEECDC    C          CCCE       CFF       FFFF      FF6FF6FFFF  DDCE4444
000010 389923955    9          8112      100       3978      0110111965 79520000

***** End of data *****

Command ==>
F1=Help   F2=Split   F3=Exit   F4=Print   F5=RFind   F6=Purge   F7=Up
F8=Down   F9=Swap    F10=Left  F11=Right  F12=Cancel

```

Figure 62. Sample printed output from RD primary command (TABL display format)

Here is an example of RP output when the display format is SNGL:

```

  _Process_   _Options_   _Utilities_   _Help_
-----
FM/DB2 (DFA2)   Print Browse

-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8
Col 1
IBM File Manager for z/OS DB2 Component
Ref Key   Column      Type(len)      Data
-----
Record Number - 1

#1  PU      EMPNO        CH(6)          000010
#2      FIRSTNME  VC(12)        CHRISTINE<
#3      MIDINIT   CH(1)         I
#4      LASTNAME  VC(15)        HAAS<
#5      NF        WORKDEPT      CH(3)          A00
#6      PHONENO   CH(4)         3978
#7      HIREDATE  DATE          01/01/1965
#8      JOB       CH(8)         PRES
#9      EDLEVEL   SMINT         18
#10     SEX       CH(1)         F
#11     BIRTHDATE DATE          08/14/1933

Command ==>
F1=Help   F2=Split   F3=Exit   F4=Print   F5=RFind   F6=Purge   F7=Up
F8=Down   F9=Swap     F10=Left  F11=Right  F12=Cancel

```

Figure 63. Sample printed output from RP primary command (SINGL display format)

Here is an example of RP output when the display format is TABL:

## Printing rows from a DB2 table

```

  _Process  _Options  _Utilities  _Help
-----
FM/DB2 (DFA2)   Print Browse

                                         Col 1
-----+-----1-----2-----3-----4-----5-----6-----7-----8
IBM File Manager for z/OS DB2 Component
EMPNO  FIRSTNME  MIDINIT  LASTNAME  WORKDEPT  PHONENO  HIREDATE  JOB
CH(6)  VARCHAR(12) CH(1)    VARCHAR(15) CH(3)     CH(4)    DATE      CH(8)
PU--> <-----1-> -      <-----1-----> <-NF      <-->      <-----> <----->
000010 CHRISTINE<  I      HAAS<      A00      3978      01/01/1965 PRES
***** End of data *****

Command ==>
F1=Help  F2=Split  F3=Exit  F4=Print  F5=RFind  F6=Purge  Scroll PAGE
F8=Down  F9=Swap   F10=Left F11=Right F12=Cancel F7=Up

```

Figure 64. Sample printed output from RP primary command (TABL display format)

### RELATED REFERENCES

- “RD primary command” on page 845
- “RP primary command” on page 849

## Looking at the print output from your FM/DB2 session

To browse, and optionally purge, the print output from your current FM/DB2 editor session held in the print data set:

- Issue the PB primary command, or
- Use the Print Browse utility function (3.11)

You specify the print data set using the **PRINTDSN** entry field on the Set Print Processing Options panel.

If you use the PB primary command or the Print Browse utility when you have not created any print output, FM/DB2 displays the message Empty print data set.

The following primary commands are available with Print Browse:

- FIND
- LOCATE
- PRINT
- PURGE

To select the Print Browse utility:

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 11 (Print browse)

Figure 65 on page 269 shows an example of some printed output displayed by Print Browse.

Process	Options	Utilities	Help				
FM/DB2	Print Browse						
			Line 1				
			Col 1				
-----1-----2-----3-----4-----5-----6-----7-----8							
IBM File Manager for z/OS DB2 Component							
DB2 SSID: DB26	SQL ID: FMNUSER	Location:	Table/View: DSN8610.EMP				
EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE	JOB
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)	DATE	CH(8)
PU-->	<-----1-->	-	<-----1----->	<-NF	<-->	<----->	<----->
000010	CHRISTINE	I	HAAS	A00	3978	01.01.1965	PRES
000020	MICHAEL	L	THOMPSON	B01	3476	10.10.1973	MANAGER
000030	SALLY	A	KWAN	C01	4738	05.04.1975	MANAGER
000050	JOHN	B	GEYER	E01	6789	17.08.1949	MANAGER
000060	IRVING	F	STERN	D11	6423	14.09.1973	MANAGER
000070	EVA	D	PULASKI	D21	7831	30.09.1980	MANAGER
000090	EILEEN	W	HENDERSON	E11	5498	15.08.1970	MANAGER
000100	THEODORE	Q	SPENSER	E21	0972	19.06.1980	MANAGER
000110	VINCENZO	G	LUCCHESI	A00	3490	16.05.1958	SALESREP
000120	sean		O'CONNELL	A00	2167	05.12.1963	CLERK
000130	DOLORES	M	QUINTANA	C01	4578	28.07.1971	ANALYST
Command ==>						Scroll PAGE	
F1=Help	F2=Split	F3=Exit	F4=Print	F5=RFind	F6=Purge	F7=Up	
F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel			

Figure 65. Print Browse: sample output

### RELATED TASKS

- “Printing the contents of a DB2 table” on page 263
- “Printing an audit trail report”

### RELATED REFERENCES

- “Primary Option Menu panel” on page 670
- “Utility Functions panel” on page 797
- “Set Print Processing Options panel” on page 735
- “FIND primary command” on page 825
- “LOCATE primary command” on page 836
- “PRINT primary command” on page 843
- “PURGE primary command” on page 844

## Printing an audit trail report

To print an audit trail report using the contents of the audit trail data set, use the Audit trail utility function (3.10).

An audit trail data set is created if the **Create an audit trail** option is selected when you use:

- View (option 1)
- Edit (option 2)
- Copy (option 3.3)

**Note:** You can create an audit trail data set yourself using the batch job FMNSMFX (supplied with FM/DB2). This job creates an audit trail data set using data from the SMF log file. For details, see the *File Manager Customization Guide*.

To display the Print Audit Trail panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 10 (Audit trail)



## Utility functions: Audit trail (option 3.10)

To print an audit trail report:

1. Specify the name of the audit trail data set that contains the audit trail data you want to print (**Data set name**).

If FM/DB2 created the audit trail data set (as a result of FM/DB2 view, edit, or copy activity), the name is in the format

*prefix.FMN2AUD.ssid.Dyymmdd.Thhmmss*

or

*userid.FMN2AUD.ssid.Dyymmdd.Thhmmss*

where:

<i>prefix</i>	is the TSO prefix of the user, if it exists.
<i>userid</i>	is the ISPF shared pool variable ZUSER. This is typically the same as the user's TSO logonid.
FMN2AUD	is a constant that identifies the data set as an audit trail
<i>ssid</i>	is the DB2 subsystem ID
<i>Dyymmdd</i>	is the date FM/DB2 created the audit trail data set
<i>Thhmmss</i>	is the time FM/DB2 created the audit trail data set

**Note:** If the AUDITHLQ option is set in FMN0POPT (see *File Manager Customization Guide*), audit trail data sets have the name *auditlq.FMNLOG.Dyymmdd.Thhmmss*.

If you created the audit trail data set yourself, use the data set name you specified in the supplied batch job FMNSMFX. For details, see the *File Manager Customization Guide*.

2. To help identify your audit trail report, use the **Description** entry field. If the description contains imbedded spaces, you must enclose it in quotation marks. The description you enter is displayed on the Formatted Audit Event Records section of the report.
3. Select the processing options you want:

**Print only changed columns**

Limits the amount of printed lines.

**Keep data set after printing**

Whether to keep or delete the data set after it is printed.

**Browse report**

The audit trail report is displayed using Print Browse (option 3.11).

**Note:** The contents of the audit trail report are transferred to a SYSOUT class as specified by the **PRINTOUT** print option on the Set Print Processing Options panel. To browse the audit trail report, set the **PRINTOUT** print option to SYSOUT=c.

**Batch execution**

Generates JCL for printing the audit trail report using a batch job. For command syntax, see "AUD (Print Audit Trail Report)" in the *File Manager User's Guide and Reference*.

4. Press Enter.

## Audit Trail Report

The audit trail report is divided into two sections: Formatted Audit Events Records (Figure 66) and Summary Statistics (Figure 67 on page 272).

IBM File Manager for z/OS DB2 Component Audit Trail Report		Page 1
Formatted Audit Event Records		Date: 2004-09-2
		Time: 11.14.39
Audit trail for EDIT function.		
Data set name: FMNUSER.FMN2AUD.DB26.D020918.T155156		
Audit description:		
System Information:		
MVS System Id: FMD2		
DB2 Subsystem: DB26		
Current SQLID: FMNUSER		
DB2 Object Information:		
Location:		
Owner: FMNUSER		
Name: EMP		
Template Information:		
Data set name:		
Audit event number: 1		
SQL statement: SELECT "EMPNO", "FIRSTNAME", "MIDINIT", "LASTNAME", "WORKDEPT", "PHONENO", "HIREDATE", "JOB", "EDLEVEL", "SEX", "BIRTHDATE", "SALARY", "BONUS", "COMM" FROM "FMNUSER"."EMP"		
Data fetched on 02/09/18 at 15.52.00		

Figure 66. Audit trail report: Formatted Audit Event Records section

The first part of the Formatted Event Records section shows:

- The FM/DB2 function being audited (View, Edit, or Copy).
- The name of the data set holding the audit log records.
- The report description (if specified).
- Location information for the DB2 object being manipulated.

The second part of the Formatted Event Records section shows information for each audit event (each SQL call is defined as a separate audit event):

- The audit event number.
- A date and timestamp.
- The SQL statement.
- The DB2 column name.
- The type of key (if applicable).
- The original value of the column (if the column has been changed or deleted).
- The new value of the column (if the column has been changed or inserted).

If **Print only changed fields** was selected on the Print Audit Trail panel, only columns where the data has changed are shown.

Every FM/DB2 view, edit, or copy of a DB2 object is recorded as a separate session. If SMF recording is used, many sessions can be logged. Summary statistics are provided for each session, not the entire period being audited.

## Utility functions: Audit trail (option 3.10)

### Summary Statistics

IBM File Manager for z/OS DB2 Component    Audit Trail Report		Page 2
Summary Statistics		Date: 2004-09-2
		Time: 11.14.39
Data base opened on 2004-09-18 at 15.52.00 by userid: FMNUSER		
Data base closed on 2004-09-18 at 15.55.47		
Total SQL statements:	1	
Rows inserted:	0	
Rows deleted:	0	
Rows replaced:	0	
TOTAL Data base changes:	0	
Records bypassed:	0	
Audit Trail Report Options		
Maximum Print Lines per Page:	60	
Print Only Changed Fields on an Update:	NO	

Figure 67. Audit trail report: Summary Statistics section

The Summary Statistics section shows:

- The times the database was opened and closed.
- The user ID.
- Counts of the number of SQL calls, inserts, deletes, and row replacements for the FM/DB2 session.
- The total number of update events.

#### RELATED TASKS

“View and Edit options (options 1 and 2)” on page 48  
“Setting options for the current FM/DB2 editor session” on page 99  
“Copy utility options (option 3.3)” on page 49  
Chapter 4, “Viewing and changing DB2 data,” on page 95  
“Copying data from one DB2 object to another” on page 195  
“Looking at the print output from your FM/DB2 session” on page 268  
“Print settings (option 0.1)” on page 46

#### RELATED REFERENCES

“Editor Options (1 of 7) panel” on page 571  
“Print Audit Trail panel” on page 671

---

## Chapter 10. Managing DB2 privileges

Use the Privileges utility function to display, grant, and revoke DB2 privileges.

To perform these functions, you use the Manage DB2 Privileges panel.

The available functions for managing DB2 privileges are shown in Table 21.

*Table 21. Privilege functions*

Privilege Type	Grant	Revoke
Database	Yes	Yes
Table space	Yes	Yes
Table/View	Yes	Yes
Column	Yes	No <sup>1</sup>
Plan	Yes	Yes
Package	Yes	Yes
Collection	Yes	Yes
Schema	Yes	Yes
Distinct type	Yes	Yes
Function	Yes	Yes
Stored procedure	Yes	Yes

**Note:**

1. You cannot revoke privileges on specific columns. You must revoke the appropriate table privileges.

To display the Manage DB2 Privileges panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 5 (Privileges)

RELATED TASKS

“Displaying privileges” on page 275

“Granting privileges” on page 275

“Revoking privileges” on page 277

RELATED REFERENCES

“Manage DB2 Privileges panel” on page 661

“Primary Option Menu panel” on page 670

“Utility Functions panel” on page 797

---

### Using the Manage DB2 Privileges panel

The Manage DB2 Privileges panel consists of two sections:

## Using the Manage DB2 Privileges panel

### Object Identification Criteria

Use this section of the panel to specify object identification criteria to identify the objects you want listed. FM/DB2 lists all objects, restricted by any such criteria, for which privileges exist. Input in this section depends on the **Object Type** you specify.

**Location** Leave this field blank if the objects you want listed are at your current location. Otherwise, type the full name of the remote location, an asterisk (\*) to display all available remote locations, or a pattern using wildcard characters. If you specify an asterisk on its own or a pattern, FM/DB2 displays a selection list showing the locations that match the input specification.

To select the location you want, type S against the required entry and press Enter.

**Note:** You can only specify a location if displaying privileges (command line blank).

**Owner** To select objects regardless of their owner, leave this field blank. Otherwise, to restrict the list of objects by owner, type either the full name of the owner or a pattern using wildcard characters. If this entry field is not blank, FM/DB2 limits the objects listed to those matching the owner selection criteria you specify.

**Note:** You can only specify an owner for table or column object types.

**Name** To select objects regardless of their name, leave this field blank. Otherwise, to restrict the list of objects by name, type either the full name of the object or a pattern using wildcard characters. If this entry field is not blank, FM/DB2 limits the objects listed to those matching the name selection criteria you specify.

**In** This is an optional field you can use to qualify the following object types:

Object type	Qualify by specifying the...
Table space	Name of the database
Column	Name of the table
Package	Name of the collection
Distinct type	Name of the schema
Function	Name of the schema
Stored procedure	Name of the schema

### Object Type

Use this section to identify the type of DB2 object against which privilege operations are performed. The available functions for managing DB2 privileges are shown in Table 21 on page 273.

To select the object type you want, type the appropriate number in the **Object Type** selection field. The default value is 3 (table).

You select whether to display, grant, or revoke privileges by what, if anything, you type on the command line:

<b>Display privileges</b>	To select this processing option, leave the command line blank.
<b>Grant privileges</b>	To select this processing option, type G on the command line.
<b>Revoke privileges</b>	To select this processing option, type R on the command line.

**Note:** To change an *existing* privilege, you must:

1. Revoke the existing privilege.
2. Grant the new privilege.

### RELATED TASKS

“Using an asterisk (\*) or a pattern in entry fields” on page 32

### RELATED REFERENCES

“Manage DB2 Privileges panel” on page 661

“Remote DB2 Location Selection panel” on page 702

---

## Displaying privileges

You can display privilege details for any of the object types listed on the Manage DB2 Privileges panel.

To display privilege details:

1. Type the required details (if any) in the **Object Identification Criteria** section.
2. Type the appropriate number in the **Object Type** selection field to select the object type you want, or use the default value, 3 (table).
3. Leave the command line blank.
4. Press Enter. The privilege display panel for the specified privilege types is displayed.

### RELATED TASKS

“Granting privileges”

“Revoking privileges” on page 277

### RELATED REFERENCES

“Manage DB2 Privileges panel” on page 661

“Primary Option Menu panel” on page 670

“Utility Functions panel” on page 797

“Privileges panels” on page 678

---

## Granting privileges

You can grant (create new) privileges for any of the object types listed on the Manage DB2 Privileges panel.

To grant one or more privileges for an object, you can use any of the following methods:

- Method 1 (specifying the object using the grant privileges panel):
  1. On the Manage DB2 Privileges panel:

## Granting privileges

- a. Type the required details (if any) in the **Object Identification Criteria** section.
  - b. Type the appropriate number in the **Object Type** selection field to select the object type you want, or use the default value, 3 (table).
2. Type G on the command line.
  3. Press Enter.

The grant privileges panel for the specified object type is displayed. The panel lists each privilege type, with a corresponding selection entry field, that can apply to the object type.

On the grant privileges panel:

- a. Select the privileges you want to grant by entering "Y" or "G" in the corresponding selection fields.
  - b. In the entry field (or fields) provided, specify the name of the object.
  - c. In the **To** entry field, specify the SQLID of the user to whom the privileges are to be granted (the grantee).
  - d. Press Enter.
- Method 2 (specifying the object from a privilege display panel):

**Note:** This method only works if there are already privileges for the DB2 object. If not, FM/DB2 issues the message "No rows selected".

1. On the Manage DB2 Privileges panel,
  - a. Type the required details (if any) in the **Object Identification Criteria** section.
  - b. Type the appropriate number in the **Object Type** selection field to select the object type you want, or use the default value, 3 (table).
2. Leave the command line blank.
3. Press Enter. The privilege display panel for the specified object type is displayed listing the selected objects.
4. On the privilege display panel, type G in the **Cmd** field against the object for which you want to grant privileges.
5. Press Enter. The grant privileges panel for the specified object is displayed.

**Note:** If you use this method to navigate to the grant privileges panel for the specified object type, the following details are pre-entered:

- The existing setting for each privilege type (Y, G, or blank)
- The name details for the object
- The SQLID of the user to whom the existing privileges are granted (the grantee)

On the grant privileges panel:

- a. Select the privileges you want to grant by entering "Y" or "G" in the corresponding selection fields.
  - b. Press Enter.
- Method 3 (using the Object List utility):
1. Use the utility function, Object List (option 3.4), to display a list of the type of objects you want.
  2. On the object list panel for the selected object type, type G in the **Cmd** field against the object for which you want to grant privileges.
  3. Press Enter.

The grant privileges panel for the specified object type is displayed (as for Method 1). The panel lists each privilege type, with a corresponding selection entry field, that can apply to the object type.

4. Follow the remaining steps as for Method 1 (3a to 3d)

If the grant privilege processing is successful, FM/DB2 displays a message indicating that the grant ran successfully. Otherwise, a panel is displayed showing the formatted SQL return code.

#### RELATED TASKS

“Displaying privileges” on page 275

“Revoking privileges”

“Displaying or printing a list of objects” on page 244

#### RELATED REFERENCES

“Manage DB2 Privileges panel” on page 661

“Primary Option Menu panel” on page 670

“Utility Functions panel” on page 797

“Grant privileges panels” on page 635

---

## Revoking privileges

You can revoke (remove existing) privileges for any of the object types listed on the Manage DB2 Privileges panel apart from column. (You cannot revoke privileges on specific columns. You must revoke the appropriate table privileges.)

To revoke one or more privileges for an object, you can use either of the following methods:

- Method 1 (specifying the object using the revoke privileges panel):
  1. On the Manage DB2 Privileges panel,
    - a. Type the required details (if any) in the **Object Identification Criteria** section.
    - b. Type the appropriate number in the **Object Type** selection field to select the object type you want, or use the default value, 3 (table).
  2. Type R on the command line.
  3. Press Enter.

The revoke privileges panel for the specified object type is displayed. If there is more than one type of privilege that can apply to the object type, the panel lists each privilege type with a corresponding entry field.

On the revoke privileges panel:

- a. Select the privileges you want to revoke by entering *any character* in the corresponding selection fields.

**Note:** For object types where there is only one type of privilege, this step does not apply.

- b. In the entry field provided (for some types of privilege there are two entry fields), specify the name of the object.
- c. In the **From** entry field, specify the SQLID of the user for whom the privileges are to be revoked (the revokee).
- d. In the **By** entry field, specify the SQLID of the user who granted the privileges (the grantor), or “ALL” for all grantors.
- e. Press Enter.



## Revoking privileges

- Method 2 (specifying the object from a privilege display panel):
  1. On the Manage DB2 Privileges panel,
    - a. Type the required details (if any) in the **Object Identification Criteria** section.
    - b. Type the appropriate number in the **Object Type** selection field to select the object type you want, or use the default value, 3 (table).
  2. Leave the command line blank.
  3. Press Enter. The privilege display panel for the specified object type is displayed listing the selected objects.
  4. On the privilege display panel, type R in the **Cmd** field against the object for which you want to revoke the privileges.
  5. Press Enter. The revoke privileges panel for the specified object is displayed.

**Note:** If you use this method to navigate to the revoke privileges panel (for the specified object type), the following details are pre-entered:

- The existing setting for each privilege type (Y, G, or blank)
- The name details for the object
- The SQLID of the user for whom the privileges are to be revoked (the revokee) in the **From** entry field.

On the revoke privileges panel:

- a. Select the privileges you want to revoke by entering *any character* in the corresponding selection fields.

**Note:** For object types where there is only one type of privilege, this step does not apply.

- b. In the **By** entry field, specify the SQLID of the user who granted the privileges (the grantor), or "ALL" for all grantors.
- c. Press Enter.

If the revoke privilege processing is successful, FM/DB2 displays a message indicating that the revoke ran successfully. Otherwise, a panel is displayed showing the formatted SQL return code.

### RELATED TASKS

- “Displaying privileges” on page 275
- “Granting privileges” on page 275

### RELATED REFERENCES

- “Manage DB2 Privileges panel” on page 661
- “Primary Option Menu panel” on page 670
- “Utility Functions panel” on page 797
- “Revoke privileges panels” on page 709

## Revoking privileges

---

## Chapter 11. Generating batch JCL for DB2 utility jobs

To generate batch JCL to execute the DB2 utility jobs listed below, use the Utilities utility function (3.9). You do not need to know the utility control statements for these operations.

- COPY
- LOAD
- REBUILD
- RECOVER
- REORG
- RUNSTATS
- UNLOAD

For an explanation of the uses of these DB2 utility jobs, refer to the *DB2 Utility Guide and Reference*.

**Note:** To successfully execute the generated utility job, you must have the appropriate DB2 privileges on any DB2 objects that are referenced.

The main panel for the Utilities utility is the DB2 Utilities panel.

To display the DB2 Utilities panel,

1. From the Primary Option Menu panel, enter 3 (Utilities) to display the Utility Functions panel.
2. From the Utility Functions panel, enter 9 (Utilities)

Use the fields on the DB2 Utilities panel to select:

- The type of DB2 utility you want to run
- The type of DB2 object that the utility processes
- Details of the particular DB2 objects you want to run a utility on

When you press Enter, all objects at the local DB2 server are displayed, unless you entered information in the “DB2 Object Details” fields on the DB2 Utilities panel in which case the displayed rows are limited to the objects that match the information you have specified.

The JCL for the DB2 utility job is generated and presented in an ISPF edit session. You can make any required changes prior to submitting the job, or use the ISPF editor commands to save a copy of the JCL for later use.

Table 22 on page 282 show which DB2 utilities you can use with which DB2 objects.

## Generating DB2 utility jobs

Table 22. DB2 utilities you can use with DB2 objects

DB2 utility	Use with these DB2 objects				
	1. Tables	2. Table spaces	3. Index spaces	4. Indexes	5. Indexes for table space
1. COPY		Yes (see page 288)	Yes (see page 289)		
2. LOAD	Yes (see page 290)				
3. REBUILD				Yes (see page 296)	Yes (see page 297)
4. RECOVER		Yes (see page 299)	Yes (see page 301)		
5. REORG		Yes (see page 302)		Yes (see page 304)	
6. RUNSTATS		Yes (see page 307)		Yes (see page 308)	
7. UNLOAD	Yes (see page 310)	Yes (see page 316)			

### RELATED TASKS

- “COPY utility” on page 287
- “LOAD utility” on page 290
- “REBUILD utility” on page 296
- “RECOVER utility” on page 298
- “REORG utility” on page 302
- “RUNSTATS utility” on page 306
- “UNLOAD utility” on page 310
- “Generating a DB2 utility job” on page 284

### RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “Primary Option Menu panel” on page 670
- “Utility Functions panel” on page 797

## Setting options for DB2 utilities

You can set DB2 utility options to:

- Insert JCL DD statements for specified LISTDEF or TEMPLATE libraries
- Modify the DB2 utility functions to include DD name clauses with specified template names
- Insert LISTDEF, TEMPLATE, and OPTIONS DB2 utility statements

To change the option settings for DB2 utilities, first select **0 (Settings)** from the Primary Option menu to display the Set Processing Options panel. The new settings apply for the current subsystem only. When you reconnect to the same subsystem, your option settings are retrieved.

To reset the option settings back to the installation defaults (for the current DB2 subsystem), use the RESET primary command or the Reset function key (F6).

The Set Processing Options panel shows menu items for:

### Unload utility options

The FM/DB2 Unload Utility options apply when the UNLOAD utility is used to transfer data.

### Options utility options

The FM/DB2 Options utility options assist in generating DB2 OPTIONS utility control statements.

### Listdef utility options

The FM/DB2 Listdef utility options assist in generating DB2 LISTDEF utility control statements and in generating JCL for utility batch jobs to access a LISTDEF library.

### Template utility options

The FM/DB2 Template utility options assist in generating DB2 TEMPLATE utility control statements and in generating JCL for utility batch jobs to access a template library. Also, options are provided that allow you to specify template names for DD names clauses of various DB2 utility control statements.

For a full description of DB2 utilities, see the *DB2 Utility Guide and Reference*.

Before you generate batch JCL to execute a DB2 Utility, check that these options are set to the values you want.

FM/DB2 uses the above options to generate JCL that refers to the appropriate LISTDEF and TEMPLATE libraries and also, where applicable, to generate an OPTIONS, LISTDEF, or TEMPLATE utility statement in the utility batch job. If specified, FM/DB2 places the OPTIONS, LISTDEF, and TEMPLATE statements in the SYSIN deck before the utility statement that corresponds to the utility selected from the DB2 Utilities panel.

To change the option settings for a DB2 utility:

1. From either the Set Processing Options panel or the **Options** pull-down menu, select the menu item for the options you want to change:
  - 11 Unload
  - 12 Options
  - 13 Listdef
  - 14 Template

FM/DB2 displays the selected options panel.
2. Change the option settings as necessary

#### RELATED TASKS

“Setting default processing options” on page 43

#### RELATED REFERENCES

“Set Processing Options panel” on page 738  
 “DB2 Utilities panel” on page 556  
 “UNLOAD Options panel” on page 787  
 “OPTIONS Options panel” on page 665  
 “LISTDEF Options panel” on page 649  
 “Additional LISTDEF Statements panel” on page 374  
 “TEMPLATE Options (1 of 2) panel” on page 779  
 “TEMPLATE Options (2 of 2) panel” on page 781  
 “Additional TEMPLATE Statements panel” on page 374  
 “RESET primary command” on page 847

---

### Generating a LISTDEF statement in the DB2 utility job

The DB2 Utilities panel shows a **Specification** section and a **LISTDEF name** entry field. You can use these entry fields to specify the name of a LISTDEF.

If you select LISTDEF in the **Specification** section, you must also specify a LISTDEF name as the object of the utility.

To use a LISTDEF name as the object of the utility:

1. In the **Specification** section, select **2. LISTDEF**
2. Enter the name of the LISTDEF in **LISTDEF name**

**Note:** The LOAD syntax does not have a LISTDEF clause. If you select LOAD in the **DB2 Utility** section and LISTDEF in the **Specification** section, FM/DB2 issues an error message.

#### RELATED REFERENCES

“DB2 Utilities panel” on page 556

---

### Generating a DB2 utility job

To generate a DB2 utility job:

1. Specify the DB2 utility you want to generate:
  - 1 COPY
  - 2 LOAD
  - 3 REBUILD
  - 4 RECOVER
  - 5 REORG
  - 6 RUNSTATS
  - 7 UNLOAD
2. Specify the object type:
  - 1 Tables
  - 2 Table spaces
  - 3 Index spaces
  - 4 Indexes
  - 5 Indexes for table spaces
3. For COPY, REBUILD, RECOVER, REORG, RUNSTATS, and UNLOAD (that is, all the FM/DB2 DB2 utilities except LOAD), you can specify that a LIST clause is to be included in the JCL generated by FM/DB2 for the nominated DB2 utility.

To generate a LIST clause in the JCL for the DB2 utility, select **2. LISTDEF**; otherwise, select **1. Object name**.

4. You now need to supply details about either the object or the LISTDEF for the DB2 utility job:
  - If you specified **1. Object name** in the Specification section (Step 3), optionally, specify details about the object by using one or more of the four filter fields:
    - **Database**
    - **Table/Index space**
    - **Owner** (Table or Index)
    - **Name** (Table or Index)

FM/DB2 validates any details you enter and carries them forward to the next panel.

For each of the preceding filter fields, you can enter:

- The full name of the item.
- An asterisk (\*) to display a list of items from which you can select the one you want.

If you enter an asterisk (\*) in any of the four filter fields, FM/DB2 displays the respective selection list panel from which you can select a value to put into the filter field. The records displayed in these panels are restricted by any other related filter you have previously entered. Each combination of utility and DB2 object results in certain valid filter combinations. Incorrect filter combinations are rejected.

- A pattern to display a list of all items whose name matches the pattern specification.
- Blanks. No filtering effect occurs.
- If you specified **2. LISTDEF** in the Specification section (Step 3), enter the name to be used in the LIST clause in **LISTDEF name**.

5. Press Enter.

FM/DB2 displays the panel for the specified DB2 utility and object type.

If you specified **1. Object name** in the Specification section (Step 3), the panel shows the qualifying list of rows, with various input and output fields. Select the rows you want and change the values in any of the editable fields as required.

If you specified **2. LISTDEF** in the Specification section (Step 3), FM/DB2 displays an alternative panel for the DB2 utility. See “Working with LISTDEF utility panels” on page 286.

6. Press Enter.

FM/DB2 displays the generated JCL which you can edit if you need to before you submit it as a job. (The LOAD and UNLOAD utilities are exceptions to this rule, as both utilities show another series of panels, before displaying the generated JCL.) Figure 68 on page 286 shows an example of generated JCL.



```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP COPY1: COPY TABLESPACE DSN8D81A.DSN8S81D
000010 //*****
000011 //COPY1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSCOPY DD DISP=(NEW,CATLG,DELETE),
000015 //          DSN=FMNUSER.DSN8D81A.DSN8S81D.F00000.D2601115,
000016 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE)
000017 //DSNUPROC.SYSIN DD *
000018 COPY TABLESPACE DSN8D81A.DSN8S81D
000019 COPYDDN(SYSCOPY)
000020 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 68. Sample JCL generated for COPY Utility (table spaces)

- To submit the JCL as a job stream for batch processing, use the SUBMIT command.

The following sections describe each of the DB2 utilities that FM/DB2 supports.

### RELATED TASKS

- “Using an asterisk (\*) or a pattern in entry fields” on page 32
- “COPY utility” on page 287
- “LOAD utility” on page 290
- “REBUILD utility” on page 296
- “RECOVER utility” on page 298
- “REORG utility” on page 302
- “RUNSTATS utility” on page 306
- “UNLOAD utility” on page 310

## Working with LISTDEF utility panels

When you specify **2. LISTDEF** in the Specification section and the name of the LISTDEF in **LISTDEF name** of one of the DB2 utility panels (excluding LOAD), FM/DB2 displays an alternative panel showing the name of the LISTDEF. You use the LISTDEF form of the utility panel to specify one or more names to be used in the LIST clause in the JCL generated for the DB2 utility.

Initially the panel shows a single line containing the name you specified in the **LISTDEF name** field on the DB2 utility panel.

You can manipulate the panel rows as necessary by entering line commands in the **CMD** field to insert, repeat, delete, or select rows.

An asterisk (\*) in the **PRC** column indicates the LISTDEF in the row is selected. Use the S command to toggle unselected rows to selected and selected rows to unselected.

You cannot select a row where the **LISTSDEF Name** field is blank.

To display the LISTDEF Selection pop-up panel, type an asterisk (\*) in the **LISTSDEF Name** field.

LISTDEF Selection

FMN2PLOC

Row 1 to 4 of 4

Select one from the list of the last twelve entries.

Se1 LISTDEF

NORMAL

- EXAMPLE1

- JOHNS

- MYLIST

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=Help

F2=Split

F3=Exit

F9=Swap

F12=Cancel

Select a LISTDEF name from the displayed list by entering an S in the **Se1** field.

To create a utility batch job with the selected LISTDEFs, press Enter.

For more information about the LISTDEF name, see the LIST keyword in the *DB2 Utility Guide and Reference*.

## COPY utility

To select the COPY utility, enter 1 in the **DB2 utility** input field on the DB2 Utilities panel.

If you selected “Table spaces” in the **Object Type** section of the DB2 Utilities panel, the COPY Utility (Table spaces) panel is displayed.

If you selected “Index spaces” in the **Object Type** section of the DB2 Utilities panel (and did not specify name of a LISTDEF), one of two forms of the COPY Utility (Index spaces) panel is displayed. The format of the panel depends on which, if any, of the filter fields you specified on the DB2 Utilities panel.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the COPY Utility (Table spaces) panel or COPY Utility (Index spaces) panel.

### RELATED TASKS

- “Default values” on page 288
- “COPY (table spaces)” on page 288
- “COPY (index spaces)” on page 289

### RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “COPY Utility (Table Spaces) panel” on page 441
- “COPY Utility (Table Spaces) with LISTDEF panel” on page 443
- “COPY Utility (Index Spaces) panel” on page 434
- “COPY Utility (Index Spaces) with LISTDEF panel” on page 437
- “TEMPLATE Options (2 of 2) panel” on page 781

## Default values

The default naming conventions used for image copy data sets in the generated JCL are:

- &ZUSER..&DBNAME..&OBJNAME..&PRE&PARTNO..D&FMN2DTIM.
- &ZUSER, &DBNAME, and &PARTNO are self-explanatory.
- &OBJNAME is either the table space name or the index space name.
- &PRE can be:
  - F Full
  - I Incremental
  - C Change Limit. This can result in DB2 performing a full or incremental imagecopy.
- &FMN2DTIM contains *jjjhhmm*, where with *jjj* is the Julian day, and *hhmm* is the time.

For example, OSPEED.UTILDB1.T1RIX1.F00000.D1011044

## COPY (table spaces)

This option corresponds to the COPY TABLE SPACE form of the COPY utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select a table space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - You can modify the COPY utility statement by changing the values in the following input fields:
    - FCP
    - Change Limits
    - RPO
  - Figure 68 on page 286 shows an example of generated JCL for copying a table space.
- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the COPY Utility (Table Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the COPY statement.
  - Figure 69 on page 289 shows an example of generated JCL for copying a table space where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP COPY1: COPY TABLESPACE LIST LDEFNAME
000010 //*****
000011 //COPY1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSCOPY DD DISP=(NEW,CATLG,DELETE),
000015 //          DSN=FMNUSER.LDEFNAME.F.D2601124,
000016 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE)
000017 //DSNUPROC.SYSIN  DD *
000018 COPY LIST LDEFNAME
000019 COPYDDN(SYSCOPY)
000020 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 69. Sample JCL generated for COPY Utility (table spaces) with LISTDEF specified

#### RELATED REFERENCES

- “COPY Utility (Table Spaces) panel” on page 441
- “COPY Utility (Table Spaces) with LISTDEF panel” on page 443
- “DB2 Utilities panel” on page 556

## COPY (index spaces)

This option corresponds to the COPY INDEXSPACE form of the COPY utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - When you use COPY (index spaces), you can use the following combinations of filter fields on the DB2 Utilities panel:
    - **Database name**, or **Table/index space name**.
    - **Database name**, **Table/index owner**, or **Table/index name**.
  - If you entered information in any of the preceding filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select an index space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - The COPY INDEXSPACE statements generated by FM/DB2 specify the database and index space name (rather than the index owner and index name), regardless of the way you specified the index to be copied. Figure 70 on page 290 shows an example of generated JCL for copying an index space.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP COPY1: COPY INDEXSPACE JLV3D81A.XEMP2
000010 //*****
000011 //COPY1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSCOPY DD DISP=(NEW,CATLG,DELETE),
000015 //          DSN=FMNUSER.JLV3D81A.XEMP2.F00000.D2601130,
000016 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE)
000017 //DSNUPROC.SYSIN DD *
000018 COPY INDEXSPACE JLV3D81A.XEMP2
000019 COPYDDN(SYSCOPY)
000020 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 70. Sample JCL generated for COPY Utility (index spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the COPY Utility (Index Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the COPY statement.

### RELATED REFERENCES

- “COPY Utility (Index Spaces) panel” on page 434
- “COPY Utility (Index Spaces) with LISTDEF panel” on page 437
- “DB2 Utilities panel” on page 556

## LOAD utility

This option corresponds to the DB2 LOAD utility control statement.

To select the LOAD utility, on the DB2 Utilities panel:

1. Enter 2 (LOAD) in the **DB2 Utility** entry field.
2. Enter 1 (Tables) in the **Object Type** entry field.

The LOAD Utility panel is displayed.

**Note:** You can also use the Import (option 3.6) utility to load data from a QSAM or VSAM data set into a DB2 table, either in foreground or in batch.

### RELATED TASKS

- “Copying data from a VSAM or QSAM file” on page 200
- “Input data” on page 291
- “Loading data using LOAD utility control statements” on page 291
- “Loading data described by a copybook or template” on page 293

## RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “LOAD Utility panel” on page 654
- “TEMPLATE Options (2 of 2) panel” on page 781

## Input data

The FM/DB2 process that builds the LOAD utility JCL requires the input data to be in a fixed-length format, as it builds fixed-position field specification statements.

You can use the LOAD utility where the data to be loaded is:

- Described by existing LOAD utility control statements.

For example, the REORG utility can be used to unload DB2 data into DB2 “unload” format by specifying the UNLOAD EXTERNAL option. The REORG utility also produces a file containing DB2 LOAD utility control statements to (re)load the data into the original tables.

- Described by a copybook or template.

You must specify the name of a copybook or FM/DB2 template that describes the input data. The format of the data needs to be consistent with the requirements of the LOAD utility.

## RELATED TASKS

- “REORG utility” on page 302
- “Setting options for DB2 utilities” on page 282
- “Loading data using LOAD utility control statements”
- “Loading data described by a copybook or template” on page 293

## Loading data using LOAD utility control statements

**Note:** To load data in this way, the default INDDN name (in the **INDDN template name** field on the second TEMPLATE Options panel) must be blank.

To load data from a previous DB2 “unload” operation:

1. In the entry fields for input data, specify the name of the data set (**Data set name**), and optionally the name of the member (**Member**), containing the data to be loaded.
2. In the entry fields for utility control statements, specify the name of the data set (**Data set name**), and optionally the name of the member (**Member**), containing the utility control statements.
3. Select option 1 (“The data is described by utility control statements”)
4. Press Enter.

FM/DB2 constructs a batch job to run the DB2 LOAD utility job using the input details you have specified. Figure 71 on page 292 shows an example of generated JCL for loading a table using data in DB2 “unload” format.

## Generating DB2 utility jobs

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO LOAD A TABLE
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000016 //*****
000017 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000018 //*
000019 //*****
000020 //* STEP LOAD: LOAD THE TABLE
000021 //*****
000022 //LOAD      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000023 //DSNUPROC.SYSDISC DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000024 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000025 //DSNUPROC.SYSREC00 DD DISP=SHR,          INPUT DATA
000026 //          DSN=FMNUSER.DATA(FMNCDATA)
000027 //DSNUPROC.SYSDISC DD SYSOUT=*          DISCARDED RECORDS
000028 //DSNUPROC.SYSERR DD UNIT=SYSALLDA,
000029 //          SPACE=(TRK,(1,1))          ERROR INFORMATION
000030 //DSNUPROC.SYSMAP DD UNIT=SYSALLDA,
000031 //          SPACE=(TRK,(1,1))          INTERNAL MAPPING DATA SET
000032 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000033 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000034 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000035 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000036 //DSNUPROC.SYSIN DD *
000037 LOAD DATA
000038 PREFORMAT
000039 LOG YES
000040 INDDN SYSREC00
000041 RESUME YES
000042 FLOAT(IEEE)
000043 ASCII
000044 SORTKEYS 100
000045 SORTDEVT SYSDA
000046 INTO TABLE
000047 "FMNUSER"."EMP"
000048 (
000049 "EMPNO          " POSITION(1      :2      ) CHAR(6)
000050 "SALARY          " POSITION(27     :30     ) DECIMAL
000051 )
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split   F3=Exit    F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap    F10=Left  F11=Right  F12=Cancel

```

Figure 71. Sample JCL generated for LOAD Utility using LOAD utility control statements

### RELATED TASKS

“Loading data described by a copybook or template” on page 293

### RELATED REFERENCES

“LOAD Utility panel” on page 654

## Loading data described by a copybook or template

You can use the LOAD utility to load data in a sequential data set, providing a copybook or template exists that describes the format of the input data.

In this case, you use a series of panels:

- On the LOAD Utility panel, you specify the name of the data set containing the input data, and the name of the target table.
- On the second panel, you specify the “From” copybook or template that describes the input data.
- On the third panel, you can specify the “To” template that describes the target table. Alternatively, you can use FM/DB2 to generate a template for the target table using the information in the DB2 catalog.

At this stage, you can define the mapping between fields in the input template and fields in the output template.

To load data described by a copybook or template:

1. In the entry fields for input data, specify the name of the data set (**Data set name**), and optionally the name of the member (**Member**), containing the data to be loaded.
2. In the entry fields for the target DB2 table (**Table owner**, **Table name**, and optionally **Database** and **Table space**), specify the name of the table into which the data is to be loaded. In any of these fields, you can enter either an asterisk (\*) to display a selection list, or wildcards.
3. Select option 2 (“The data is described by a template or copybook”)
4. Press Enter.

If you have specified a default name for an INDDN clause (in the **INDDN template name** field on the second TEMPLATE Options panel), FM/DB2 displays an interim panel showing the default name (for example, LODINDDN) in the **Template name** field for the input data:

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		LOAD Utility	
Input Data:			
Template name . . . LODINDDN			
Target DB2 Table:			
Owner . . . . .	FMNUSER	+	Database . . . . . (optional)
Name . . . . .	EMP		Table space . . . . . (optional)
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand F7=Backward F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel

FM/DB2 displays a panel where you can specify the input template or copybook.



5. Specify the “From” template details. Perform one of these actions:
  - Specify a copybook or template:
    - In the entry fields for the input template or copybook, specify the name of the data set (**Data set name**), and optionally the name of the member (**Member**), for the template or copybook that describes the format of the input data.
    - Select 1 (Above) for the **Template usage** option.
  - Use the last (previously used) template:
    - Select 2 (Previous) for the **Template usage** option.
6. To edit the template for the input data before proceeding to the LOAD utility “To” template panel, select the **View template** option.  
You can select this option by entering either a “/” or an “A”.

**Note:** The template edit operations have no effect when the template is used to generate DB2 LOAD utility control statements. If you select this option, you cannot update and save changes to the template.

7. Press Enter.  
FM/DB2 displays a panel where you can specify the template for the target DB2 table.
8. Specify the “To” template details using a combination of the **To Template** and **Template usage** entry fields. You can:
  - Specify a template that describes the format of the input data:
    - Use **Data set name**, and optionally **Member**, to specify the template.
    - Select 1 (Above).
  - Use the last (previously used) template:
    - Select 2 (Previous).
  - Use FM/DB2 to generate a template using the information in the DB2 catalog:
    - Select 3 (Generate from table).
  - Use FM/DB2 to generate a template using the information in the DB2 catalog and store the generated template using the name you specify (if the member already exists, FM/DB2 replaces it):
    - Use **Data set name**, and optionally **Member**, to specify the name that you want FM/DB2 to use when storing the generated template.
    - Select 4 (Generate/Replace).
9. To change the options for the current LOAD session, select **Edit load utility options** by entering either a “/” or an “A”.  
FM/DB2 displays the Load Utility Options panel for editing.

**Note:** Any options you set on this panel apply for the current LOAD session only. When you exit from the LOAD session, the load options revert to the global LOAD options.

10. To map the columns (or fields) in the “From” template to the columns in the “To” template, select **Edit load utility options** by entering either a “/” or an “A”. FM/DB2 displays the Template Mapping panel.
11. Press Enter.  
FM/DB2 constructs a batch job to run the DB2 LOAD utility job using the input details you have specified. Figure 72 on page 295 shows an example of generated JCL for loading a table using data described by a copybook or

template.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMUSER.SPFTEMPL.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMUSERB JOB (IBMGSA),
000002 //          FMUSER,MSGCLASS=A,
000003 //          NOTIFY=FMUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO LOAD A TABLE
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000016 //*****
000017 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000018 //*
000019 //*****
000020 //* STEP LOAD: LOAD THE TABLE
000021 //*****
000022 //LOAD      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMUSER'
000023 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000024 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000025 //DSNUPROC.SYSREC00 DD DISP=SHR,          INPUT DATA
000026 //          DSN=FMUSER.DATA(FMNCDATA)
000027 //DSNUPROC.SYSDISC DD SYSOUT=*          DISCARDED RECORDS
000028 //DSNUPROC.SYSERR DD UNIT=SYSALLDA,
000029 //          SPACE=(TRK,(1,1))          ERROR INFORMATION
000030 //DSNUPROC.SYSMAP DD UNIT=SYSALLDA,
000031 //          SPACE=(TRK,(1,1))          INTERNAL MAPPING DATA SET
000032 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000033 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000034 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000035 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000036 //DSNUPROC.SYSIN DD *
000037 LOAD DATA
000038 PREFORMAT
000039 LOG YES
000040 INDDN SYSREC00
000041 RESUME YES
000042 FLOAT(IEEE)
000043 ASCII
000044 SORTKEYS 100
000045 SORTDEVT SYSDA
000046 INTO TABLE
000047 "FMUSER"."EMP"
000048 (
000049 "EMPNO          " POSITION(1      :2      ) CHAR(6)
000050 "SALARY          " POSITION(27     :30     ) DECIMAL
000051 )
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split   F3=Exit    F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap    F10=Left  F11=Right   F12=Cancel

```

Figure 72. Sample JCL generated for LOAD Utility using data described by a copybook or template (continued in next figure)

#### RELATED TASKS

- “Loading data using LOAD utility control statements” on page 291
- “Mapping data” on page 86
- “Selecting options on FM/DB2 panels” on page 28
- “Editing a template” on page 63

“DB2 LOAD utility options (option 3.L)” on page 49

“Using an asterisk (\*) or a pattern in entry fields” on page 32

### RELATED REFERENCES

“LOAD Utility panel” on page 654

“LOAD Utility - Using Templates panel” on page 657

“LOAD from panel” on page 652

“LOAD Utility Options panel” on page 659

“Template Mapping panel” on page 783

“TEMPLATE Options (2 of 2) panel” on page 781

---

## REBUILD utility

This option corresponds to the DB2 REBUILD INDEX utility control statement.

To select the REBUILD utility, enter 3 in the **DB2 Utility** input field on the DB2 Utilities panel.

If you selected Table spaces in the **Object Type** section of the panel, the REBUILD Utility (Indexes) panel is displayed.

If you selected Indexes or Index spaces in the **Object Type** section of the panel, the REBUILD Utility (Indexes for Table Spaces) panel is displayed.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the REBUILD Utility (Indexes) panel or REBUILD Utility (Indexes for Table Spaces) panel.

### RELATED TASKS

“REBUILD utility (indexes)”

“REBUILD utility (indexes for table spaces)” on page 297

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“REBUILD Utility (Indexes) panel” on page 687

“REBUILD (Indexes) with LISTDEF panel” on page 689

“REBUILD (Indexes for Table Spaces) panel” on page 683

“REBUILD (Indexes for Table Spaces) with LISTDEF panel” on page 685

## REBUILD utility (indexes)

To include a WORKDDN clause in the generated REBUILD statement, specify the required template name in **WORKDDN template name** on the second TEMPLATE Options panel.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name**, **Table/index owner**, or **Table/index name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select an index from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected indexes.
  - Figure 73 on page 297 shows an example of generated JCL for rebuilding indexes.

In this example, FM/DB2 has generated two JCL steps, one for each index selected from the displayed rows on the previous panel.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RBIX1: REBUILD INDEX
000015 //* "FMNUSER"."XACT2"
000016 //*****
000017 //RBIX1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000018 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000019 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000020 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000021 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000022 //DSNUPROC.SYSIN DD *
000023 REBUILD INDEX (
000024 "FMNUSER"."XACT2"
000025 )
000026 WORKDDN(SYSUT1) SORTDEVT SYSALLDA SORTNUM 4 SORTKEYS
000027 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 73. Sample JCL generated for REBUILD Utility (indexes)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the REBUILD Utility (Indexes) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the REBUILD statement.

#### RELATED TASKS

“REBUILD utility (indexes for table spaces)”

#### RELATED REFERENCES

“DB2 Utilities panel” on page 556  
 “REBUILD Utility (Indexes) panel” on page 687  
 “REBUILD (Indexes) with LISTDEF panel” on page 689  
 “TEMPLATE Options (2 of 2) panel” on page 781

## REBUILD utility (indexes for table spaces)

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select a table space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - Figure 74 on page 298 shows an example of generated JCL for rebuilding indexes for table spaces.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RBIX1: REBUILD INDEX ALL FOR DSN8D81A.DSN8S81D
000015 //*****
000016 //RBIX1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000017 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000018 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000019 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000020 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000021 //DSNUPROC.SYSIN DD *
000022 REBUILD INDEX (ALL) TABLESPACE DSN8D81A.DSN8S81D
000023          WORKDDN(SYSUT1) SORTDEVT SYSALLDA SORTNUM 4 SORTKEYS
000024 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 74. Sample JCL generated for REBUILD Utility (indexes for table spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the REBUILD (Indexes for Table Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the REBUILD statement.

### RELATED TASKS

“REBUILD utility (indexes)” on page 296

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“REBUILD (Indexes for Table Spaces) panel” on page 683

“REBUILD (Indexes for Table Spaces) with LISTDEF panel” on page 685

## RECOVER utility

The RECOVER utility option generates JCL to run the DB2 RECOVER utility job.

To select the RECOVER utility, enter 4 in the **DB2 Utility** input field on the DB2 Utilities panel.

If you selected Table spaces in the **Object Type** section of the panel, the RECOVER Utility (Table spaces) panel is displayed.

If you selected Index spaces in the **Object Type** section of the panel, the RECOVER Utility (Index spaces) panel is displayed.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the RECOVER Utility (Table Spaces) panel or RECOVER Utility (Index Spaces) panel.

#### RELATED TASKS

- “RECOVER (table spaces)”
- “RECOVER (index spaces)” on page 301

#### RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “RECOVER Utility (Table Spaces) panel” on page 695
- “RECOVER Utility (Table Spaces) with LISTDEF panel” on page 697
- “RECOVER Utility (Index Spaces) panel” on page 691
- “RECOVER Utility (Index Spaces) with LISTDEF panel” on page 693

FM/DB2 only supports the following form of the RECOVER utility statement:

```
RECOVER object TOCOPY datasetname TOVOLUME CATALOG
```

## RECOVER (table spaces)

This option corresponds to the RECOVER TABLE SPACE form of the RECOVER utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - The information displayed in the RECOVER Utility (Table Spaces) panel includes one row for every matching entry found in the SYSCOPY catalog table. The match is performed on database name and table space name, and the type (**Typ**) of the entry must be either “F” (Full image copy) or “I” (Partial image copy). Only cataloged image copy data sets are supported. This means that there can be 0, 1, or many entries for any table space name.
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select a table space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - Figure 75 on page 300 shows an example of generated JCL for recovering table spaces.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP RECV1: RECOVER TABLESPACE DSND01.SCT02
000010 //*****
000011 //RECV1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN DD *
000015 RECOVER TABLESPACE DSND01.SCT02 TOCOPY
000016 DFA2.IMAGCOPY.SCT02 TOVOLUME CATALOG
000017 REBUILD INDEX (ALL) TABLESPACE DSND01.SCT02
000018 SORTNUM 4 SORTDEVT SYSALLDA
000019 /*
***** ***** Bottom of Data *****

Command ==> Scroll ==> PAGE
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left    F11=Right    F12=Cancel

```

Figure 75. Sample JCL generated for RECOVER Utility (table spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the REBUILD Utility (Indexes) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the RECOVER statement.
  - Figure 76 shows an example of generated JCL for recovering table spaces where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP RECV1: RECOVER TABLESPACE LIST LDEFNAME1
000010 //*****
000011 //RECV1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN DD *
000015 RECOVER LIST LDEFNAME1
000016 /*
***** ***** Bottom of Data *****

Command ==> Scroll ==> PAGE
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left    F11=Right    F12=Cancel

```

Figure 76. Sample JCL generated for RECOVER Utility (table spaces) with LISTDEF specified



## RELATED TASKS

“RECOVER (index spaces)”

## RELATED REFERENCES

“DB2 Utilities panel” on page 556

“RECOVER Utility (Table Spaces) panel” on page 695

“RECOVER Utility (Table Spaces) with LISTDEF panel” on page 697

## RECOVER (index spaces)

This option corresponds to the RECOVER INDEXSPACE form of the RECOVER utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select an index space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected index spaces.
  - Figure 77 shows an example of generated JCL for recovering index spaces.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP RECV1: RECOVER INDEXSPACE JLV3D81A.XDEPT2
000010 //*****
000011 //RECV1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN  DD *
000015 RECOVER INDEXSPACE JLV3D81A.XDEPT2      TOCOPY
000016 KEISTEW.JLV3D81A.XDEPT2.F00000.D2541023 TOVOLUME CATALOG
000017 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split   F3=Exit    F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap    F10=Left  F11=Right  F12=Cancel

```

Figure 77. Sample JCL generated for RECOVER Utility (index spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the RECOVER Utility (Index Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the RECOVER statement.

## RELATED TASKS

“RECOVER (table spaces)” on page 299

## RELATED REFERENCES

“DB2 Utilities panel” on page 556

“RECOVER Utility (Index Spaces) panel” on page 691

“RECOVER Utility (Index Spaces) with LISTDEF panel” on page 693



### REORG utility

To select the REORG utility, enter 5 in the **DB2 Utility** input field on the DB2 Utilities panel.

If you selected Table spaces in the **Object Type** section of the panel, the REORG Utility (Table spaces) panel is displayed.

If you selected Indexes in the **Object Type** section of the panel, the REORG Utility (Indexes) panel is displayed.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the REORG Utility (Table spaces) panel or REORG Utility (Indexes) panel.

#### RELATED TASKS

- “REORG (table spaces)”
- “REORG (indexes)” on page 304

#### RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “REORG Utility (Table Spaces) panel” on page 706
- “REORG Utility (Table Spaces) with LISTDEF panel” on page 708
- “REORG Utility (Indexes) panel” on page 703
- “REORG Utility (Indexes) with LISTDEF panel” on page 705

### REORG (table spaces)

To include a UNLDDN clause in the generated REORG statement, specify the required template name in **UNLDDN template name** for the REORG TABLESPACE statement on the second TEMPLATE Options panel.

**Note:** The **Unload External** option on the REORG Utility (Table Spaces) panel for the selected table space must be set to “Y”.

This option corresponds to the REORG TABLE SPACE utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select a table space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - Figure 78 on page 303 shows an example of generated JCL for reorganizing table spaces.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RORG1: REORG TABLESPACE DSN8D81A.DSN8S81D
000015 //*****
000016 //RORG1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000017 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000018 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000019 //DSNUPROC.SYSREC DD UNIT=SYSALLDA,
000020 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000021 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000022 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000023 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000024 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000025 //DSNUPROC.SYSIN DD *
000026 REORG TABLESPACE DSN8D81A.DSN8S81D LOG NO
000027 SORTDATA
000028 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 78. Sample JCL generated for REORG Utility (table spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the REORG (Table Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the REORG statement.
  - Figure 79 on page 304 shows an example of generated JCL for recovering table spaces where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RORG1: REORG TABLESPACE LIST LDEFNAME1
000015 //*****
000016 //ROG1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000017 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000018 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000019 //DSNUPROC.SYSREC DD UNIT=SYSALLDA,
000020 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000021 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000022 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000023 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000024 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000025 //DSNUPROC.SYSIN DD *
000026 REORG TABLESPACE LIST LDEFNAME1 LOG NO
000027 SORTDATA
000028 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 79. Sample JCL generated for REORG Utility (table spaces) with LISTDEF specified

### RELATED TASKS

- “REORG (indexes)”
- “Setting options for DB2 utilities” on page 282

### RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “TEMPLATE Options (2 of 2) panel” on page 781
- “REORG Utility (Table Spaces) panel” on page 706
- “REORG Utility (Table Spaces) with LISTDEF panel” on page 708

## REORG (indexes)

This option corresponds to the REORG INDEX utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name**, **Table/index owner**, or **Table/index name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select an index from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected indexes.
  - Figure 80 on page 305 shows an example of generated JCL for reorganizing indexes.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RORG1: REORG INDEX
000015 //* "BUDGER2"."PLAN_TABLE_HINT_IX"
000016 //*****
000017 //RORG1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000018 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000019 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000020 //DSNUPROC.SYSREC DD UNIT=SYSALLDA,
000021 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000022 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000023 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000024 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000025 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
000026 //DSNUPROC.SYSIN  DD *
000027 REORG INDEX
000028 "BUDGER2"."PLAN_TABLE_HINT_IX"
000029 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 80. Sample JCL generated for REORG Utility (indexes)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the REORG (indexes) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the REORG statement.
  - Figure 81 on page 306 shows an example of generated JCL for recovering table spaces where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000010 //*****
000011 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000012 //*
000013 //*****
000014 //* STEP RORG1: REORG INDEX LIST LDEF1
000015 //*****
000016 //RORG1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000017 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000018 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000019 //DSNUPROC.SYSREC DD UNIT=SYSALLDA,
000020 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000021 //DSNUPROC.SYSUT1 DD UNIT=SYSALLDA,
000022 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000023 //DSNUPROC.SORTOUT DD UNIT=SYSALLDA,
000024 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
000025 //DSNUPROC.SYSIN DD *
000026 REORG INDEX LIST LDEF1
000027 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind   F6=Rchange  F7=Up
F8=Down     F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 81. Sample JCL generated for REORG Utility (indexes) with LISTDEF specified

### RELATED TASKS

“REORG (table spaces)” on page 302

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“REORG Utility (Indexes) panel” on page 703

“REORG Utility (Indexes) with LISTDEF panel” on page 705

## RUNSTATS utility

To select the RUNSTATS utility, enter 6 in the **DB2 Utility** input field on the DB2 Utilities panel.

If you selected Table spaces in the **Object Type** section of the panel, the Runstats Utility (Table spaces) panel is displayed.

If you selected Indexes in the **Object Type** section of the panel, the Runstats Utility (Indexes) panel is displayed.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the Runstats Utility (Table spaces) panel or Runstats Utility (Indexes) panel.

## RELATED TASKS

- “RUNSTATS (table spaces)”
- “RUNSTATS (indexes)” on page 308

## RELATED REFERENCES

- “DB2 Utilities panel” on page 556
- “RUNSTATS Utility (Table Spaces) panel” on page 717
- “RUNSTATS Utility (Table Spaces) with LISTDEF panel” on page 719
- “RUNSTATS Utility (Indexes) panel” on page 714
- “RUNSTATS Utility (Indexes) with LISTDEF panel” on page 716

## RUNSTATS (table spaces)

This option corresponds to the RUNSTATS TABLE SPACE form of the RUNSTATS utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name** or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select a table space from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.
  - Figure 82 shows an example of generated JCL for gathering statistics on a table space.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP STAT1: RUNSTAT TABLESPACE DSN8D81A.DSN8S81D
000010 //*****
000011 //STAT1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN DD *
000015 RUNSTATS  TABLESPACE DSN8D81A.DSN8S81D
000016 UPDATE ALL
000017 /*
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left     F11=Right     F12=Cancel

```

Figure 82. Sample JCL generated for RUNSTATS Utility (table spaces)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the RUNSTATS Utility (Table Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the RUNSTATS statement.
  - Figure 83 on page 308 shows an example of generated JCL for recovering table spaces where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT          FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP STAT1: RUNSTAT TABLESPACE LIST LDEFNAME1
000010 //*****
000011 //STAT1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN DD *
000015 RUNSTATS TABLESPACE LIST LDEFNAME1
000016 UPDATE ALL
000017 /*
***** ***** Bottom of Data *****

Command ==> Scroll ==> PAGE
F1=Help      F2=Split    F3=Exit      F5=Rfind     F6=Rchange   F7=Up
F8=Down      F9=Swap     F10=Left    F11=Right    F12=Cancel

```

Figure 83. Sample JCL generated for RUNSTATS (table spaces) with LISTDEF specified

### RELATED TASKS

“RUNSTATS (indexes)”

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“RUNSTATS Utility (Table Spaces) panel” on page 717

“RUNSTATS Utility (Table Spaces) with LISTDEF panel” on page 719

## RUNSTATS (indexes)

This option corresponds to the RUNSTATS INDEX form of the RUNSTATS utility control statement.

- If you did *not* specify the name of a LISTDEF on the DB2 Utilities panel:
  - If you entered information in the **Database name**, **Table/index owner**, or **Table/index space name** filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.
  - To select an index from those displayed, type S in the **Sel** column. An asterisk (\*) in the **PRC** column indicates selected indexes.
  - Figure 84 on page 309 shows an example of generated JCL for gathering statistics on indexes.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMUSERB JOB (IBMGSA),
000002 //          FMUSER,MSGCLASS=A,
000003 //          NOTIFY=FMUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP STAT1: RUNSTAT INDEX
000010 //* "BUDGER2"."PLAN_TABLE_HINT_IX"
000011 //*****
000012 //STAT1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMUSER'
000013 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000014 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000015 //DSNUPROC.SYSIN DD *
000016 RUNSTATS INDEX (
000017 "BUDGER2"."PLAN_TABLE_HINT_IX"
000018 )
000019 UPDATE ALL
000020 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 84. Sample JCL generated for RUNSTATS Utility (indexes)

- If you *did* specify the name of a LISTDEF on the DB2 Utilities panel:
  - FM/DB2 displays an alternative form of the RUNSTATS Utility (Indexes) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the RUNSTATS statement.
  - Figure 85 shows an example of generated JCL for recovering table spaces where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMUSERB JOB (IBMGSA),
000002 //          FMUSER,MSGCLASS=A,
000003 //          NOTIFY=FMUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //* STEP STAT1: RUNSTAT INDEX LIST LDEFNAME1
000010 //*****
000011 //STAT1      EXEC DSNUPROC,SYSTEM=DFA2,UID='FMUSER'
000012 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000013 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000014 //DSNUPROC.SYSIN DD *
000015 RUNSTATS INDEX LIST LDEFNAME1
000016 UPDATE ALL
000017 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind   F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right  F12=Cancel

```

Figure 85. Sample JCL generated for RUNSTATS (indexes) with LISTDEF specified



### RELATED TASKS

“RUNSTATS (table spaces)” on page 307

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“RUNSTATS Utility (Indexes) panel” on page 714

“RUNSTATS Utility (Indexes) with LISTDEF panel” on page 716

---

## UNLOAD utility

The UNLOAD utility unloads data from one or more source objects to one or more sequential data sets in external format. It is the preferred method for unloading or transferring large amounts of data.

You can specify the DB2 templates that identify the data set to receive the LOAD utility control statements (PUNCHDDN clause) and the data sets into which the data is unloaded (UNLDDN clause).

To select the UNLOAD utility, enter 7 in the **DB2 utility** input field on the DB2 Utilities panel.

If you selected “Tables” in the **Object Type** section of the DB2 Utilities panel, the UNLOAD Utility (Tables) panel is displayed.

If you selected “Table spaces” in the **Object Type** section of the DB2 Utilities panel, the UNLOAD Utility (Table Spaces) panel is displayed.

**Note:** If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the UNLOAD Utility (Tables) panel or UNLOAD Utility (Table Spaces) panel.

### RELATED TASKS

“UNLOAD (tables)”

“UNLOAD (table spaces)” on page 316

“Setting options for DB2 utilities” on page 282

### RELATED REFERENCES

“DB2 Utilities panel” on page 556

“TEMPLATE Options (2 of 2) panel” on page 781

“UNLOAD Utility (Tables) “From” panel” on page 793

“UNLOAD Utility (Tables) “To” panel” on page 794

“UNLOAD Utility (Tables) with LISTDEF panel” on page 795

“UNLOAD Utility (Table Spaces) panel” on page 790

“UNLOAD Utility (Table Spaces) with LISTDEF panel” on page 791

## UNLOAD (tables)

Use the UNLOAD (tables) utility to unload data into a sequential data set. You can choose to replace any existing data with the new data, or to add the new data to the data already in the data set. The UNLOAD (tables) utility provides the most efficient means of adding large amounts of data to a data set.

When you use the UNLOAD utility, you can:

- Select the columns to be unloaded by specifying the required columns in the “From” template

- Reformat data during the unload by mapping table columns to fields in the output data set (as defined by a template)
- Create and save a File Manager "base" template that describes the unloaded data
- Select which rows to unload
- Specify the number of rows to be unloaded

To include a PUNCHDDN clause in the generated UNLOAD statement, specify the required template name in **PUNCHDDN template name** on the second TEMPLATE Options panel.

To include a UNLDDN clause in the generated UNLOAD statement, specify the required template name in **UNLDDN template name** for the UNLOAD statement on the second TEMPLATE Options panel.

The following description applies if you did *not* specify the name of a LISTDEF on the DB2 Utilities panel. If you *did* specify the name of a LISTDEF on the DB2 Utilities panel, see "UNLOAD (tables) with LISTDEF specified" on page 315.

On the UNLOAD Utility (Tables) panel:

1. The table name details you entered on the DB2 Utilities panel are copied to the UNLOAD Utility (Tables) panel. If you do not want to unload all of the rows in the source table, specify the number of rows you want to unload in the **Unload Count** field.
2. If you are using a specific template for the source table, specify the name of the template in the **From Template** entry fields.
3. In the **Processing Options**, specify the template you want FM/DB2 to use for the source table, and whether you want to edit the template before FM/DB2 builds the utility batch job.
4. To proceed, press Enter.

If you selected the **Edit template** option, FM/DB2 displays the Column Selection/Edit panel. Use this panel to restrict the data in the source table by:

- Selecting or deselecting specific columns for unloading
- Specifying row selection criteria. FM/DB2 selects only the rows whose contents satisfy the criteria for unloading

For example, the template shown in Figure 86 on page 312 has been edited to select certain columns and only rows whose contents meet certain criteria. If you use this template as the "From" template for an unload, the data unloaded is restricted to:

- The columns FIRSTNAME, LASTNAME, WORKDEPT, and JOB, but only where WORKDEPT equals "MNT" and JOB equals "PAINTER".

Process	Options	Utilities	Help
<hr/>			
FM/DB2 (DFA2)		Column Selection/Edit	Line 1 of 16
TABLE FMUSER.EMP			
----- Row Selection Criteria ----- (Use SQL/PF4 for full screen edit) -----			
1 Sel: WHERE WORKDEPT = 'MNT' AND JOB = 'PAINTER' +			
<hr/>			
Cmd Seq	SHE CL#	Column name	Data type(length) Null Default Order A/D
		**** Top of data ****	
___	___	1 EMPNO	CHARACTER(6) None ___ -
___	S	2 FIRSTNME	VARCHAR(12) None ___ -
___	___	3 MIDINIT	CHARACTER(1) None ___ -
___	S	4 LASTNAME	VARCHAR(15) None ___ -
___	S	5 WORKDEPT	CHARACTER(3) Y Null ___ -
___	___	6 PHONENO	CHARACTER(4) Y Null ___ -
___	___	7 HIREDATE	DATE Y Null ___ -
___	S	8 JOB	CHARACTER(8) Y Null ___ -
___	___	9 EDLEVEL	SMALLINT Y Null ___ -
___	___	10 SEX	CHARACTER(1) Y Null ___ -
___	___	11 BIRTHDATE	DATE Y Null ___ -
___	___	12 SALARY	DECIMAL(9,2) Y Null ___ -
Command ==>		Scroll PAGE	
F1=Help	F2=Split	F3=Exit	F4=SQL
F7=Up	F8=Down	F9=Swap	F10=Left
		F11=Right	F12=Cancel

Figure 86. Column Selection/Edit panel showing row selection criteria and selected columns

If you did not select the **Edit template** option (or have completed the edit of the template option), and the value of the **UNLDDN template name** field on the **TEMPLATE Options (2 of 2)** panel is blank, FM/DB2 displays the **UNLOAD Utility "To"** panel.

**Note:** If the **UNLDDN template name** field is not blank, FM/DB2 does not display the **UNLOAD Utility "To"** panel as the output is already defined.

5. To temporarily change the settings for the **UNLOAD** options that FM/DB2 uses in building the current batch job, select **Edit UNLOAD utility options** to display the **UNLOAD Options** panel.

If you change any of the original settings, they remain in effect only for as long as you use the DB2 Utilities **UNLOAD** feature in which the settings were changed. If you exit from the **UNLOAD Utility (Tables)** panel and return to this panel later, the settings changed in the previous **UNLOAD** session are unavailable.

6. On the **UNLOAD Utility "To"** panel, specify the sequential data set that is the target of the unload by entering the "To" data set details using the **Data set name** and, optionally, **Volume**, entry fields.
7. If you are using a specific template or copybook for the "To" data set, you can specify the name of the template or copybook data set and, optionally, the member name, in the **To Data Template or Copybook** entry fields.

The data format used by the DB2 **UNLOAD** utility is fixed. Therefore, if you specify a copybook or template data set, the copybook or template should reflect the DB2 **UNLOAD** data format to avoid data mismatch problems.

When a template is specified for the DB2 unload data set, it must be a File Manager "base" template; a FM/DB2 template cannot be used.

When the **Allow padding** option on the DB2 **UNLOAD** utility options panel is not selected, FM/DB2 cannot generate a template that describes the unloaded data. In this situation, all fields related to template processing are protected when the **UNLOAD** utility "To" panel is displayed and the template usage option is set to 5 (NONE).

8. Select the **Template usage** and **Disposition** options you want.

9. You can review the DB2 UNLOAD options by selecting the **View UNLOAD options** field. No changes can be made when the DB2 UNLOAD utility options panel is displayed. To make changes return to the DB2 UNLOAD utility “From” panel and select **Edit UNLOAD options**.
10. To edit the template mapping for the source table, select **Edit template mapping** to display the Template Mapping panel.
11. To proceed, press Enter.

FM/DB2 builds a batch job to execute the DB2 UNLOAD utility job using the specified input details.

Figure 87 on page 314 shows an example of the generated JCL for unloading a table object.

## Generating DB2 utility jobs

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO UNLOAD A TABLE
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP UNLOAD: UNLOAD FROM TABLE
000016 //* "FMNUSER"."EMP"
000017 //*****
000018 //UNLOAD1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000019 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000020 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000021 //DSNUPROC.SYSREC00 DD DISP=(MOD,CATLG,DELETE),UNIT=SYSALLDA,
000022 //          BLKSIZE=0,
000023 //          AVGREC=U,
000024 //          LRECL=82,RECFM=FB,DSORG=PS,
000025 //          SPACE=(82,(42,4),RLSE),
000026 //          DSN=FMNUSER.FRED
000027 //DSNUPROC.SYSPUNCH DD DISP=(NEW,CATLG,DELETE),UTIL CONTRL DATA
000028 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE),
000029 //          DSN=FMNUSER.FMNUSER.EMP.D2581536.SYSPUNCH
000030 //DSNUPROC.SYSIN DD *
000031 UNLOAD DATA FROM TABLE
000032 "FMNUSER"."EMP"
000033 HEADER NONE
000034 LIMIT ALL
000035 (
000036 "FIRSTNME          " POSITION(1      ) VARCHAR
000037 ",LASTNAME         " POSITION(15     ) VARCHAR
000038 ",WORKDEPT         " POSITION(33     ) CHAR(3)
000039 ",JOB              " POSITION(38     ) CHAR(8)
000040 ",BONUS            " POSITION(48     ) DECIMAL
000041 ",COMM             " POSITION(66     ) DECIMAL
000042 )
000043 WHEN
000044 (
000045 "WORKDEPT" = 'MAINT' AND "JOB" = 'PAINTER'
000046 )
000047 UNLDDN(SYSREC00)
000048 NOSUBS
000049 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split  F3=Exit   F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap   F10=Left F11=Right   F12=Cancel

```

Figure 87. Sample JCL generated for UNLOAD (Tables)

### RELATED TASKS

- Chapter 3, “Working with templates,” on page 55
- “Editing a template” on page 63
- “Letting FM/DB2 do the mapping” on page 87
- “Setting options for DB2 utilities” on page 282

### RELATED REFERENCES

- “Column Selection/Edit panel” on page 419
- “UNLOAD Utility (Tables) "From" panel” on page 793
- “UNLOAD Utility (Tables) "To" panel” on page 794
- “TEMPLATE Options (2 of 2) panel” on page 781
- “UNLOAD Options panel” on page 787
- “Template Mapping panel” on page 783
- “TEMPLATE Options (2 of 2) panel” on page 781

### Null indicator byte processing

The DB2 UNLOAD utility data format uses a single byte for the DB2 null value, located immediately before the data for each nullable column, in the output data set. The value in this byte is set to X'00' if the column contains a value and X'FF' when the column contains the DB2 null value. The DB2 UNLOAD utility automatically places the appropriate value in the null indicator byte in the output data set.

FM/DB2 automatically generates a File Manager "base" template when the template processing option is set to 3 or 4 on the “To” panel. This template includes fields for the null indicator bytes as appropriate.

When a copybook is used to describe the output data, FM/DB2 attempts to generate a reasonable mapping between the template for the DB2 object and the template for the output data set. The data format used by the DB2 UNLOAD utility is fixed, therefore the data format described by the copybook should reflect this format, to avoid data mismatch problems.

The DB2 null indicator byte in a user-specified copybook is successfully mapped when:

- It immediately precedes a nonvarying target field, or precedes the length field of a varying target field.
- The null indicator byte does not overlap any field that has already been mapped.
- The field name for the null indicator byte contains "NULL". In this case, FM/DB2 documents the mapping as comments in the generated JCL for the DB2 UNLOAD utility.

Other types of mapping, or null indicator byte usage are not supported, including:

- A copybook that would map a nullable DB2 column to a data field without a null indicator byte.
- A copybook that would map a not-nullable DB2 column to a data field with a null indicator byte.
- A copybook that uses null indicator fields that are not one byte in length, or are not located immediately before the data for the column to which they pertain.

### RELATED REFERENCES

- “UNLOAD Options panel” on page 787

### UNLOAD (tables) with LISTDEF specified

If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the UNLOAD Utility (Tables) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the UNLOAD statement.

Figure 88 shows an example of generated JCL for unloading a table object where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      FMNUSER.SPFTEMP1.CNTL                      Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO UNLOAD TABLE LIST
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000016 //*****
000017 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000018 //*
000019 //*****
000020 //* STEP UNLOAD1: UNLOAD TABLE LIST LDEFNAME1
000021 //*****
000022 //UNLOAD1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000023 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000024 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000025 //DSNUPROC.SYSREC00 DD DISP=(NEW,CATLG,DELETE),
000026 //          UNIT=,SPACE=(&ALLOC,&PRI,&SEC),RLSE),
000027 //          DSN=FMNUSER.LDEFNAME.D2601243.SYSREC
000028 //DSNUPROC.SYSPUNCH DD DISP=(NEW,CATLG,DELETE), UTIL CONTRL DATA
000029 //          UNIT=,SPACE=(TRK,(1,1),RLSE),
000030 //          DSN=FMNUSER.LDEFNAME.D2601243.SYSPUNCH
000031 //DSNUPROC.SYSIN DD *
000032 UNLOAD LIST LDEFNAME1
000033 UNLDDN(SYSREC00)
000034 NOSUBS
000035 /*
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left     F11=Right     F12=Cancel

```

Figure 88. Sample JCL generated for UNLOAD (Tables) with LISTDEF specified

### RELATED REFERENCES

“UNLOAD Utility (Tables) with LISTDEF panel” on page 795

## UNLOAD (table spaces)

This option corresponds to the UNLOAD TABLESPACE form of the UNLOAD utility control statement.

When you use UNLOAD (table spaces), you can use the following combinations of filter fields on the DB2 Utilities panel:

- Database name, or Table/index space name.

If you entered information in any of the preceding filter fields on the DB2 Utilities panel, the displayed rows are limited to the DB2 objects that match the information you specified.

Figure 89 shows an example of the UNLOAD Utility (Table Spaces) panel with a list of table spaces.

To select an index space from those displayed, type S in the **SEL** column. An asterisk (\*) in the **PRC** column indicates selected table spaces.

Process		Options		Utilities		Help					
FM/DB2 (DFA2)				UNLOAD Utility (Table Spaces)				Row 1 to 4 of 4			
S	P	Table	Part'n	Range		Number	Number	Allocation			
e	R	Database	Space	One	Two	Part'n	Tables	Primary	Secdry	Space	
l	C	Name	Name								
S		BILLDB1	ACT	2	3	1	1	3	3	48	
-		BILLDB1	ACT	-	-	2	1	5	5	144	
-		BILLDB1	ACT	-	-	3	1	3	3	144	
-		BILLDB1	ACT	-	-	4	1	5	5	48	
***** Bottom of data *****											
Command ==>											
F1=Help		F2=Split		F3=Exit		F7=Backward		F8=Forward		F9=Swap	
F12=Cancel											

Figure 89. UNLOAD Utility (Table Spaces) panel showing list of table spaces.

If only a single row results from the filter values you entered, the row is marked as selected, and is shown with an asterisk (\*) in the **PRC** field.

If you entered a table space name containing wildcards, the ISPF part of the UNLOAD Utility panel is initialized with one row for each of the table space names that match the input specification. Note that if you did not specify a database name on the DB2 utilities panel, or specified a generic name, the list may contain table spaces from more than one database.

To select a table spaces to copy, type an "S" in the **SEL** field. Selected table spaces have an asterisk (\*) in the **PRC** field.

You can modify the UNLOAD utility statement by changing the value in the **Part'n Range** input field.

In Figure 89, the input shows that a range of partitions (from 2 to 3) is to be unloaded.

Figure 90 on page 318 shows an example of generated JCL for unloading a table object where a LISTDEF has been specified.



```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO UNLOAD TABLESPACE
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000016 //*****
000017 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000018 //*
000019 //*****
000020 //* STEP UNLOAD1: UNLOAD TABLESPACE DSN8D81A.DSN8S81D
000021 //*****
000022 //UNLOAD1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000023 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000024 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000025 //DSNUPROC.SYSREC00 DD DISP=(NEW,CATLG,DELETE),
000026 //          UNIT=SYSALLDA,SPACE=(&ALLOC,(&PRI,&SEC),RLSE),
000027 //          DSN=FMNUSER.DSN8D81A.DSN8S81D.D2581554.SYSREC
000028 //DSNUPROC.SYSPUNCH DD DISP=(NEW,CATLG,DELETE), UTIL CONTRL DATA
000029 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE),
000030 //          DSN=FMNUSER.DSN8D81A.DSN8S81D.D2581554.SYSPUNCH
000031 //DSNUPROC.SYSIN DD *
000032 UNLOAD TABLESPACE DSN8D81A.DSN8S81D
000033 UNLDDN(SYSREC00)
000034 NOSUBS
000035 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help      F2=Split   F3=Exit    F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap    F10=Left  F11=Right   F12=Cancel

```

Figure 90. Sample JCL generated for UNLOAD Utility (Table Spaces)

### RELATED REFERENCES

- “Column Selection/Edit panel” on page 419
- “UNLOAD Utility (Table Spaces) panel” on page 790
- “TEMPLATE Options (2 of 2) panel” on page 781
- “UNLOAD Options panel” on page 787
- “Template Mapping panel” on page 783

## UNLOAD (table spaces) with LISTDEF specified

If you specified the name of a LISTDEF on the DB2 Utilities panel, FM/DB2 displays an alternative form of the UNLOAD Utility (Table Spaces) panel showing the specified LISTDEF and a number of editable fields that correspond to keywords in the UNLOAD statement.

Figure 91 on page 319 shows an example of generated JCL for unloading a table space object where a LISTDEF has been specified.

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT          FMNUSER.SPFTEMP1.CNTL          Columns 00001 00072
***** ***** Top of Data *****
000001 //FMNUSERB JOB (IBMGSA),
000002 //          FMNUSER,MSGCLASS=A,
000003 //          NOTIFY=FMNUSER,CLASS=A,
000004 //          MSGLEVEL=(1,1)
000005 //*
000006 //          JCLLIB ORDER=(DB2V810.DFA2.PROCLIB)
000007 //*
000008 //*****
000009 //*
000010 //* FM/DB2 GENERATED JOB TO UNLOAD TABLESPACE LIST
000011 //*
000012 //*****
000013 //*
000014 //*****
000015 //* STEP SETPARM: OVERRIDE ANY GLOBAL DATASET SIZING VALUES HERE
000016 //*****
000017 //SETPARM SET ALLOC='TRK',PRI='1',SEC='1'
000018 //*
000019 //*****
000020 //* STEP UNLOAD1: UNLOAD TABLESPACE LIST LDEF1
000021 //*****
000022 //UNLOAD1 EXEC DSNUPROC,SYSTEM=DFA2,UID='FMNUSER'
000023 //DSNUPROC.STEPLIB DD DSN=DB2V810.DFA2.SDSNEXIT,DISP=SHR
000024 //          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
000025 //DSNUPROC.SYSREC00 DD DISP=(NEW,CATLG,DELETE),
000026 //          UNIT=SYSALLDA,SPACE=(&ALLOC,(&PRI,&SEC),RLSE),
000027 //          DSN=FMNUSER.LDEF1.D2581557.SYSREC
000028 //DSNUPROC.SYSPUNCH DD DISP=(NEW,CATLG,DELETE), UTIL CONTRL DATA
000029 //          UNIT=SYSALLDA,SPACE=(TRK,(1,1),RLSE),
000030 //          DSN=FMNUSER.LDEF1.D2581557.SYSPUNCH
000031 //DSNUPROC.SYSIN DD *
000032 UNLOAD TABLESPACE LIST LDEF1
000033 UNLDDN(SYSREC00)
000034 NOSUBS
000035 /*
***** ***** Bottom of Data *****

Command ==>          Scroll ==> PAGE
F1=Help    F2=Split   F3=Exit    F5=Rfind   F6=Rchange  F7=Up
F8=Down    F9=Swap    F10=Left  F11=Right  F12=Cancel

```

Figure 91. Sample JCL generated for UNLOAD (Table Space) with LISTDEF specified

#### RELATED REFERENCES

“UNLOAD Utility (Table Spaces) with LISTDEF panel” on page 791

## Generating DB2 utility jobs

---

## Chapter 12. Working with SQL statements

When you want to:

- Issue any dynamic SQL statement from your panel or from a data set, or
- Build and run an SQL SELECT statement interactively

you can use the SQL prototyping, execution and analysis option (4).

### Notes:

1. This chapter does not attempt to describe the syntax of SQL statements. For full details, see the *DB2 UDB for z/OS SQL Reference*.

To display the SQL Prototyping, Execution and Analysis panel, from the Primary Option Menu panel select option 4 (SQL).

### RELATED TASKS

“Should you use basic or advanced SQL prototyping?”

“Using basic SQL prototyping”

“Using advanced SQL prototyping” on page 328

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“SQL Prototyping, Execution and Analysis panel” on page 749

---

## Should you use basic or advanced SQL prototyping?

If you only need to build a simple SQL SELECT statement, basic SELECT prototyping (4.1) is probably sufficient for your needs. If you need to build a more complex statement, use advanced SELECT prototyping (4.2).

### RELATED REFERENCES

“Using basic SQL prototyping”

“Using advanced SQL prototyping” on page 328

---

## Using basic SQL prototyping

Basic SELECT prototyping uses two panels: you use the primary panel to specify the table (or tables) that contain the data you want to retrieve (FROM clause), and the secondary panel to specify the columns you want to show, any qualifying information (WHERE clauses), and the sequence in which you want the data to be shown (ORDER BY clauses).

To display the primary Basic SELECT Prototyping panel, select option 1 (Basic) on the SQL Prototyping, Execution and Analysis panel.

## Should you use basic or advanced SQL prototyping?

```

Process  Options  Utilities  Help
-----
FM/DB2 (DFA2)          Basic SELECT Prototyping

Enter the name(s) of the table(s) from which to retrieve data:
  Owner      Name
#1 DSN8610   + EMP
#2 DSN8610   + EEMP
#3           +
#4           +
#5           +
#6           +
#7           +
#8           +
#9           +
#10          +
#11          +
#12          +
#13          +
#14          +
#15          +
+ Location
+ Database
+ Tbl spc.

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

```

Figure 92. Primary Basic SELECT Prototyping panel

On this panel you can specify up to 15 tables, views, synonyms, or aliases that are used to construct a FROM clause as the starting point for prototyping a SELECT statement. If you specify more than one object, the result table produced by the SELECT statement is an *inner join* of all the objects. (For further information about joined tables, see the *DB2 UDB for z/OS SQL Reference*.)

The columns and rows included in the result table are determined by the SELECT and WHERE clauses specified on the secondary Basic SELECT Prototyping panel, which is displayed when you specify the objects and press Enter. The examples in this section use the tables DSN8610.EMP and DSN8610.EEMP.

You cannot modify the entry-line numbers at the left of the panel (#1, #2, and so on). The purpose of the entry-line number is to provide a *correlation name* for the table name on the line. The correlation name is used in the prototyping process to identify the table. For example, the first table name (DSN8610.EMP) has a correlation name #1.

Tables and views are specified by optionally entering values in the **Location**, **Database**, **Tbl spc.** (table space), and **Owner** fields, and entering values in the **Name** fields. Synonyms are specified by entering values in the **Name** fields. If a value is entered in the **Owner** field for a synonym, it must be the current SQL ID. All of the fields support catalog searches by specifying a pattern in the field.

After you have specified the table names on the primary Basic SELECT Prototyping panel, press Enter to display the secondary Basic SELECT Prototyping panel.

## Should you use basic or advanced SQL prototyping?

Process	Options	Utilities	Help
FM/DB2 (DBA2)	Basic SELECT Prototyping	Row 1 to 8 of 14	
SELECT ? FROM DSN8610.EMP #1, DSN8610.EEMP #2 WHERE ? ORDER BY ?			
Row count	ALL	Number of rows to display	
Select columns (S/A/D) or enter predicates to build the SELECT statement:			
S LOp (	Tab Column Name	+ Data Type(length)	+ Op Value )
---	#1 BIRTHDATE	DATE(4)	---
---	#1 BONUS	DECIMAL(9,2)	---
---	#1 COMM	DECIMAL(9,2)	---
---	#1 EDLEVEL	SMALLINT(2)	---
---	#1 EMPNO	CHAR(6)	---
---	#1 FIRSTNME	VARCHAR(12)	---
---	#1 HIREDATE	DATE(4)	---
---	#1 JOB	CHAR(8)	---
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F8=Forward	F9=Swap	F10=Left	F11=Right
			Scroll PAGE
			F7=Backward
			F6=Execute
			F12=Cancel

Figure 93. Secondary Basic SELECT Prototyping panel

The secondary Basic SELECT Prototyping panel shows a partially-built SELECT statement (at the top of the panel) with a FROM clause containing the names of the tables you specified in the primary Basic SELECT Prototyping panel (in this case, the tables DSN8610.EMP and DSN8610.EEMP, using the predefined correlation names #1 and #2).

At this stage, a “?” is displayed in the SELECT, WHERE, and ORDER BY clauses indicating you have not yet specified any data for these clauses. (Before you run the generated SELECT statement, you *must* specify data for the SELECT clause by selecting one or more columns; the WHERE and ORDER BY clauses are ignored if they contain no data.)

**Note:** FM/DB2 displays up to two lines of each of the SELECT, FROM, WHERE, and ORDER BY clauses (at the top of the secondary Basic SELECT Prototyping panel). To view the complete SELECT statement if any of these clauses extends beyond two lines of your panel (FM/DB2 shows “...” to indicate not all of the clause is displayed), use the SQL primary command.

To limit the number of rows returned in the result set when the SQL statement is executed, specify the maximum number of rows in the **Row count** field.

The following primary commands are available when you use basic SELECT prototyping:

- ALL
- CANCEL
- EXECUTE
- RESET
- SQL
- UNDO

## Should you use basic or advanced SQL prototyping?

### RELATED TASKS

“Specifying a data set and a member name” on page 34

### RELATED REFERENCES

“SQL Prototyping, Execution and Analysis panel” on page 749

“Basic SELECT Prototyping panel” on page 399

“ALL primary command” on page 803

“CANCEL primary command” on page 806

“EXECUTE primary command” on page 821

“RESET primary command” on page 847

“SQL primary command” on page 854

“UNDO primary command” on page 857

## Example of using basic SELECT prototyping

We'll use an example to show how to use basic SELECT prototyping to build a SELECT statement and then run it to see the results.

Suppose you want to list details of all employees in the table DSN8610.EMP whose:

- Department is not “E01”, and
- JOB is “Manager” or SALARY is at least \$40,000

For each employee, you want to show the following columns from the table DSN8610.EMP (correlation name #1):

LASTNAME  
FIRSTNAME  
WORKDEPT  
JOB  
SALARY (in ascending sequence)

and the following column from the table DSN8610.EEMP (correlation name #2):  
BONUS

You can specify details on the secondary Basic SELECT Prototyping panel for more than one column at a time. However, for the purpose of clarity, the following steps show the details being entered one at a time for each column, and the resultant SELECT statement that FM/DB2 progressively builds (and displays at the top of the panel) after you press Enter.

## Should you use basic or advanced SQL prototyping?

### Step 1

Select the column, LASTNAME, by typing S in the S entry field:

S	LOp	( Tab Column Name	Data Type(length)	Op Value	)
⋮					
s	—	#1 LASTNAME	VARCHAR(15)	_____	—
⋮					

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (LASTNAME) to the SELECT clause.

```
SELECT #1.LASTNAME
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE ?
ORDER BY ?
```

### Step 2

Select the column, FIRSTNME, by typing S in the S entry field:

S	LOp	( Tab Column Name	Data Type(length)	Op Value	)
⋮					
s	—	#1 FIRSTNME	VARCHAR(12)	_____	—
⋮					

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (FIRSTNME) to the SELECT clause.

```
SELECT #1.LASTNAME, #1.FIRSTNME
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE ?                               STNAME <> 'SMITH'
ORDER BY ?
```



## Should you use basic or advanced SQL prototyping?

### Step 3

To exclude employees in WORKDEPT "E01":

- Select the column, WORKDEPT, by typing S in the **S** entry field,
- Type the expression operator <> in the **Op** entry field, and
- Type E01 in the **Value** entry field:

S	L	Op	(	Tab	Column Name	Data Type(length)	Op	Value	)
s				#1	WORKDEPT	CHAR(3)	<>	e01	

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (WORKDEPT) to the SELECT clause.
- Adding a predicate, #1.WORKDEPT <> 'E01', to the WHERE clause.

```
SELECT #1.LASTNAME, #1.FIRSTNME, #1.WORKDEPT
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE #1.WORKDEPT <> 'E01'
ORDER BY ?
```

### Step 4

To select employees with a JOB of "Manager":

- Select the column, JOB, by typing S in the **S** entry field,
- Type an opening parenthesis, (, in the **(** entry field, and
- Type MANAGER in the **Value** entry field:

S	L	Op	(	Tab	Column Name	Data Type(length)	Op	Value	)
s			(	#1	JOB	CHAR(8)		manager	

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (JOB) to the SELECT clause.
- Inserting the default logical operator AND before adding a predicate, (#1.JOB = 'MANAGER', to the WHERE clause.

```
SELECT #1.LASTNAME, #1.FIRSTNME, #1.WORKDEPT, #1.JOB
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE #1.WORKDEPT <> 'E01' AND (#1.JOB = 'MANAGER'
ORDER BY ?
```

### Step 5

To also select employees with a SALARY of at least \$40,000 (regardless of their JOB), and to specify that the results are to be shown in ascending sequence of SALARY:

- Select the column, SALARY, for ascending sequence by typing A in the S entry field,
- Type the logical operator, OR, in the LOp entry field,
- Type the expression operator >= in the Op entry field, and
- Type 40000 in the Value entry field.
- Type a closing parenthesis in the ) entry field:

S	LOp	( Tab Column Name	Data Type(length)	Op	Value	)
⋮						
a	or	#1 SALARY	DECIMAL(9,2)	>=	40000	)
⋮						

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (SALARY) to the SELECT clause.
- Adding a predicate, OR #1.SALARY >= 40000), to the WHERE clause.
- Adding the name of the selected column (SALARY), and the keyword ASC, to the ORDER BY clause.

```
SELECT #1.LASTNAME, #1.FIRSTNME, #1.WORKDEPT, #1.JOB, #1.SALARY
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE #1.WORKDEPT <> 'E01' AND (#1.JOB = 'MANAGER' OR #1.SALARY >= 40000)
ORDER BY #1.SALARY ASC
```

### Step 6

Select the column, BONUS (from the table DSN8610.EEMP), by typing S in the S entry field:

S	LOp	( Tab Column Name	Data Type(length)	Op	Value	)
⋮						
s		#2 BONUS	DECIMAL(9,2)			)
⋮						

FM/DB2 updates the generated SELECT statement by:

- Adding the name of the selected column (BONUS) to the SELECT clause.

```
SELECT #1.LASTNAME, #1.FIRSTNME, #1.WORKDEPT, #1.JOB, #1.SALARY, #2.BONUS
FROM DSN8610.EMP #1, DSN8610.EEMP #2
WHERE #1.WORKDEPT <> 'E01' AND (#1.JOB = 'MANAGER' OR #1.SALARY >= 40000)
ORDER BY #1.SALARY ASC
```

Figure 94 on page 328 shows how the Basic SELECT Prototyping panel is displayed if you had entered the details for all of the columns at the same time.

**Note:** The effect of entering details for one column at a time (as in the previous steps) can be different to when you enter details for more than one column at a time.

For example, if you enter the details as shown in Figure 94 on page 328, FIRSTNME is shown before LASTNAME in the generated SELECT

## Should you use basic or advanced SQL prototyping?

statement.

Process	Options	Utilities	Help		
FM/DB2 (DFA2)	Basic SELECT Prototyping	Row 1 to 8 of 14			
SELECT ? FROM DSN8610.EMP #1, DSN8610.EEMP #2 WHERE ? ORDER BY ?					
Row count	ALL	Number of rows to display			
Select columns (S/A/D) or enter predicates to build the SELECT statement:					
S	LOp ( Tab Column Name	+ Data Type(length)	+ Op Value )		
:	:	:	:		
s	_ #1 FIRSTNAME	VARCHAR(12)	_____ -		
:	:	:	:		
s	( #1 JOB	CHAR(8)	manager_____ -		
s	_ #1 LASTNAME	VARCHAR(15)	_____ -		
:	:	:	:		
a or	_ #1 SALARY	DECIMAL(9,2)	>= 40000_____ )		
:	:	:	:		
s	_ #1 WORKDEPT	CHAR(3)	<> e01_____ -		
:	:	:	:		
s	_ #2 BONUS	DECIMAL(9,2)	_____ -		
:	:	:	:		
Command ==> _____ Scroll PAGE					
F1=Help	F2=Split	F3=Exit	F4=Expand	F6=Execute	F7=Backward
F8=Forward	F9=Swap	F10=Left	F11=Right	F12=Cancel	

Figure 94. Details entered together on the secondary Basic SELECT Prototyping panel

### RELATED TASKS

“Executing a SELECT statement after you have built it using prototyping” on page 353

### RELATED REFERENCES

“Basic SELECT Prototyping panel” on page 399

“SQL primary command” on page 854

## Using advanced SQL prototyping

In this section, the following terms are used:

- |                 |  |
|-----------------|--|
| <b>clause</b>   | A distinct part of the SELECT statement, such as a WHERE clause.   |
| <b>element</b>  | A single item within the syntax (such as a keyword, variable, reference to a fragment, or special character).  |
| <b>fragment</b> | A portion of the SELECT statement syntax. Fragments can contain references to other fragments.   |
| <b>instance</b> | A repeatable item that has been assigned a value. For example, the following GROUP BY clause contains three instances:<br>GROUP BY COL1 , COL2 , COL3                        |
| <b>keyword</b>  | An item that must be spelled exactly as shown. Keywords (for example, FROM) are shown in uppercase in the syntax diagram displayed on the Advanced SELECT Prototyping panel. |

**repeatable item**

An item that can be repeated within the syntax. Repeatable items are indicated by a repeat arrow that can contain a repeat separator. For example:

**variable**

An element that requires you to enter a value.

Advanced SELECT prototyping lets you develop a complex SELECT statement using a recursive set of specification panels.

Each panel displays a fragment of the SELECT statement syntax, presented in the form of a syntax diagram (in a similar way to a reference manual). You build the SELECT statement by selecting the optional fragments of the syntax you want to use, discarding those that you do not need, and entering items where required. The panels guide you through the syntax and ensure that you include all the required fragments of the syntax. Each panel shows the partly-formed SELECT statement as you progressively build it.

As you build the SELECT statement, you can return to any part of the statement to:

- Change values.
- Add a fragment of syntax.
- Remove a fragment of syntax.

**Notes:**

1. If you have a 24-line screen, to see the SQL statement as it is being built you must remove the function key lines from your display by entering PFSHOW OFF.
2. If the generated SQL statement extends over several lines, you can scroll forward or backward with the Forward function key (F8) and Backward function key (F7) respectively.

To display the Advanced SELECT Prototyping panel, select option 2 (Advanced) on the SQL Prototyping, Execution and Analysis panel.

The following primary commands are available when you use advanced SELECT prototyping:

- CANCEL
- DESELECT
- EXECUTE
- INSRPT
- NEXTRPT
- PREVRPT
- SQL

**RELATED TASKS**

“Example 2 (Changing the SQL statement)” on page 336

“Example 3 (Adding to the SQL statement)” on page 337

“Example 4 (Removing part of the SQL statement)” on page 343

“Executing a SELECT statement after you have built it using prototyping” on page 353

### RELATED REFERENCES

- “SQL Prototyping, Execution and Analysis panel” on page 749
- “Advanced SELECT Prototyping panel” on page 375
- “CANCEL primary command” on page 806
- “DESELECT primary command” on page 814
- “EXECUTE primary command” on page 821
- “INSRPT primary command” on page 834
- “NEXTRPT primary command” on page 840
- “PREVRPT primary command” on page 843
- “SQL primary command” on page 854

## Tabbing and color-coding

Advanced SELECT prototyping uses colors to help you:

- Navigate the SELECT statement syntax.
- Identify current and non-current parts of the generated SELECT statement, particularly for fragments that contain repeatable items.

### Syntax diagram color-coding

To help you navigate the syntax, advanced SELECT prototyping uses a tabbing and color-coding scheme.

You can tab to those parts of the syntax where you are able to either make a choice or enter a variable. You cannot tab to a required keyword.

Advanced SELECT prototyping uses the following system of colors for the syntax diagram:

<b>RED</b>	References to required fragments that have not been completed, or references to optional fragments that have been selected but not completed.
<b>WHITE</b>	Required keywords. You cannot select these, or tab to them.
<b>GREEN</b>	In general terms, indicates a reference to a completed fragment of the syntax: <ul style="list-style-type: none"><li>• Selected optional keywords (otherwise yellow)</li><li>• Required fragments whose subselections have been made to enable them to be resolved (otherwise red)</li><li>• Optional fragments whose subselections have been made to enable them to be resolved (otherwise yellow)</li></ul>
<b>YELLOW</b>	Optional keywords and fragments that are not currently selected (green when selected and complete; red when selected and incomplete).

### Generated SELECT statement color-coding

To help you recognize which part of the generated SELECT statement is current (the part that is accessible to you) and, in the case of repeatable items, which is the current repeatable item, advanced SELECT prototyping uses the following system of colors for the generated SELECT statement:

<b>GREEN</b>	The current part of the SELECT statement and which, therefore, is accessible to you. This includes any data that is part of a current repetition.
<b>YELLOW</b>	Part of a repetition that is not current. To make a non-current

(YELLOW) current (GREEN), use the PrvRpt function key (F10) or NxtRpt function key (F11) function keys.

**WHITE** Parts of the SELECT statement that are above the level of the current fragment.

#### RELATED REFERENCES

“Advanced SELECT Prototyping panel” on page 375

## Using the advanced SELECT prototyping panels to build a SELECT statement

If you use advanced SELECT prototyping, you place the cursor on the part of the syntax you want and press Enter. To specify a value for a variable, you type the name in a panel. As you proceed to build the SELECT statement, FM/DB2 shows the partly-built statement within the panel you are viewing. You repeat this process until you have built the complete SELECT statement.

### Example 1 (Building a simple SQL statement)

The following series of panels show each stage of using advanced SELECT prototyping to build an SQL statement to show all rows of the table PARTS.

1. Select option 2 (Advanced) from the SQL Prototyping and Execution panel to display the initial Advanced SELECT Prototyping panel.
2. Move the cursor to the **fullselect** fragment.
3. Press Enter. The syntax for the full SELECT clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: full select clause		Status: clause incomplete	
<pre> subselect └─ (- fullselect -)     UNION     └─ UNION ALL         subselect         └─ (- fullselect -) </pre>			
<div>Command ==&gt;</div> <div> <div>F1=Help</div> <div>F2=Split</div> <div>F3=Exit</div> <div>F4=Deselect</div> <div>F5=InsRpt</div> <div>F6=Executed</div> </div> <div> <div>F7=Backward</div> <div>F8=Forward</div> <div>F9=Swap</div> <div>F10=PrvRpt</div> <div>F11=NxtRpt</div> <div>F12=Cancel</div> </div> <div>Scroll PAGE</div>			

4. Move the cursor to the **subselect** fragment.
5. Press Enter. The syntax for the subselect clause is displayed.

## Using advanced SQL prototyping

[illegible]

Notice that the **select** and **from** fragments are displayed on your screen in *red* indicating that the subsections relating to these fragments must be completed before these fragments can be resolved.

6. Move the cursor to the **select** fragment.
7. Press Enter. The syntax for the SELECT clause is displayed.

_Process	_Options	_Utilities	_Help			
FM/DB2 (DFA2)		Advanced SELECT Prototyping				
Prototyping: select clause		Status: clause incomplete				
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;">- SELECT</div> <div style="border-left: 1px solid black; padding-left: 10px; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="border-right: 1px solid black; padding-right: 5px; margin-right: 5px;">ALL</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 5px; margin-right: 5px;">DISTINCT</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> </div> <div style="margin-left: 10px;"> <div style="margin-bottom: 5px;">*</div> <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">←</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> <div style="margin-bottom: 5px;">expression</div> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr><td style="padding: 2px 5px;">table</td></tr> <tr><td style="padding: 2px 5px;">view</td></tr> <tr><td style="padding: 2px 5px;">correlation</td></tr> </table> </div> <div style="margin-right: 10px;">.*</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> </div> </div> <div style="margin-left: 10px;"> <div style="margin-bottom: 5px;">AS</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-bottom: 5px;">column</div> </div> </div>				table	view	correlation
table						
view						
correlation						

SELECT ALL			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F6=Executed
		F11=NxtRpt	F12=Cancel

The panel now shows the partly-built SELECT statement:

SELECT ALL

This is because:

- The keyword **SELECT** is a required keyword for this fragment. As you have selected this fragment, FM/DB2 has entered it into the **SELECT** statement.
- **ALL** is a default keyword (and, in this case, what you want).

8. Move the cursor to the asterisk (\*).

9. Press Enter.

Process	Options	Utilities	Help
FM/DB2 (DFA2)      Advanced SELECT Prototyping			
Prototyping: select clause		Status: clause complete	
<div> <div> <div>SELECT</div> <div> <div>ALL</div> <div>DISTINCT</div> </div> </div> <div> <div>*</div> <div>← ,</div> <div>expression</div> <div> <div>AS</div> <div>column</div> </div> <div> <div>table</div> <div>view</div> <div>correlation</div> </div> <div>.*</div> </div> </div>			
SELECT ALL *			
Command ==>      Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

The panel now shows the partly-built SELECT statement:

SELECT ALL \*

10. Press the Exit function key (F3). The syntax for the subselect clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2)      Advanced SELECT Prototyping			
Prototyping: subselect clause		Status: clause incomplete	
<div> <div>select</div> <div>from</div> <div> <div>where</div> <div>groupby</div> <div>having</div> </div> </div>			
SELECT ALL *			
Command ==>      Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

Notice that the **select** fragment has now changed on your screen from red to *green* indicating that the subsection relating to this fragment has been completed and this fragment can be resolved.

You now need to complete the subsection relating to the **from** fragment.

11. Move the cursor to the **from** fragment.

12. Press Enter. The syntax for the FROM clause is displayed.



## Using advanced SQL prototyping

```

  _Process  _Options  _Utilities  _Help
  FM/DB2 (DFA2)          Advanced SELECT Prototyping

  Prototyping: from clause                                Status: clause incomplete

  - FROM — tabref —
    ↖

```

```

SELECT ALL * FROM

```

```

Command ==>
F1=Help      F2=Split    F3=Exit      F4=Deselect  F5=InsRpt    F6=Executed
F7=Backward  F8=Forward   F9=Swap      F10=PrvRpt  F11=NxtRpt   F12=Cancel

```

The panel now shows the partly-built SELECT statement:

SELECT ALL \* FROM

This is because the keyword FROM is a required keyword.

Again, notice that the **tabref** fragment is displayed on your screen in *red*, indicating that the subsection relating to this fragment is yet to be completed before this fragment can be resolved

13. Move the cursor to the **tabref** fragment.
14. Press Enter. The syntax for the table specification clause is displayed.

_Process	_Options	_Utilities	_Help																																																	
FM/DB2 (DFA2) <span style="float: right;">Advanced SELECT Prototyping</span>																																																				
Prototyping: table reference clause		Status: clause incomplete																																																		
<div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15px;">┌</td> <td style="width: 10px;">table</td> <td style="width: 10px;">┐</td> <td style="width: 10px;"></td> <td style="width: 10px;">┌</td> <td style="width: 10px;">correl</td> <td style="width: 10px;">┐</td> </tr> <tr> <td>┌</td> <td>view</td> <td>┐</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>┌</td> <td>tablocref</td> <td>┐</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>┌</td> <td>TABLE</td> <td>┐</td> <td>(- fullselect -)</td> <td>┐</td> <td>correl</td> <td>┐</td> </tr> <tr> <td>┌</td> <td>tabfunref</td> <td>┐</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>┌</td> <td>itableref</td> <td>┐</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>┌</td> <td>joinedtable</td> <td>┐</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </div>				┌	table	┐		┌	correl	┐	┌	view	┐					┌	tablocref	┐					┌	TABLE	┐	(- fullselect -)	┐	correl	┐	┌	tabfunref	┐					┌	itableref	┐					┌	joinedtable	┐				
┌	table	┐		┌	correl	┐																																														
┌	view	┐																																																		
┌	tablocref	┐																																																		
┌	TABLE	┐	(- fullselect -)	┐	correl	┐																																														
┌	tabfunref	┐																																																		
┌	itableref	┐																																																		
┌	joinedtable	┐																																																		
SELECT ALL * FROM																																																				
Command ==> <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 0.9em;"> <span>F1=Help</span> <span>F2=Split</span> <span>F3=Exit</span> <span>F4=Deselect</span> <span>F5=InsRpt</span> <span>F6=Execute</span> </div> <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 0.9em;"> <span>F7=Backward</span> <span>F8=Forward</span> <span>F9=Swap</span> <span>F10=PrvRpt</span> <span>F11=NxtRpt</span> <span>F12=Cancel</span> </div>																																																				

15. Move the cursor to the **table** fragment.
16. Press Enter. A panel is displayed in which you can enter a table name.
17. Type PARTS in the panel.

ProcessOptionsUtilitiesHelp

FreeForm Entry

F

P

Enter a table name to be inserted in the SQL:  
PARTS

lete

Command ==>

Scroll PAGE

F1=HelpF2=SplitF3=ExitF7=BackwardF8=Forward

F9=SwapF12=Cancel

joinedtable

SELECT ALL \* FROM

Command ==>

Scroll PAGE

F1=HelpF2=SplitF3=ExitF4=DeselectF5=InsRptF6=Executed

F7=BackwardF8=ForwardF9=SwapF10=PrvRptF11=NxtRptF12=Cancel

18. Press the Exit function key (F3). The syntax for the table specification clause is displayed.

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Advanced SELECT Prototyping

Prototyping: table reference clauseStatus: statement complete

table

view

tablocref

correl

TABLE

tabfunref

itableref

joinedtable

(- fullselect -)

correl

SELECT ALL \* FROM PARTS

Command ==>

Scroll PAGE

F1=HelpF2=SplitF3=ExitF4=DeselectF5=InsRptF6=Execute

F7=BackwardF8=ForwardF9=SwapF10=PrvRptF11=NxtRptF12=Cancel

Figure 95. Advanced SELECT prototyping: the completed statement (example 1)

The panel shows the completed SELECT statement:  
SELECT ALL \* FROM PARTS

Notice that the **table** fragment has now changed on your screen from red to green, indicating that the subsection relating to this fragment has been completed and the fragment can be resolved. Also notice that the status indicator (**Status:**) shows “statement complete”.

## Using advanced SQL prototyping

### RELATED TASKS

“Executing a SELECT statement after you have built it using prototyping” on page 353

### RELATED REFERENCES

“SQL Prototyping, Execution and Analysis panel” on page 749

“Advanced SELECT Prototyping panel” on page 375

## Changing the SQL statement

At any stage of building an SQL statement, you can:

- Change part of the statement by positioning the cursor on the relevant part of the SELECT statement and pressing Enter. FM/DB2 returns you to that part of the syntax. You can then make the required change.
- Add an extra fragment to the statement by positioning the cursor on the relevant part of the SELECT statement and pressing Enter. FM/DB2 returns you to that part of the syntax. You can then add the required fragment.
- Remove a part of the statement by pressing the Deselect function key (F4).

### Example 2 (Changing the SQL statement)

Having built the SQL statement in the previous exercise to show *all* rows of the table PARTS (see Figure 95 on page 335), suppose you want to change this to eliminate all but one of each set of duplicate rows:

1. Move the cursor under the word ALL in the generated statement.
2. Press Enter. The syntax for the SELECT clause is displayed.

The screenshot shows the FM/DB2 Advanced SELECT Prototyping panel. At the top, there are menu options: Process, Options, Utilities, and Help. Below this, the title bar reads 'FM/DB2 (DFA2) Advanced SELECT Prototyping'. The main area displays 'Prototyping: select clause' on the left and 'Status: statement complete' on the right. The SQL statement 'SELECT ALL \* FROM PARTS' is shown. A diagram illustrates the syntax for the SELECT clause, with a cursor positioned under the word 'ALL'. The diagram shows a tree structure for the SELECT clause, with 'ALL' and 'DISTINCT' as options. The main branch is 'expression', which can be a 'table', 'view', or 'correlation'. A 'table' can be further specified as 'AS' or 'column'. The diagram also shows a '\*' symbol for a join or aggregate function.

SELECT ALL \* FROM PARTS

Command ==>

			Scroll PAGE		
F1=Help	F2=Split	F3=Exit	F4=Deselect	F5=InsRpt	F6=Executed
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

3. Move the cursor to the keyword **DISTINCT**.
4. Press Enter. DISTINCT replaces ALL in the built SELECT statement.

Process	Options	Utilities	Help
FM/DB2 (DFA2)      Advanced SELECT Prototyping			
Prototyping: select clause		Status: statement complete	
<pre> - SELECT [ ALL ]         [ DISTINCT ] *                 expression                 AS column                 table                 view                 correlation                 . * </pre>			
SELECT DISTINCT * FROM PARTS			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F11=NxtRpt
		F6=Executed	F12=Cancel

Figure 96. Advanced: the completed statement (example 2)

The panel shows the completed SELECT statement:

SELECT DISTINCT \* FROM PARTS

#### RELATED TASKS

“Example 1 (Building a simple SQL statement)” on page 331

“Executing a SELECT statement after you have built it using prototyping” on page 353

### Example 3 (Adding to the SQL statement)

Suppose now that you want to add a condition to the SQL statement in the previous exercise (see Figure 96) to show only rows of the table PARTS with a part number greater than 12456:

1. Press the Exit function key (F3) to return to the syntax for the subselect clause.

Process	Options	Utilities	Help
FM/DB2 (DFA2)      Advanced SELECT Prototyping			
Prototyping: subselect clause		Status: statement complete	
<pre> - select - from [ where ] [ groupby ] [ having ] </pre>			
SELECT DISTINCT * FROM PARTS			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F11=NxtRpt
		F6=Executed	F12=Cancel

## Using advanced SQL prototyping

2. Move the cursor to the **where** fragment.
3. Press Enter. The syntax for the WHERE clause is displayed.

```

  _Process   _Options  _Utilities  _Help
-----
FM/DB2 (DFA2)           Advanced SELECT Prototyping

Prototyping: where clause           Status: clause incomplete

- WHERE - srchcon -

SELECT DISTINCT * FROM PARTS WHERE

Command ==>
F1=Help      F2=Split    F3=Exit     F4=Deselect  F5=InsRpt   F6=Executed
F7=Backward  F8=Forward   F9=Swap     F10=PrvRpt  F11=NxtRpt  F12=Cancel

```

Notice that FM/DB2 has added the required keyword `WHERE` to the SQL statement.

4. Move the cursor to the **srchcon** fragment.
5. Press Enter. The syntax for the search condition clause is displayed.

```

  _Process   _Options   _Utilities   _Help
  FM/DB2 (DFA2)           Advanced SELECT Prototyping

  Prototyping: search condition clause           Status: clause incomplete

  ┌──────────┴──────────┐
  │ NOT │ predicate │
  │ ─── │ (- srchcon -) │
  │     │              │
  │     │ AND OR │ NOT │
  │     │ ────┴───┘   │
  │     │ predicate │
  │     │ (- srchcon -) │
  └──────────────────────────┘
  ←──────────────────────────┘

  SELECT DISTINCT * FROM PARTS WHERE

  Command ===>
  F1=Help      F2=Split      F3=Exit      F4=Deselect      F5=InsRpt      F6=Executed
  F7=Backward  F8=Forward    F9=Swap      F10=PrvRpt      F11=NxtRpt     F12=Cancel

  Scroll PAGE

```

6. Move the cursor to the first **predicate** fragment.
7. Press Enter. The syntax for the predicate clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: predicate clause		Status: clause incomplete	
<pre> basicpred ├── quantifiedpred ├── betweenpred ├── distinctpred ├── existspred ├── inpred ├── likepred └── nullpred           </pre>			
SELECT DISTINCT * FROM PARTS WHERE			
Command ==> Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

8. Move the cursor to the **basicpred** fragment.

9. Press Enter. The syntax for the basic predicate clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: basic predicate clause		Status: clause incomplete	
<pre> expression ├── = ├── &lt;&gt; ├── &lt; ├── &gt; ├── &lt;= └── &gt;= ├── (- fullselect -) ├── (- expression -) └── (- expression -)           </pre>			
SELECT DISTINCT * FROM PARTS WHERE			
Command ==> Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

10. Move the cursor to the **expression** fragment (to the left of the list of operators).

11. Press Enter. The syntax for the expression clause is displayed.

## Using advanced SQL prototyping

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: expression clause		Status: clause incomplete	
<div> <div>← oper</div> <div> <div>function</div> <div> <div>+ -</div> <div>(- expression -)</div> <div>constant</div> <div>column</div> <div>hostvar</div> <div>register</div> <div>(- scalarfullsel -)</div> <div>duration</div> <div>caseexpr</div> <div>castspec</div> <div>sequenceref</div> </div> </div> </div>			
SELECT DISTINCT * FROM PARTS WHERE			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F6=Executed
		F11=NxtRpt	F12=Cancel

12. Move the cursor to the **column** fragment.
13. Press Enter. A pop-up panel is displayed in which you can enter a column name.
14. Type PARTNO in the pop-up panel.

Process	Options	Utilities	Help
Freeform Entry			
<div> <div>Enter a column name to be inserted in the SQL:</div> <div>PARTNO</div> <div>lete</div> </div>			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward
F9=Swap	F12=Cancel	F8=Forward	
<div> <div>(- scalarfullsel -)</div> <div>duration</div> <div>caseexpr</div> <div>castspec</div> <div>sequenceref</div> </div>			
SELECT DISTINCT * FROM PARTS WHERE PARTNO			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F6=Executed
		F11=NxtRpt	F12=Cancel

15. Press the Exit function key (F3). The column name PARTNO is added to the SELECT statement.
16. Press the Exit function key (F3). The syntax for the basic predicate clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: basic predicate clause		Status: clause incomplete	
<div> <div>expression</div> <div> <div>=</div> <div>&lt;&gt;</div> <div>&lt;</div> <div>&gt;</div> <div>&lt;=</div> <div>&gt;=</div> </div> <div>expression</div> <div>(- fullselect -)</div> </div>			
<div> <div>(- expression -)</div> <div>=</div> <div>&lt;&gt;</div> <div>(- expression -)</div> </div>			
SELECT DISTINCT * FROM PARTS WHERE PARTNO			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

17. Move the cursor to the “greater than” (>) symbol.
18. Press Enter. A “greater than” (>) symbol is displayed in the partly-built SELECT statement.
19. Move the cursor to the **expression** fragment (to the right of the list of operators).
20. Press Enter. The syntax for the expression clause is displayed.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: expression clause		Status: clause incomplete	
<div> <div>← oper</div> <div> <div>+</div> <div>-</div> </div> <div>function</div> <div>(- expression -)</div> <div>constant</div> <div>column</div> <div>hostvar</div> <div>register</div> <div>(- scalarfullsel -)</div> <div>duration</div> <div>caseexpr</div> <div>castspec</div> <div>sequenceref</div> </div>			
SELECT DISTINCT * FROM PARTS WHERE PARTNO >			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F5=InsRpt	F6=Executed	F7=Backward	F8=Forward
F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

21. Move the cursor to the **constant** fragment.
22. Press Enter. A pop-up panel is displayed in which you can enter a constant.



## Using advanced SQL prototyping

23. Type 12456 in the pop-up panel.

Process	Options	Utilities	Help
Freeform Entry			
Enter a constant to be inserted in the SQL:			
12456			
lete			
Command ==>			
F1=Help F2=Split F3=Exit F7=Backward			
F8=Forward F9=Swap F12=Cancel			

SELECT DISTINCT \* FROM PARTS WHERE PARTNO >

Command ==>	Scroll PAGE
F1=Help F2=Split F3=Exit F4=Deselect F5=InsRpt F6=Executed	
F7=Backward F8=Forward F9=Swap F10=PrvRpt F11=NxtRpt F12=Cancel	

24. Press the Exit function key (F3).

The panel shows the completed SELECT statement:

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: expression clause Status: clause incomplete			
← oper			
function			
+ (- expression -)			
- constant			
column			
hostvar			
register			
(- scalarfullsel -)			
duration			
caseexpr			
castspec			
sequenceref			
SELECT DISTINCT * FROM PARTS WHERE PARTNO > 12456			
Command ==>			
F1=Help F2=Split F3=Exit F4=Deselect F5=InsRpt F6=Executed			
F7=Backward F8=Forward F9=Swap F10=PrvRpt F11=NxtRpt F12=Cancel			

Figure 97. Advanced: the completed statement (example 3)

SELECT DISTINCT \* FROM PARTS WHERE PARTNO > 12456

### RELATED TASKS

“Example 2 (Changing the SQL statement)” on page 336

“Executing a SELECT statement after you have built it using prototyping” on page 353

**Example 4 (Removing part of the SQL statement)**

To remove part of a SELECT statement you have built using advanced SELECT prototyping, use the Deselect function key (F4). The effect of the Deselect function key depends on which fragment of the syntax is currently active. For more information, see the description of the DESELECT command.

Suppose that you want to remove the condition you added to the SQL statement in the previous exercise (see Figure 97 on page 342) that restricted the rows shown to those with a part number greater than 12456. This means that you need to remove the WHERE clause from the SELECT statement.

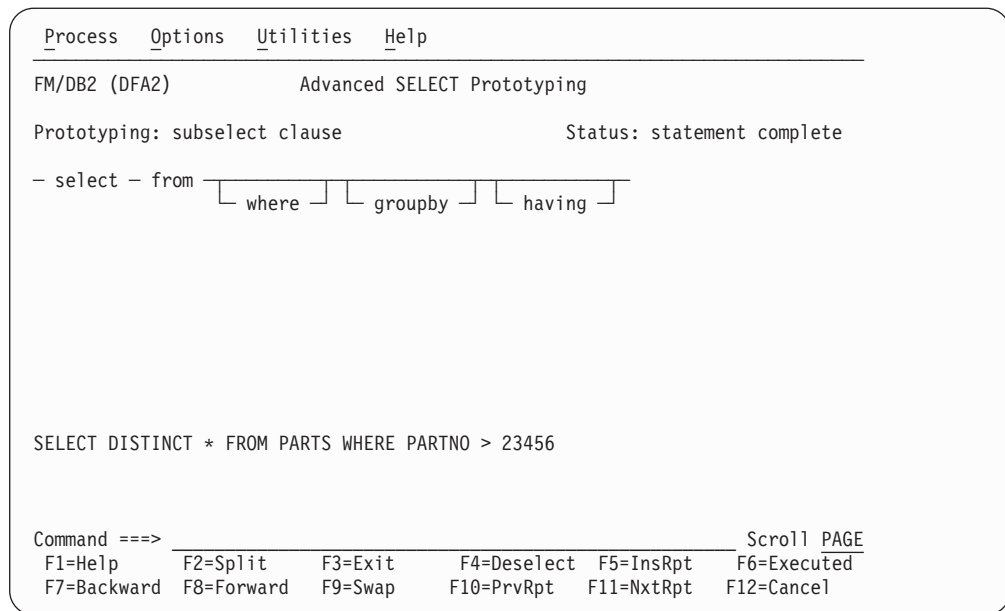
You can remove the WHERE clause by either of these methods:

- Using the Deselect function key (F4):
  1. Place the cursor on the WHERE clause in the generated SELECT statement.
  2. Press Enter to select the WHERE clause. It changes to green, and the syntax for the WHERE clause is redisplayed.
  3. Place the cursor on the command line.
  4. Press the Deselect function key (F4).
- Returning to the prototyping panel that contains the **where** fragment and “deselecting” it:

**Note:** The following steps assume the current panel on your screen is the last panel in Example 3 as shown in Figure 97 on page 342.

1. Press the Exit function key (F3). FM/DB2 returns you to the syntax for the basic predicate clause.
2. Press the Exit function key (F3). FM/DB2 returns you to the syntax for the predicate clause.
3. Press the Exit function key (F3). FM/DB2 returns you to the syntax for the search condition clause.
4. Press the Exit function key (F3). FM/DB2 returns you to the syntax for the WHERE clause.
5. Press the Exit function key (F3). FM/DB2 returns you to the syntax for the subselect clause. This panel contains the **where** fragment.

## Using advanced SQL prototyping



6. Move the cursor to the **where** fragment.

7. Press the Deselect function key (F4).

The panel shows the SELECT statement without the WHERE clause:

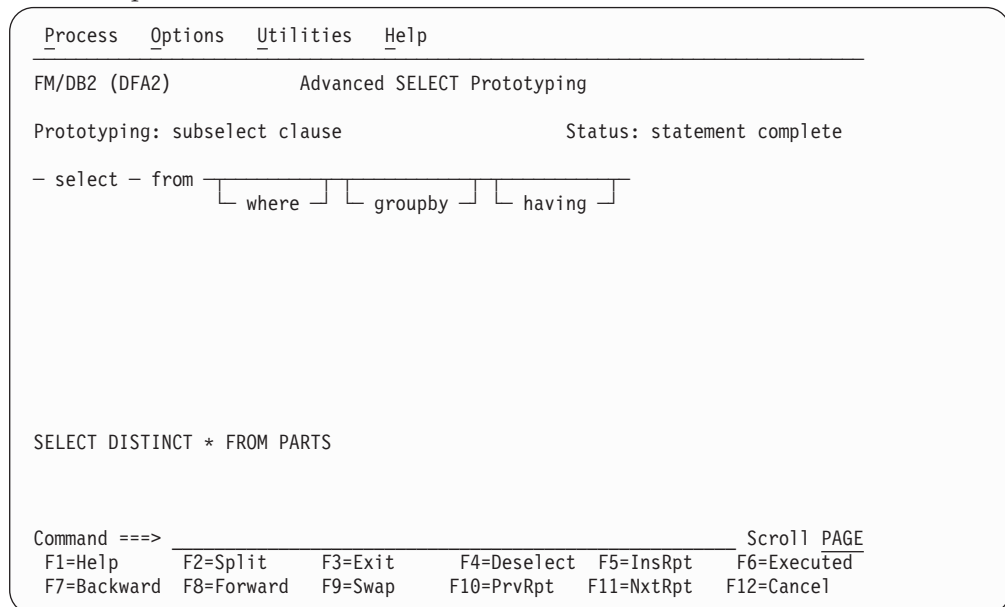


Figure 98. Advanced: the statement with WHERE clause removed (example 4)

SELECT DISTINCT \* FROM PARTS

### RELATED TASKS

“Example 3 (Adding to the SQL statement)” on page 337

“Executing a SELECT statement after you have built it using prototyping” on page 353

## Handling repeatable items in the syntax

Some parts of the SELECT statement syntax contain repeatable items where one or more repeatable items are delimited by a repeat separator. The repeat separator for

some repeat fragments is a comma (,), for some others it is a constant or an operand, and for others it is a space. If you specify more than one repeatable item, and the separator is constant, Advanced SELECT prototyping inserts the correct separator for you; otherwise, you must select the separator like any other element.

Let's take a simple example to show how you can build a fragment of the SELECT clause with repeatable items. Say you want to show certain information (specified in the rest of the SELECT statement) about a company's employees, grouped by their skill type, grade, and the year they started.

1. Repeat steps 1 to 5 of the first example (see "Example 1 (Building a simple SQL statement)" on page 331) so that the syntax for the subselect clause is displayed.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: subselect clause		Status: clause incomplete	
- select - from <span style="border: 1px solid black; padding: 2px;">where</span> <span style="border: 1px solid black; padding: 2px;">groupby</span> <span style="border: 1px solid black; padding: 2px;">having</span>			
Command ==> <span style="border: 1px solid black; padding: 2px;">F1=Help</span> <span style="border: 1px solid black; padding: 2px;">F2=Split</span> <span style="border: 1px solid black; padding: 2px;">F3=Exit</span> <span style="border: 1px solid black; padding: 2px;">F4=Deselect</span> <span style="border: 1px solid black; padding: 2px;">F5=InsRpt</span> <span style="border: 1px solid black; padding: 2px;">F6=Executed</span>			
F7=Backward F8=Forward F9=Swap F10=PrvRpt F11=NxtRpt F12=Cancel			

2. Move the cursor to the **groupby** fragment.
3. Press Enter. The syntax for the GROUP BY clause is displayed.

## Using advanced SQL prototyping

Process	Options	Utilities	Help		
FM/DB2 (DFA2)                      Advanced SELECT Prototyping					
Prototyping: group by clause		Status: clause incomplete			
- GROUP BY   ← ,   groupingexpr					
GROUP BY					
Command ==>                      Scroll PAGE					
F1=Help	F2=Split	F3=Exit	F4=Deselect	F5=InsRpt	F6=Executed
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

Notice that FM/DB2 shows the required keywords GROUP BY in the partly-built SQL clause on the panel.

You can see that the syntax for the GROUP BY clause consists of:

- The required key words GROUP BY (shown on your screen in white),
- The repeatable item **groupingexpr** (shown on your screen in red), and
- A comma (,) as the repeat separator.

4. Move the cursor to the **groupingexpr** fragment.
5. Press the InsRpt function key (F5). A pop-up panel is displayed in which you can enter a column name.
6. Type SKILLTYPE in the pop-up panel.

Process	Options	Utilities	Help		
Freeform Entry					
Enter a grouping expression to be inserted in the SQL:					
SKILLTYPE                       lete					
Command ==>                      Scroll PAGE					
F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	
F9=Swap	F12=Cancel				

Process	Options	Utilities	Help		
GROUP BY					
Command ==>                      Scroll PAGE					
F1=Help	F2=Split	F3=Exit	F4=Deselect	F5=InsRpt	F6=Executed
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt	F11=NxtRpt	F12=Cancel

7. Press the Exit function key (F3). The column name SKILLTYPE is added to the GROUP BY clause.

```

Process Options Utilities Help
FM/DB2 (DFA2) Advanced SELECT Prototyping
Prototyping: group by clause Status: clause complete

- GROUP BY ← , groupingexpr

GROUP BY SKILLTYPE

Command ==> Scroll PAGE
F1=Help F2=Split F3=Exit F4=Deselect F5=InsRpt F6=Executed
F7=Backward F8=Forward F9=Swap F10=PrvRpt F11=NxtRpt F12=Cancel

```

Notice that, at this stage, FM/DB2 has not added a repeat separator to the statement. If you are only specifying one repeatable item, this is the correct syntax. However, if FM/DB2 detects that you are specifying more than one repeatable item (as in the following steps), it inserts the repeat separator.

8. Again, move the cursor to the **groupingexpr** fragment.
9. Press the InsRpt function key (F5) to display the pop-up panel.
10. Type EMPGRADE in the pop-up panel.
11. Press the Exit function key (F3). The repeat separator and column name EMPGRADE are added to the GROUP BY clause.

```

Process Options Utilities Help
FM/DB2 (DFA2) Advanced SELECT Prototyping
Prototyping: group by clause Status: clause complete

- GROUP BY ← , groupingexpr

GROUP BY SKILLTYPE , EMPGRADE

Command ==> Scroll PAGE
F1=Help F2=Split F3=Exit F4=Deselect F5=InsRpt F6=Executed
F7=Backward F8=Forward F9=Swap F10=PrvRpt F11=NxtRpt F12=Cancel

```

12. Repeat steps 8 through 11 on page 347 for STARTYEAR.

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: group by clause		Status: clause complete	
- GROUP BY ← , groupingexpr —			
GROUP BY SKILLTYPE, EMPGRADE, STARTYEAR			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
			F11=NxtRpt
			F12=Cancel

The panel shows the completed GROUP BY clause:

GROUP BY SKILLTYPE , EMPGRADE , STARTYEAR

**Note:** If you only require one repeatable item in the fragment, after you move the cursor to the **groupingexpr** fragment (step 4 on page 346), you can press the InsRpt function key (F5) or Enter.

### RELATED TASKS

- “Example 1 (Building a simple SQL statement)” on page 331
- “Navigating through the repeatable items”
- “Inserting an extra repeatable item” on page 349
- “Changing a repeatable item” on page 349
- “Deleting a repeatable item” on page 350
- “Handling selectable repeat separators” on page 351
- “Points to consider when working with repeatable items” on page 352

## Navigating through the repeatable items

After you have added a number of repeatable items to a clause, you might need to modify part of the clause by inserting an extra repeatable item, or changing or deleting an existing repeatable item. In any of these cases, you need to navigate your way through the repeatable items so that the appropriate repeatable item is current.

To make a repeatable item current (and therefore change its color from yellow to green), either:

- Move the cursor to one of the elements within the repeat group in the syntax, and use PrvRpt (F10) to scroll backwards or NxtRpt (F11) to scroll forwards through the repeatable items in the generated statement, or
- Move the cursor to the repeatable item in the generated statement, and press Enter.

### Inserting an extra repeatable item

Suppose you need to insert an extra repeatable item (department) in the previous GROUP BY clause so that the information is grouped by their skill type, *department*, level, and the year they started:

1. Move the cursor to the **SKILLTYPE** repeatable item (that is to precede the new repeatable item) in the GROUP BY clause.
2. Press Enter to make **SKILLTYPE** the current repeatable item. Its color changes from yellow to green.
3. Move the cursor to the **groupingexpr** fragment.
4. Press the InsRpt function key (F5). A pop-up panel is displayed in which you can enter a column name.
5. Type DEPT in the pop-up panel.
6. Press the Exit function key (F3). The repeat separator and the new repeatable item, DEPT, are added to the GROUP BY statement after the SKILLTYPE repeatable item.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Advanced SELECT Prototyping	
Prototyping: group by clause		Status: clause complete	
← , _____ - GROUP BY — groupingexpr —			
GROUP BY SKILLTYPE , DEPT , EMPGRADE , STARTYEAR			
Command ==> _____ Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
			F11=NxtRpt
			F12=Cancel
			F5=InsRpt
			F6=Executed

### Changing a repeatable item

Suppose you want to change the name of the repeatable item, EMPGRADE, in the previous GROUP BY clause to EMPLEVEL:

1. Move the cursor to the **groupingexpr** fragment.
2. Press the NxtRpt function key (F11) to make EMPGRADE the current repeatable item. Its color changes from yellow to green.
3. Press Enter. A pop-up panel is displayed showing the repeatable item EMPGRADE already entered.



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Process	Options	Utilities	Help
Freeform Entry			
F	Enter a column name to be inserted in the SQL:		
P	EMPGRADE		
te			
Command ==>			
F1=Help	F2=Split	F3=Exit	Scroll PAGE
F8=Forward	F9=Swap	F12=Cancel	F7=Backward

GROUP BY SKILLTYPE , DEPT , EMPGRADE , STARTYEAR

Command ==>	Scroll PAGE
F1=Help	F6=Executed
F7=Backward	F12=Cancel
F2=Split	F5=InsRpt
F8=Forward	F11=NxtRpt
F9=Swap	F10=PrvRpt
F3=Exit	F4=Deselect

4. You can now edit the name of the column in the pop-up panel. Change it to EMPLEVEL.
5. Press the Exit function key (F3). EMPGRADE is replaced by EMPLEVEL in the GROUP BY statement.

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: group by clause		Status: clause complete	
- GROUP BY ← , groupingexpr			
GROUP BY SKILLTYPE , DEPT , EMPLEVEL , STARTYEAR			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
F5=InsRpt	F6=Executed	F11=NxtRpt	F12=Cancel

### Deleting a repeatable item

Suppose you want to remove the repeatable item, STARTYEAR, from the previous GROUP BY clause:

1. Move the cursor to the repeatable item, STARTYEAR
2. Press Enter to make STARTYEAR the current repeatable item. Its color changes from yellow to green.
3. Move the cursor to the **groupingexpr** fragment.

4. Press the Deselect function key (F4). The repeatable item, STARTYEAR (and its preceding repeat separator), is deleted from the GROUP BY clause.

Process	Options	Utilities	Help
FM/DB2 (DFA2) Advanced SELECT Prototyping			
Prototyping: group by clause		Status: clause complete	
- GROUP BY ← , groupingexpr			
GROUP BY SKILLTYPE , DEPT , EMPLEVEL			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Deselect
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt
		F5=InsRpt	F6=Executed
		F11=NxtRpt	F12=Cancel

## Handling selectable repeat separators

Some repeatable items in the SELECT statement syntax have a repeat separator that you can select (rather than a constant such as a comma). For example, the expression clause as shown in Figure 99 uses an operator (**oper**) as a repeat separator.

Process	Options	Utilities	Help											
FM/DB2 (DFA2) Advanced SELECT Prototyping														
Prototyping: expression clause		Status: clause incomplete												
← oper <table border="1"> <tr><td>function</td></tr> <tr><td>(- expression -)</td></tr> <tr><td>constant</td></tr> <tr><td>column</td></tr> <tr><td>hostvar</td></tr> <tr><td>register</td></tr> <tr><td>(- scalarfullsel -)</td></tr> <tr><td>duration</td></tr> <tr><td>caseexpr</td></tr> <tr><td>castspec</td></tr> <tr><td>sequenceref</td></tr> </table>				function	(- expression -)	constant	column	hostvar	register	(- scalarfullsel -)	duration	caseexpr	castspec	sequenceref
function														
(- expression -)														
constant														
column														
hostvar														
register														
(- scalarfullsel -)														
duration														
caseexpr														
castspec														
sequenceref														
SELECT ALL														
Command ==>														
F1=Help	F2=Split	F3=Exit	F4=Deselect											
F7=Backward	F8=Forward	F9=Swap	F10=PrvRpt											
		F5=InsRpt	F6=Executed											
		F11=NxtRpt	F12=Cancel											

Figure 99. Example of a selectable repeat separator

To show how to handle selectable repeat separators, we'll use an example. To generate the following expression clause:

## Using advanced SQL prototyping

AMT1 + AMT2 - AMT3

where the columns AMT1, AMT2, and AMT3 are three repeat items, and “+” and “-” are the two repeat separators, perform the following steps:

1. Move the cursor to the **column** element and press Enter. A pop-up panel is displayed.
2. Type AMT1 and press the InsRpt function key (F5). AMT1 is added to the clause:  
AMT1
3. Move the cursor to the **oper** repeat separator and press the InsRpt function key (F5). A list of valid repeat separators is displayed.
4. Move the cursor to the “+” repeat separator and press Enter. “+” is added to the clause:  
AMT1 +
5. Press the Exit function key (F3). The syntax for the expression clause is redisplayed.
6. Move the cursor to the **column** element and press Enter. A pop-up panel is displayed.
7. Type AMT2 and press the InsRpt function key (F5). AMT2 is added to the clause:  
AMT1 + AMT2
8. Move the cursor to the **oper** repeat separator and press the InsRpt function key (F5). A list of valid repeat separators is displayed.
9. Move the cursor to the “-” repeat separator and press Enter. “-” is added to the clause:  
AMT1 + AMT2 -
10. Press the Exit function key (F3). The syntax for the expression clause is redisplayed.
11. Move the cursor to the **column** element and press Enter. A pop-up panel is displayed.
12. Type AMT3 and press the InsRpt function key (F5). AMT3 is added to the clause:  
AMT1 + AMT2 - AMT3

**Note:** The repeat separator is associated with the repeat item it follows. When the last repeat item is current, you cannot edit the repeat separator.

### Points to consider when working with repeatable items

If you are working with repeatable items, keep in mind the following:

- Repeatable item commands are only effective if you move the cursor to one of the elements of the repeatable item.
- For each repeatable item in a fragment (generally none or one), only one “instance” of the item is current at a given time. Generated data for the current instance is displayed in green; generated data for any other instances is displayed in yellow.
- Press the PrvRpt (F10) and NxtRpt (F11) function keys to navigate between the instances.
- The InsRpt function key (F5) inserts a repeat instance after the active repeat instance and makes the new repeat instance active.
- If there are no instances for a repeatable item, you can create the initial instance and make it active by either:

- Using the InsRpt function key (F5), or
- Moving the cursor to an element of the repeatable item and pressing Enter
- If there is already an instance of a repeatable item, pressing Enter with the cursor on an element of the repeatable item causes that element to be “edited”.

## Executing a SELECT statement after you have built it using prototyping

When you have completed building an SQL SELECT statement, using either basic SELECT prototyping or advanced SELECT prototyping, you can run it by:

- Entering the EXECUTE primary command, or
- Pressing the Execute function key (F6)

FM/DB2 displays the results according to the **Use edit (instead of browse) to display results** option. If this option is selected, FM/DB2 displays the results using FM/DB2 Edit; otherwise, FM/DB2 displays the results using FM/DB2 Browse.

Figure 100 shows a results table using FM/DB2 Browse.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Select Statement Browse	
RESULTS FOR SELECT #1.FIRSTNME, #1.LASTNAME, #1.JOB FROM D...		Format	TABL
FIRSTNME	LASTNAME	JOB	
#2	#4	#8	
VARCHAR(12)	VARCHAR(15)	CH(8)	
<---+---1-->	<---+---1--->	<---+--->	
**** Top of data ****			
MICHAEL<	THOMPSON<	MANAGER	
IRVING<	STERN<	MANAGER	
EVA<	PULASKI<	MANAGER	
THEODORE<	SPENSER<	MANAGER	
VINCENZO<	LUCCHESI<	SALESREP	
SEAN<	O'CONNELL<	CLERK	
DOLORES<	QUINTANA<	ANALYST	
HEATHER<	NICHOLLS<	ANALYST	
ELIZABETH<	PIANKA<	DESIGNER	
MASATOSHI<	YOSHIMURA<	DESIGNER	
MARILYN<	SCOUTTEN<	DESIGNER	
JAMES<	WALKER<	DESIGNER	
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

Figure 100. Sample results table displayed using Browse

If there is insufficient space on the panel to show all of the columns, use the LEFT primary command to scroll left, or the RIGHT primary commands to scroll right, to view the additional columns.

### RELATED TASKS

“FM/DB2 system options (option 0.2)” on page 46

### RELATED REFERENCES

“EXECUTE primary command” on page 821

### Entering, executing, and explaining SQL statements

If you want to:

- Enter freeform SQL statements,
- Run freeform SQL statements, or
- Obtain information about an SQL statement

select option 3 (Enter) on the SQL Prototyping, Execution and Analysis panel.

When you select this option, FM/DB2 displays the Enter, Execute and Explain SQL Statements panel.

#### RELATED TASKS

- “Entering SQL statements”
- “Executing SQL statements” on page 355
- “Explaining SQL” on page 356

#### RELATED REFERENCES

- “SQL Prototyping, Execution and Analysis panel” on page 749
- “Enter, Execute and Explain SQL Statements panel” on page 598

### Entering SQL statements

You can enter SQL statements freeform in the SQL statement entry area. If you want to enter more than one SQL statement, you must separate the statements with a semicolon (;). When the SQL statements are processed, the last column of each line is joined directly to the first column of the next line. If a token ends in the last column of a line, ensure that the first column of the next line contains a blank or a delimiter token.

For detailed information about constructing SQL statements, see the *DB2 UDB for z/OS SQL Reference*.

### Editing SQL

You can edit the SQL you have entered by entering the SQL primary command. The SQL you have entered is copied to a temporary data set and an ISPF edit session is started. When you complete the Edit session, the temporary data set is copied back to the entry area on the Enter, Execute and Explain SQL Statements panel.

When you edit the SQL, you can:

- Save it to a data set for later use (using the ISPF edit CREATE command).
- Retrieve SQL you have saved previously (using the ISPF edit COPY command).
- Exploit the power of the ISPF editor to construct your SQL.

#### RELATED REFERENCES

- “Enter, Execute and Explain SQL Statements panel” on page 598
- “SQL primary command” on page 854

### Limiting the rows loaded into the FM/DB2 editor

To limit the rows loaded into the FM/DB2 editor when the SQL statement being processed is a SELECT statement, specify the maximum number of rows in the **Row count** field on the Enter, Execute and Explain SQL Statements panel.

To load all rows for the SELECT statement, specify \* or ALL in this field.

## Scrolling the entry area

If the statement you are entering extends beyond the visible display area, you can scroll through your data, using the following function keys:

<b>Up function key (F7)</b>	Scroll backward (up)
<b>Down function key (F8)</b>	Scroll forward (down)

You can also scroll using the primary commands UP and DOWN.

To control how far you scroll when you press one of the scrolling function keys, enter a scroll amount in the **Scroll** field:

### Scroll amount   Scrolls...

<b>PAGE</b>	One page of data at a time
<b>HALF</b>	Half a page of data at a time
<b>MAX</b>	To the top or bottom
<b>DATA</b>	One line less than a page of data at a time
<b>CSR</b>	To the cursor position (if the cursor is within the data, otherwise the default scroll amount, PAGE, applies)
<i>nnnn</i>	<i>nnnn</i> lines at a time.

### RELATED REFERENCES

“Enter, Execute and Explain SQL Statements panel” on page 598

## Executing SQL statements

To run the SQL you have entered in the statement entry area, press Enter.

If the SQL statement returns a result table, FM/DB2 displays it in an edit or browse panel, depending on the setting of the **Use edit (instead of browse) to display results** option.

If you have entered more than one SQL statement, the statements are run in sequence, interrupted by the display of any result tables. Execution continues until:

- An error occurs,
- The CANCEL command is entered on a result table display, or
- All the statements have been run

You can use the Enter, Execute and Explain SQL Statements panel to specify one or more of the following SQL SELECT statements (without using prototyping) and then run them in sequence:

ALTER	COMMENT ON	COMMIT
CREATE	DELETE	DROP
EXPLAIN	GRANT	INSERT
LABEL ON	LOCK TABLE	RENAME
REVOKE	ROLLBACK	SELECT
SET CURRENT DEGREE	SET CURRENT SQLID	UPDATE

### RELATED TASKS

“Entering SQL statements” on page 354

“FM/DB2 system options (option 0.2)” on page 46

## Entering, executing, and explaining SQL statements

### RELATED REFERENCES

“Enter, Execute and Explain SQL Statements panel” on page 598

### SQL cost

If any SELECT statements are run, and no errors occur, FM/DB2 displays a message after each execution showing the total SQL “cost” of all the SELECT statements.

### SQL errors

If an SQL error occurs while a statement is being run or explained, a panel is displayed containing the SQL error information.

To display the full text of the SQL statement that caused the error, press the SQL function key (F5) or enter SQL on the command line.

When you return from the error panel, FM/DB2 places the cursor on the failing statement or, if a syntax error occurred, places the cursor on the token in the failing statement that DB2 identified as in error. Statements that ran successfully before the failing statement are not rolled back, and no further statements are run or explained.

## Explaining SQL

To explain the SQL you have entered in the statement entry area, enter the EXPLAIN primary command. FM/DB2 creates an EXPLAIN statement for the entered SQL, and optionally displays the Plan Table Rows panel showing the rows added by DB2 as a result of the explain.

**Note:** For detailed information about explaining an SQL statement, see the *DB2 UDB for z/OS SQL Reference*.

To help identify the results of this explanation, you can enter a number in the **Query number** entry field. If you leave **Query number** blank, FM/DB2 generates a query number for you in the format YYYYMMDDss, where ss is a sequence number.

If you have selected the **Show results** option, FM/DB2 attempts to display the relevant rows that DB2 has inserted in the plan table as a result of explaining the statement. If you have entered more than one SQL statement, the statements are explained in sequence, interrupted by the display of the plan table rows. Execution continues until an error occurs, the CANCEL command is entered on a plan table display, or all the statements have been explained.

You can use the Enter, Execute and Explain SQL Statements panel to explain the following SQL statements:

```
SELECT
INSERT
UPDATE (searched form only)
DELETE (searched form only)
```

The following primary commands are available with the Enter, Execute and Explain SQL Statements panel:

- DOWN
- EXECUTE
- EXPLAIN
- SQL
- UP

### RELATED TASKS

- “Entering SQL statements” on page 354
- “Executing SQL statements” on page 355
- “Additional considerations for EXPLAIN”

### RELATED REFERENCES

- “Enter, Execute and Explain SQL Statements panel” on page 598
- “Plan Table Rows panel” on page 668
- “DOWN primary command” on page 815
- “EXECUTE primary command” on page 821
- “EXPLAIN primary command” on page 822
- “SQL primary command” on page 854
- “UP primary command” on page 858

### Additional considerations for EXPLAIN

The EXPLAIN primary command constructs and runs an SQL EXPLAIN statement. For the explain statement to run successfully, a *plan table* (called PLAN\_TABLE) must exist with an owner name matching your current SQL authorization ID. DB2 places the results of the EXPLAIN statement in the plan table.

FM/DB2 also places relevant data in a *statement table* (called DSN\_STATEMENT\_TABLE) and a *function table* (called DSN\_FUNCTION\_TABLE) if they exist.

You can access the statement and function table rows related to a plan table row by using line commands.

### RELATED TASKS

- “Explaining SQL” on page 356
- “Managing tables used by SQL explain” on page 358

### RELATED REFERENCES

- “COL primary command” on page 812
- “PLAN primary command” on page 841
- “HINT primary command” on page 833

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## Editing and executing SQL statements from a data set

If you want to:

- Optionally initiate an ISPF Edit session on a data set or PDS member containing SQL statements
- Run the SQL statements in a data set or PDS member

select option 4 (Edit) on the SQL Prototyping, Execution and Analysis panel.

**Note:** You cannot use this option to create a new member.

When you select this option, FM/DB2 displays the Edit and Execute SQL Statements from a Data Set panel.

To use this panel:

1. Specify the name of the data set or PDS member containing the SQL statements you want to edit. Use a combination of the **Data set name**, **Member**, and **Volume serial** entry fields.



## Editing and executing SQL statements from a data set

2. To limit the rows loaded into the FM/DB2 editor when the SQL statement being processed is a SELECT statement, specify the maximum number of rows in the **Row count** field on the Edit and Execute SQL Statements from a Data Set panel.

To load all rows for the SELECT statement, specify \* or ALL in this field.

3. Set the processing options.
4. Press Enter.

If you selected the **Edit data set** processing option, the contents of the specified data set or PDS member are displayed in an ISPF Edit session. When you have completed editing the SQL statements, press the Exit function key (F3) to run the commands (the **Execute SQL from data set** processing option must be selected).

If you selected the **Execute SQL from data set** processing option, but not the **Edit data set** processing option, FM/DB2 immediately runs the SQL commands in the specified data set or PDS member

**Note:** If an SQL error occurs, to prevent FM/DB2 executing further SQL statements, use the Cancel function key (F12) to return you to the Edit and Execute SQL Statements from a Data Set panel.

### RELATED TASKS

“Specifying a data set and a member name” on page 34

### RELATED REFERENCES

“SQL Prototyping, Execution and Analysis panel” on page 749

“Edit/Execute SQL (Data Set) panel” on page 568

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## Managing tables used by SQL explain

If you want to select functions to support the use of the SQL EXPLAIN statement, select option 5 (Utility) on the SQL Prototyping, Execution and Analysis panel.

When you select this option, FM/DB2 displays the Explain Utilities panel. This panel lets you create and delete the tables used by the SQL EXPLAIN statement. For additional information about the tables used by the SQL EXPLAIN statement, see the *DB2 UDB for z/OS SQL Reference*.

Use the Explain Utilities panel to specify the type of function you want to perform. For more details about using this panel, refer to the reference sections.

### RELATED TASKS

“Entering, executing, and explaining SQL statements” on page 354

### RELATED REFERENCES

“SQL Prototyping, Execution and Analysis panel” on page 749

“Explain Utilities panel” on page 600

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## Exiting SQL prototyping

To exit SQL prototyping, issue the CANCEL primary command or press the Cancel function key (F12).

RELATED REFERENCES

“CANCEL primary command” on page 806

## Exiting SQL prototyping

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## Chapter 13. Interfacing with DB2 Interactive

To interface to DB2 Interactive (DB2I), use the DB2I utility function (option 5).

To display the DB2I Primary Option Menu panel, from the Primary Option Menu panel select option 5 (DB2I).

For further information about DB2I, see the *DB2 Application Programming and SQL Guide*.

### RELATED REFERENCES

“Primary Option Menu panel” on page 670

“DB2I Primary Option Menu panel” on page 563



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## Chapter 14. DB2 data types

FM/DB2 supports the following IBM-supplied data types:

### Character strings (alphanumeric)

A sequence of bytes where the length of the string is the number of bytes in the sequence.

**CHAR** Fixed-length character string.

**VARCHAR** Varying-length character string.

**GRAPHIC** Fixed-length graphic string.

**VARGRAPHIC**  
Varying-length graphic string.

**BINARY** Fixed-length binary string.

**VARBINARY** Varying-length binary string.

### Numeric

Decimal, binary integer, and floating point data types containing a sign and a precision.

#### DECIMAL or NUMERIC

A packed decimal number with an implied decimal point.

**DECFLOAT** A decimal floating-point number.

**SMALLINT** A binary integer with a precision of 15 bits.

**INTEGER** A binary integer with a precision of 31 bits.

**BIGINT** A binary integer with a precision of 63 bits.

**REAL** A single precision floating-point number (32 bits).

#### DOUBLE, DOUBLE PRECISION, or FLOAT

A double precision floating-point number (64 bits).

### Row identifier

Supports queries that navigate directly to a row in the table.

**ROWID** A unique value maintained permanently by DB2.

### Datetime

These data types represent a point in time.

**DATE** Internally to DB2, the date is represented as a 4 byte field, with each byte containing 2 packed decimal digits stored in the format *yyyymmdd*.

Externally, as returned by an SQL SELECT statement, the date is represented by a character field. The format of the string is dependant on the DATE parameter in the DB2 DSNHDECP installation module (the DB2 installation option specified on the installation panel DSNTIP4). Table 23 on page 368 shows valid DB2 date formats. The length of the date field is 10 bytes, except where the DB2 Installation Date format is LOCAL, in which case the

length is installation-dependent and in the range 10 to 254 bytes. The date value must be in the range 0001-01-01 to 9999-12-31 (ISO format).

**TIME**

Internally to DB2, the time is represented as a 3 byte field with each byte containing 2 packed decimal digits stored in the format *hhmmss*.

Externally, as returned by an SQL SELECT statement, the time is represented by a character field. The format of the string is dependant on the TIME parameter in the DB2 DSNHDECP installation module (originally the DB2 installation option specified on the installation panel DSNTIP4). See Table 23 on page 368 for the valid DB2 time formats. The length of the time field is 8 bytes, except where the DB2 Installation Time format is LOCAL, in which case the length is installation-dependent and in the range 0 to 254 bytes. The time value must be in the range 00.00.00 to 24.00.00 (ISO format).

**TIMESTAMP**

Internally to DB2 the timestamp is represented as a 10 byte field with each byte containing 2 packed decimal digits. The first 4 bytes represent the date, the next 3 bytes the time, and the last 3 bytes the microseconds.

Externally, as returned by an SQL select statement, the timestamp is represented by a 26-byte character field. The timestamp is always returned in the format

*yyyy-mm-dd.hh.mm.ss.nnnnnn* where:

*yyyy* An integer in the range 1 to 9999 representing the years.

*mm* An integer in the range 1 to 12 representing the months.

*dd* An integer in the range 1 to 31 representing the days. The value must be appropriate for the month, including leap years.

*hh* An integer in the range 0 to 24 representing the hours.

*mm* An integer in the range 0 to 59 representing the minutes.

*ss* An integer in the range 0 to 59 representing the seconds.

*nnnnnn* An integer in the range 0 to 999999 representing the microseconds.

Table 23. Date and Time field formats

Format Name	Abbreviation	Date format	Time format
International Standard Organization	ISO	yyyy-mm-dd	hh.mm.ss
IBM USA standard	USA	mm/dd/yyyy	hh.mm AM or PM
IBM European standard	EUR	dd.mm.yyyy	hh.mm.ss
Japanese industrial standard	JIS	yyyy-mm-dd	hh:mm:ss
Installation defined	LOCAL	Installation defined format	Installation defined format

For a full description of DB2 data types, see the *DB2 UDB for z/OS SQL Reference*.

---

## Large objects (LOBs)

The term *large object (LOB)* refers to any of the following data types:

<b>CLOB</b>	Character large object
<b>DBCLOB</b>	Double-byte character large object
<b>BLOB</b>	Binary large object

FM/DB2 recognizes columns with a LOB data type but these columns do not participate in FM/DB2 functions. If displayed, the name of the LOB column is shown but the column is displayed as empty.



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## Chapter 15. FM/DB2 panels and fields

This section of the manual lists most of the FM/DB2 panels. For several of the panels, there is a definition for each field in the panel and, where applicable, the value ranges that are valid for each entry field.

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### Scrollable fields on FM/DB2 panels

Some fields on FM/DB2 panels are scrollable to allow you to input or view longer values.

The panels shown in this section were produced using DB2 Version 8. In these panels, some fields have adjacent “+” and “-” signs. These signs show that the fields are scrollable.

For further information, see “Scrollable input and display fields for long names” on page 23.

---

### Action bar pull-down menu

The Action bar pull-down menus give you a fast way to move around the product. The panel shown here shows an example of a pull-down menu for the action bar item, **Options**.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (			
0 Setti	1. Print settings		: JOHNLEV
1 View	2. FM/DB2 system options		: FMD2
2 Edit	3. Job card specifications		: FMN2
3 Utili	4. Compiler language selection		: 10.1.0
4 SQL	5. COBOL compiler specifications		: 3278
5 DB2I	6. HLASM compiler specifications		: 1
6 Comma	7. PL/I compiler specifications		: 2009/10/16
X Exit	8. Temporary Data Set Allocations		: 14:27
	9. Output Data Set Allocations		
	10. Trace options		
	11. ISPF settings		
	12. Editor options		. DFE2
	13. Copy utility options		. JOHNLEV +
	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		
Command			F8=Forward
F1=Help			
F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Process

The Process menu offers the following choice:

1 Exit

#### Options

## Action bar pull-down menu

**Note:** The Options menu is not available for the Set Processing Options panel ("Set Processing Options panel" on page 738).

The Options menu offers the following choice:

- 1 Print settings
- 2 FM/DB2 system options
- 3 Job card specifications
- 4 Compiler language selection
- 5 COBOL compiler specifications
- 6 HLASM compiler specifications
- 7 PL/I compiler specifications
- 8 Temporary Data Set Allocations
- 9 Output Data Set Allocations
- 10 Trace options
- 11 ISPF settings
- 12 Editor options
- 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

### Utilities

**Note:** The Utilities menu is not available for the Set Processing Options panel ("Set Processing Options panel" on page 738).

The Utilities menu offers the following choice:

- 1 Print
- 2 Objects
- 3 Copy
- 4 Object List
- 5 DB2 Privileges
- 6 Import
- 7 Export
- 8 Create
- 9 DB2 Utilities
- 10 Audit Trail
- 11 Print Browse

**Help** The Help menu offers the following choice:

- 1 Help for help...
- 2 Extended help...
- 3 Keys help...
- 4 Help index A-M
- 5 Help index N-Z
- 6 Tutorial...
- 7 About...
- 8 About DB2...
- 9 News about FM/DB2...

## Parent panels

Pull-down menus are available from all FM/DB2 panels.

## Child panels

None.

## Related tasks

- “Checking your FM/DB2 version” on page 13
- “Exiting from FM/DB2” on page 14
- “Selecting an item from the action bar” on page 22



### Additional LISTDEF Statements panel

You use the Additional LISTDEF Statements panel to provide additional LISTDEF statements, which are used to supplement the LISTDEF statement provided in the LISTDEF Options panel.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)	Additional LISTDEF Statements		Global Settings		
No corresponding statement is generated if its field is blank.					
LISTDEF	<input type="text"/>				
	<input type="text"/>				
	<input type="text"/>				
LISTDEF	<input type="text"/>				
	<input type="text"/>				
	<input type="text"/>				
LISTDEF	<input type="text"/>				
	<input type="text"/>				
	<input type="text"/>				
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F6=Reset	F7=Backward
F8=Forward	F9=Swap	F10=Actions	F12=Cancel		

**LISTDEF** The text that you enter here is included in a LISTDEF statement, if the Use additional statements option on the LISTDEF Options panel (page 649) is selected.

#### Parent panels

- “LISTDEF Options panel” on page 649

#### Child panels

None.

#### Related tasks

- “RESET primary command” on page 847
- “Setting options for DB2 utilities” on page 282

### Additional TEMPLATE Statements panel

You use the Additional TEMPLATE Statements panel to provide additional TEMPLATE statements, which are used to supplement the TEMPLATE statement provided in the TEMPLATE Options (1 of 2) panel.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Additional TEMPLATE StatementsGlobal Settings

No corresponding statement is generated if its field is blank.

TEMPLATE

TEMPLATE

TEMPLATE

Command ==>

F1=HelpF2=SplitF3=ExitF4=CRetrieVF6=ResetF7=Backward

F8=ForwardF9=SwapF10=ActionsF12=Cancel

**TEMPLATE** The text that you enter here is included in a TEMPLATE statement, if the Use additional statements option on the TEMPLATE Options (1 of 2) panel (page 779) is selected.

Parent panels

- “TEMPLATE Options (1 of 2) panel” on page 779

Child panels

None.

Related tasks

- “RESET primary command” on page 847
- “Setting options for DB2 utilities” on page 282

Advanced SELECT Prototyping panel

The advanced select prototyping function is an aid to learning the syntax of the SQL SELECT statement, and a tool for prototyping complex SQL statements. Fragments of the statement syntax are displayed on the screen in a form based on the "railroad tracks" used to describe the syntax in the DB2 manuals. By positioning the cursor on the parts of the syntax you wish to explore or use, you can build up a statement that conforms to the syntax requirements. The statement you create is displayed at the bottom of the screen, and can be executed when you have completed it.

### Panel and field definitions

The screenshot shows the 'Advanced SELECT Prototyping' panel. At the top are menu options: Process, Options, Utilities, and Help. Below the menu bar, the text 'FM/DB2 (DFA2)' and 'Advanced SELECT Prototyping' are displayed. The 'Prototyping: select statement' section shows 'View syntax notes' and 'Status: statement incomplete'. A syntax tree is visible with 'fullselect' as the root, branching into 'WITH - comtabexp' and 'orderby'. The 'orderby' branch further branches into 'fetchfirst', 'update', 'FOR READ ONLY', 'optimize', 'isolation', and 'queryno'. At the bottom, a 'Command ===>' section lists function keys: F1=Help, F2=Split, F3=Exit, F4=Deselect, F5=InsRpt, F6=Executed, F7=Backward, F8=Forward, F9=Swap, F10=PrvRpt, F11=NxtRpt, and F12=Cancel. A 'Scroll PAGE' option is also present.

#### Prototyping

Shows the name of the syntax fragment currently displayed.

**Status** The current status of the SQL statement you are building. The status indicator, in the form of a text string, applies either to the whole SQL statement (in which case, it uses the word “statement”), or to the clause within the SQL statement that you are currently prototyping (in which case, it uses the word “clause”):

#### statement incomplete

Only is displayed on the first Advanced SELECT Prototyping panel, and indicates that the statement generated so far is not ready for execution.

#### clause incomplete

Can be displayed on any panel except the first, and indicates that the clause currently being prototyped is not ready for execution (and by implication, the statement as a whole is not yet ready for execution).

#### clause complete

Can be displayed on any panel except the first, and indicates that the clause currently being prototyped is now complete. This indirectly implies (because otherwise the status would appear as “statement complete”) that the statement as a whole is not yet ready for execution.

#### statement complete

Can be displayed on any panel, and indicates that the statement as a whole is now complete and ready for execution (and implies that the current clause is also complete).

**Note:** Advanced SELECT prototyping is designed to help you build a SELECT statement until it is displayed to be complete. However, the

“completed” status of a SELECT clause or statement does not necessarily mean that it is syntactically correct or references valid DB2 data. Only the successful execution of the SELECT statement confirms that its syntax is correct.

**View syntax notes**

Explanatory notes relating to the current syntax fragment, available on some of the advanced SELECT prototyping panels. Such panels show the text “View syntax notes” immediately below the “Prototyping:” field heading.

To view the notes, move the cursor to the “View syntax notes” text and press Enter. FM/DB2 displays a panel containing notes relevant to the current syntax fragment.

**Parent panels**

- “SQL Prototyping, Execution and Analysis panel” on page 749

**Child panels**

To display this panel...	Use/do this
“Select Statement Browse panel” on page 724	Press Enter

**Related tasks**

- “Using advanced SQL prototyping” on page 328
- “Generated SELECT statement color-coding” on page 330

**Related references**

- “CANCEL primary command” on page 806
- “DESELECT primary command” on page 814
- “EXECUTE primary command” on page 821
- “INSRPT primary command” on page 834
- “NEXTRPT primary command” on page 840
- “PREVRPT primary command” on page 843
- “SQL primary command” on page 854

### Alter Database panel

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Alter Database			
Database name . . . <u>FMN2</u>					
Buffer pool . . . . <u>          </u>		(Optional: BPn,BP8Kn,BP16Kn,BP32Kn)			
Index buffer pool . <u>BP0</u>		(Optional: BPn)			
Storage group . . . <u>SG01</u>		+ (Optional, storage group name)			
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

#### Parent panels

- “Databases panel” on page 538

#### Child panels

None.

#### Related tasks

## Alter External Scalar Function panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Alter External Scalar Function	
ALTER SPECIFIC FUNCTION "SYATES"."FUNCTIO1"			
All parameters are optional			
External name . . .	FUNCTIO1	+	(default is the function name)
Language . . . . .	COBOL		Deterministic . N (Y/N)
NOT NULL Call . . .	(Y/N)		External action Y (Y/N)
Final call . . . . .	N	(Y/N)	DBINFO . . . . . N (Y/N)
SQL . . . . .	R	(C - Contain R - Read M - Mod N - No)	
Scratch pad . . . . .	0	(scratch pad length or 0)	
ALLOW PARALLEL	D		(Y/N)
Collid . . . . .		+	(collection or '-' for none)
WLM Environment . .	WLM FOR DFA2	+	(WLM env. name or '-' for none)
ASUTIME limit . . .	0		(CPU service units or 0 for no limit)
Stay resident . . .	N	(Y/N)	
Program type . . .	S	(M - Main S - Subroutine)	
External security .	D	(D - DB2 AS U - User C - Definer)	
Run time options .			+
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- "Functions panel" on page 632

### Child panels

None.

### Related tasks

## Alter Index panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Alter Index	
Index owner . . . .	FMUSER	+	
Index name . . . .	XDEPT1		+
Partition . . . . .			
Primary quantity .		Buffer pool . . . .	BP0
Secondary quantity		Erase rule . . . .	NO
Free page . . . . .		Close rule . . . .	NO
Percent free . . . .			
Storage group . . . .	+		
VSAM catalog . . . .		Piece size(KB) . . . .	2097152
GB pool cache . . . .		Copy allowed . . . .	NO
Limit value . . . . .			+
Use the SHOW primary command to display index partition values, and the SAVE line command to copy the values to this panel.			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- "Indexes panel" on page 645

### Child panels

None.

### Related tasks

## Alter Stored Procedure panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Alter Stored Procedure	
ALTER SPECIFIC FUNCTION "SYATES"."FUNCTIO1"			
All parameters are optional			
RESULT SETS . . . .	0	(maximum number of result sets)	
EXTERNAL NAME . . .	DSNX9DUJ	+ (default is the function name)	
LANGUAGE . . . . .	C	+ DETERMINISTIC . N (Y/N)	
PARM STYLE . . . .	D	(D - DB2SQL G - General N - w. NULLS)	
SQL . . . . .	M	(C - Contain R - Read M - Mod N - No)	
DBINFO . . . . .	N	(Y/N)	
COLLID . . . . .	DSNJAR	+ (collection or '-' for none)	
WLM ENV . . . . .	WLM_FOR_DFA2	+ (WLM env. name or '-' for none)	
ASUTIME LIMIT . . .	0	(CPU service units or 0 for no limit)	
STAY RESIDENT . . .	Y	(Y/N)	
PROGRAM TYPE . . .	S	(M - Main S - Subroutine)	
EXT SECURITY . . .	U	(D - DB2 AS U - User C - Definer)	
COMMIT RETURN . . .	N	(Y/N)	
RUN TIME OPTS . . .	POSIX(ON)	+	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- "Stored Procedures panel" on page 754

### Child panels

None.

### Related tasks



## Alter Table panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Alter Table	
Table Identification:			
Table owner	. . . . . KPS8810_LONG	+	
Table name	. . . . . VACT	+	
Processing Options:			
Select type of ALTER			
1. AUDIT 2. ADD column 3. VALIDPROC 4. ADD PRIMARY KEY 5. ADD FOREIGN KEY constraint 6. DROP PRIMARY KEY		7. DROP FOREIGN KEY constraint 8. DATA CAPTURE 9. ADD CHECK constraint 10. DROP CHECK constraint 11. ADD RESTRICT ON DROP 12. DROP RESTRICT ON DROP	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “Tables, Views and Aliases panel” on page 776
- “Table Check Constraints panel” on page 760

### Child panels

To display this panel...	Use/do this
“Alter Table - AUDIT panel” on page 387	Processing option 1
“Alter Table - ADD Column panel” on page 384	Processing option 2
“Alter Table - VALIDPROC panel” on page 393	Processing option 3
“Alter Table - ADD PRIMARY KEY panel” on page 386	Processing option 4
“Alter Table - ADD FOREIGN KEY Constraint panel” on page 385	Processing option 5
“Alter Table - DROP PRIMARY KEY panel” on page 391	Processing option 6
“Alter Table - DROP FOREIGN KEY Constraint panel” on page 390	Processing option 7
“Alter Table - DATA CAPTURE panel” on page 388	Processing option 8
“Alter Table - ADD CHECK Constraint panel” on page 383	Processing option 9
“Alter Table - DROP CHECK Constraint panel” on page 389	Processing option 10
“Alter Table - RESTRICT ON DROP panel” on page 392	Processing option 11 or 12

### Related tasks

Alter Table - ADD CHECK Constraint panel

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Alter Table - ADD CHECK Constraint

Table Identification:

Owner . . . . .

KPS8810\_LONG

+

Name . . . . .

VACT

+

Constraint:

Name . . . . .

+

Check condition . .

+

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

Parent panels

- “Alter Table panel” on page 382

Child panels

None.

Related tasks

## Alter Table - ADD Column panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Alter Table - ADD Column	
Table Identification:			
Owner . . . . .	KPS8810_LONG	+	
Name . . . . .	VACT		+
Column Details:			
Name . . . . .	_____ + (for example CHAR, DECIMAL, INTEGER)		
Type . . . . .	_____		
Length . . . . .	_____		
Precision . . . . .	_____ (optional, valid for FLOAT and DECIMAL only)		
Scale . . . . .	_____ (optional, valid for DECIMAL only)		
NOT NULL . . . . .	_____ (Yes or No)		
FOR ? DATA . . . . .	_____ (type: B - BIT, S - SBCS, D - DBCS, blank - none)		
WITH DEFAULT . . . . .	_____ (Yes, No or enter value below)		
Default value . . . . .	_____ +		
FIELDPROC Details:			
Name . . . . .	_____ (optional)		
Parm . . . . .	_____ +		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
	F7=Backward	F8=Forward	

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

Alter Table - ADD FOREIGN KEY Constraint panel

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Alter Table - ADD FOREIGN KEY Constraint

Table Identification:

Owner . . . . .KPS8810\_LONG +

Name . . . . .VACT +

Constraint:

Name . . . . .VACT +

Foreign Key:

Column name 1 . . .

2 . . .

3 . . .

4 . . .

5 . . .

6 . . .

7 . . .

8 . . .

REFERENCES Table Identification:

Owner . . . . .SYSIBM

Name . . . . .

ON DELETE:

Select type of delete rule

1. RESTRICT

2. CASCADE

3. SET NULL

4. NO ACTION

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

Parent panels

- “Alter Table panel” on page 382

Child panels

None.

Related tasks

## Alter Table - ADD PRIMARY KEY panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
-----------------	-----------------	-------------------	--------------

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FM/DB2 (DFA2)                      Alter Table - ADD PRIMARY KEY

Table Identification:

Owner . . . . . KPS8810\_LONG                      +

Name . . . . . VACT                      +

Primary Key:

Column name 1 . . .                      \_\_\_\_\_

2 . . .                      \_\_\_\_\_

3 . . .                      \_\_\_\_\_

4 . . .                      \_\_\_\_\_

5 . . .                      \_\_\_\_\_

6 . . .                      \_\_\_\_\_

7 . . .                      \_\_\_\_\_

8 . . .                      \_\_\_\_\_

Command ==>

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

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

## Alter Table - AUDIT panel

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Alter Table - AUDIT

Table Identification:

Owner . . . . . KPS8810\_LONG +

Name . . . . . VACT +

Auditing Attribute:

Select type of AUDIT

1. NONE

2. CHANGES

3. ALL

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

### Alter Table - DATA CAPTURE panel

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Alter Table - DATA CAPTURE			
Table Identification:					
Owner	..... KPS8810_LONG	+			
Name	..... VACT		+		
Additional Logging Attribute:					
Select type of DATA CAPTURE					
1. NONE					
2. CHANGES					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

#### Parent panels

- “Alter Table panel” on page 382

#### Child panels

None.

#### Related tasks

## Alter Table - DROP CHECK Constraint panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Alter Table - DROP CHECK Constraint	
Table Identification:			
Owner . . . . .	KPS8810_LONG	+	
Name . . . . .	VACT	+	
CHECK Constraint:			
Name . . . . .		+	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “Alter Table panel” on page 382
- “Table Check Constraints panel” on page 760

### Child panels

None.

### Related tasks



## Alter Table - DROP FOREIGN KEY Constraint panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)      Alter Table - DROP FOREIGN KEY Constraint			
Table Identification:			
Owner . . . . .	KPS8810_LONG	+	
Name . . . . .	VACT		+
FOREIGN KEY Constraint:			
Name . . . . .			+
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

Alter Table - DROP PRIMARY KEY panel

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Alter Table - DROP PRIMARY KEY

Table Identification:  
Owner . . . . . KPS8810\_LONG +  
Name . . . . . VACT +

DROP PRIMARY KEY

Press ENTER to confirm.

Command ==>  
F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward  
F9=SwapF10=LeftF11=RightF12=Cancel

Parent panels

- “Alter Table panel” on page 382

Child panels

None.

Related tasks

---

## Alter Table - RESTRICT ON DROP panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Alter Table - RESTRICT ON DROP			
Table Identification:					
Owner . . . . .	KPS8810_LONG	+			
Name . . . . .	VACT	+			
ADD RESTRICT ON DROP					
Press ENTER to confirm.					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

## Alter Table - VALIDPROC panel

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Alter Table - VALIDPROC

Table Identification:

Owner . . . . . KPS8810\_LONG +

Name . . . . . VACT +

Validation Procedure:

Select type of VALIDPROC

1. NULL

2. Program name . . .

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

### Parent panels

- “Alter Table panel” on page 382

### Child panels

None.

### Related tasks

## Alter Table Space panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Alter Table Space	
Database name . . . FMN2			
Table space name . . SYSCOPY			
Partition . . . . . _____			
Primary quantity . . _____		Buffer pool . . . . . BP0	
Secondary quantity . _____		Close rule . . . . . NO	
Free page . . . . . _____		Erase rule . . . . . NO	
Percent free . . . . . _____		Lock size . . . . . ANY	
Storage group . . . _____ +		Lock max . . . . . _____	
VSAM catalog . . . . . _____		Lock part . . . . . _____	
Compress . . . . . _____		Max rows . . . . . 255	
GBP Cache . . . . . _____		Log . . . . . _____	
Track mods . . . . . _____			
Use the SHOW primary command to display table space partition values, and the SAVE line command to copy the values to this panel.			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- "Table Spaces panel" on page 768

### Child panels

None.

### Related tasks

## Application Packages panel

You use the Application Packages panel to list packages in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSPACKAGE.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Application Packages			
Location:		Format <u>TABL</u>			
SEL	COLLID	NAME	CONTOKEX	OWNER	
	*	*	*	*	
----	#2--+-1-----2-----	#3--+-1--	#49-+-1-----	#5--+-	
****	Top of data ****				
----	DSNACCOR	DSNACCOR	177E87BE0FB21F55	JCULLEN	
----	DSNAOCLI	DSNCLIC1	177B36231891080D	JCULLEN	
----	DSNAOCLI	DSNCLIC2	177310CF0292F222	JCULLEN	
----	DSNAOCLI	DSNCLICS	177310CF02BC61C8	JCULLEN	
----	DSNAOCLI	DSNCLIF4	177310CF0240AD09	JCULLEN	
----	DSNAOCLI	DSNCLINC	177310D1041D2C84	JCULLEN	
----	DSNAOCLI	DSNCLIQR	177310D20B53A754	JCULLEN	
----	DSNAOCLI	DSNCLIRR	177310D40AF15976	JCULLEN	
----	DSNAOCLI	DSNCLIRS	177310D5100739C0	JCULLEN	
----	DSNAOCLI	DSNCLIUR	177310D817B309F9	JCULLEN	
----	DSNASPCC	DSNACOL8	177E85D60B2B32CD	JCULLEN	
Command	==>	Scroll <u>PAGE</u>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetrie	F5=RFind	F6=RChange
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Tables, Views and Aliases panel” on page 776
- “Indexes panel” on page 645
- “Application Plans panel” on page 397
- “Collections panel” on page 405
- “Stored Procedures panel” on page 754
- “Triggers panel” on page 785
- “Plan Table Rows panel” on page 668

## Application Packages panel

- “Statement Table Rows panel” on page 750

## Child panels

To display this panel...	Use/do this
“Bind Package panel” on page 404	Line command BI or CBI
“Package Dependencies panel” on page 667	Line command DEP
“Free Package panel” on page 630	Line command FRE
“Grant privileges panels” on page 635	Line command G
“Details panels” on page 564	Line command I
“Plan Table Rows panel” on page 668	Line command LPT
“Privileges panels” on page 678	Line command P
“Package List panel” on page 667	Line command PKL
“Application Plans panel” on page 397	Line command PL
“Revoke privileges panels” on page 709	Line command R
“Rebind Package panel” on page 681	Line command RBI
“Display Row panel” on page 564	Line command ROW
“Table Spaces panel” on page 768	Line command S
(ISPF panel)	Line command SQL
“Tables, Views and Aliases panel” on page 776	Line command TB
“Tables, Views and Aliases panel” on page 776	Line command V
“Application Packages panel” on page 395	Line command VER
“Indexes panel” on page 645	Line command X
“Sort Fields panel” on page 747	Primary command SORT

## Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

## Related references

- “SORT primary command” on page 853

## Application Plans panel

You use the Application Plans panel to list application plans in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSPLAN.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp			
<hr/>						
FM/DB2 (DFA2)		Application Plans				
Location:		Format <u>TABL</u>				
<hr/>						
SEL	NAME	CREATOR	VALIDAEX	ISOLATEX	VALIDEX	OPERATEX
	*	*	*	*	*	*
----	#1--+-	#2--+-	#44--+-	#45--+-1--+-	#46--+-	#47--+-
****	Top of data					****
----	DSNACLI	JCULLEN	Run time	Repeatable read	Yes	Yes
----	DSNEDCL	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNESPCL	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNESP RR	JCULLEN	Run time	Repeatable read	Yes	Yes
----	DSNH YCRD	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNREXX	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNTEP81	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNTIA81	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNTP481	JCULLEN	Run time	Cursor stability	Yes	Yes
----	DSNWZP	JCULLEN	Run time	Cursor stability	Yes	Yes
----	FMN2GEN	KEISTEW	Bind time	Cursor stability	Yes	Yes
<hr/>						
Command ==>				Scroll <u>PAGE</u>		
F1=Help	F2=Zoom	F3=Exit	F4=CRetrie	F5=RFind	F6=RChange	
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel	

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Application Packages panel” on page 395
- “Collections panel” on page 405
- “Database Request Modules panel” on page 536

### Child panels

To display this panel...	Use/do this
“Bind Application Plan panel” on page 403	Line command BI



## Application Plans panel

To display this panel...	Use/do this
"Free Application Plan panel" on page 630	Line command FRE
"Grant privileges panels" on page 635	Line command G
"Details panels" on page 564	Line command I
"Plan Table Rows panel" on page 668	Line command LPT
"Database Request Modules panel" on page 536	Line command M
"Privileges panels" on page 678	Line command P
"Application Packages panel" on page 395	Line command PKG
"Package List panel" on page 667	Line command PKL
"Revoke privileges panels" on page 709	Line command R
"Rebind Application Plan panel" on page 679	Line command RBI
"Display Row panel" on page 564	Line command ROW
"Table Spaces panel" on page 768	Line command S
(ISPF panel)	Line command SQL
"Tables, Views and Aliases panel" on page 776	Line command T
"Tables, Views and Aliases panel" on page 776	Line command V
"Indexes panel" on page 645	Line command X
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

Basic SELECT Prototyping panel

You use the Basic SELECT Prototyping (primary) panel to specify up to 15 tables to be used to construct a FROM clause as the starting point for prototyping a SELECT statement.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Basic SELECT Prototyping

Enter the name(s) of the table(s) from which to retrieve data:

Owner	Name		Location
#1 DSN8610	+ EMP	+ Location	
#2 DSN8610	+ EEMP	+ Database	
#3	+	+ Tbl spc.	
#4	+		
#5	+		
#6	+		
#7	+		
#8	+		
#9	+		
#10	+		
#11	+		
#12	+		
#13	+		
#14	+		
#15	+		

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

- Owner

This field is optional. If specified, it is used to qualify the name field on the same line. If omitted, the current SQL ID is used.
- Name

This field is required. It specifies the name of the table to be processed.
- Location

This field is optional. If specified, it is used to qualify all the tables entered in the **Owner** and **Name** fields. If omitted, the current location is be used.
- Database

This field is optional. If specified, all the tables entered in the **Owner** and **Name** fields must exist in the given database. If omitted, the tables can exist in any database at the specified or defaulted location.
- Table space

This field is optional. If specified, all the tables entered in the **Owner** and **Name** fields must exist in the given table space. If omitted, the tables can exist in any table space at the specified or defaulted location, subject to any restriction imposed by the database specification.

After you have specified the table names on the primary Basic SELECT Prototyping panel, press Enter to display the secondary Basic SELECT Prototyping panel.

## Basic SELECT Prototyping panel

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		Basic SELECT Prototyping				Row 1 of 19	
SELECT ? FROM ? WHERE ? ORDER BY ?							
Row count		ALL		Number of rows to display			
Select columns (S/A/D) or enter predicates to build the SELECT statement:							
S	L	Op	(	Tab	Column Name	Data Type(length)	Op Value )
---	---	---	---	#1	EMPNO	CHAR(6)	---
---	---	---	---	#1	FIRSTNME	VARCHAR(12)	---
---	---	---	---	#1	MIDINIT	CHAR(1)	---
---	---	---	---	#1	LASTNAME	VARCHAR(15)	---
---	---	---	---	#1	WORKDEPT	CHAR(3)	---
---	---	---	---	#1	PHONENO	CHAR(4)	---
---	---	---	---	#1	HIREDATE	DATE(4)	---
---	---	---	---	#1	JOB	CHAR(8)	---
---	---	---	---	#1	EDLEVEL	SMALLINT(2)	---
---	---	---	---	#1	SEX	CHAR(1)	---
---	---	---	---	#1	BIRTHDATE	DATE(4)	---
---	---	---	---	#1	SALARY	DECIMAL(9,2)	---
---	---	---	---	#1	BONUS	DECIMAL(9,2)	---
---	---	---	---	#1	COMM	DECIMAL(9,2)	---
---	---	---	---	#2	DEPTNO	CHAR(3)	---
---	---	---	---	#2	DEPTNAME	VARCHAR(36)	---
---	---	---	---	#2	MGRNO	CHAR(6)	---
---	---	---	---	#2	ADMRDEPT	CHAR(3)	---
---	---	---	---	#2	LOCATION	CHAR(16)	---
**** End of data ****							
Command ==>							
F1=Help		F2=Split		F3=Exit		F4=Expand	
F8=Forward		F9=Swap		F10=Left		F11=Right	
						F6=Execute	
						F7=Backward	
						F12=Cancel	

### Row count

Enter a number in this field to control:

- The number of rows returned in the result set when the SQL statement is executed. Specifying 0 results in all qualifying rows being returned. Specifying  $n$  (when  $n > 0$ ) limits the number of rows returned to the lesser of:  $n$  rows, or the number of rows in the result table.
- Whether or not an "OPTIMIZE FOR  $n$  ROWS" clause is added to the SQL statement prior to execution. Specifying  $n$  (when  $n > 0$ ) results in the addition of "OPTIMIZE FOR  $n$  ROWS" to the SQL statement prior to execution. Specifying a 0 value does not add "OPTIMIZE FOR  $n$  ROWS" to the SQL statement. Specifying a non-zero value may improve DB2's use of resources when executing the SQL statement.

### S

A selection column in which you can specify one of the following values for the column on that line:

- S** Select. Adds the column name to the column list in the SELECT clause.
- A** Select ascending. Adds the column name to the column list in the SELECT clause, and adds the column name with the keyword ASC to the column list in the ORDER BY clause.
- D** Select descending. Adds the column name to the column

list in the SELECT clause, and adds the column name with the keyword DESC to the column list in the ORDER BY clause.

<b>LOp</b>	Logical operator to join a new predicate to previous predicates. You can specify one of the following values for the column on that line: AND (the default operator) OR NOT (equivalent to "and not") NOR (equivalent to "or not")
<b>(</b>	Inserts an opening parenthesis at the start of the predicate added to the WHERE clause. Use an opening parenthesis in conjunction with a closing parenthesis to ensure the predicate for this column is evaluated before other (non-parenthesized) predicates.
<b>Tab</b>	The correlation name of the table containing the column on this line. This is an information-only field.
<b>Column Name</b>	The name of the column as held in the DB2 catalog. This is an information-only field.
<b>Data Type(length)</b>	The DB2 data type of the column and its length, or numeric precision and scale. This is an information-only field.
<b>Op</b>	Expression operator. You can specify one of the following values for the column on that line:  = Equal. This is the default operator. <> Not equal. > Greater than. < Less than. >= Greater than or equal to. <= Less than or equal to.  <b>IN</b> In <i>set</i> . If the value in the column is in the specified set of values (specified in <b>Value</b> field), the result of the expression is true. The IN expression operator generates the predicate IN <i>set</i> in the WHERE clause.  <b>NI</b> Not in <i>set</i> . If the value in the column is not in the specified set of values (specified in <b>Value</b> field), the result of the expression is true. The NI expression operator generates the predicate NOT IN <i>set</i> in the WHERE clause.  <b>LI</b> Like <i>pattern</i> . If the value in the column matches the pattern (specified in <b>Value</b> field), the result of the expression is true. The LI expression operator generates the predicate LIKE <i>pattern</i> in the WHERE clause.  <b>NL</b> Not like <i>pattern</i> . If the value in the column does not match the pattern (specified in <b>Value</b> field), the result of the expression is true. The NL expression operator generates the predicate NOT LIKE <i>pattern</i> in the WHERE clause.

## Basic SELECT Prototyping panel

### Value

The value to be used with the expression operator (specified in the **Op** field).

The format of the data you enter depends on the expression operator:

- For expression operators `=`, `<>`, `>`, `<`, `>=`, and `<=`:
  - For columns with an alphanumeric data type, specify a character string, optionally enclosed in quotation marks. If you do not enclose the string in quotes, FM/DB2 automatically adds the quotation marks around the string when it adds the generated predicate to the WHEN clause.

Examples:

```
SMITH  
'SMITH'  
SALES REP  
'SALES REP'
```

- For columns with a numeric data type, specify a numeric value.

Examples:

```
500  
33.75  
0
```

- You can also specify a column name as a value. The column name must be qualified with its correlation name.

Examples:

```
#1.WORKDEPT  
#2.BONUS
```

**Note:** To enter a string that begins with a “#”, you must enclose the string in quotation marks.

- For expression operators `IN` and `NI`:
  - For columns with an alphanumeric data type, specify a list of character strings. Each character string *must* be enclosed in quotation marks and separated by a comma.

Examples:

```
'SMITH', 'JONES', 'BROWN'  
'ANALYST', 'DESIGNER', 'OPERATOR', 'MANAGER'
```

- For columns with a numeric data type, specify a list of numeric values. Each value must be separated by a comma and, optionally, one or more spaces.

Examples:

```
101, 102, 103  
45.5, 50.0, 65.5
```

- You can also specify a list of column names. Each column name must be qualified with its correlation name and be separated by a comma. Examples:

```
#1.ACCT, #1.PROD, #2.MAINT  
#1.BONUS, #2.BONUS
```

- For the expression operator `LI`:
  - Specify a pattern (as a character string), optionally enclosed in quotation marks.

**Note:** You can only specify a pattern for columns with an alphanumeric data type.  
If you do not enclose the pattern in quotation marks, FM/DB2 automatically adds the quotation marks around the pattern when it adds the generated predicate to the WHEN clause.

The pattern can contain an underscore (\_) to represent any single character, or a percent sign (%) to represent a string of zero or more characters.

All of the following examples find the string "SMITH":

'SMITH'  
SMI  
'SM%'  
SMI

- Specify a column name as a value. The column name must be qualified with its correlation name.

Examples:

#1.SEX  
#1.WORKDEPT

- ) Inserts a closing parenthesis at the end of the predicate added to the WHERE clause. Use in conjunction with an opening parenthesis to ensure the predicate for this column is evaluated before other (non-parenthesized) predicates.

Parent panels

- "Tables, Views and Aliases panel" on page 776
- "SQL Prototyping, Execution and Analysis panel" on page 749

Child panels

To display this panel...	Use/do this
"Select Statement Browse panel" on page 724	Press Enter

Related tasks

- "Using basic SQL prototyping" on page 321

Related references

- "ALL primary command" on page 803
- "CANCEL primary command" on page 806
- "EXECUTE primary command" on page 821
- "RESET primary command" on page 847
- "SQL primary command" on page 854
- "UNDO primary command" on page 857

Bind Application Plan panel

FM/DB2 displays the Bind Application Plan panel if you use the DR line command against an item listed on the "Application Plans panel" on page 397.

## Bind Package panel

---

### Bind Package panel

FM/DB2 displays the Bind Package panel if you use either the BI or CBI line command against an item listed on the “Application Packages panel” on page 395.

---

### Children of Table panel

FM/DB2 displays the Children of Table panel if you use the CHR line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

## Collections panel

You use the Collections panel list to list collections in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSPACKAGES.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Collections	
Location:		Format <u>TABL</u>	
SEL	COLLID	PKG	COUNT
----	*-----1-----*	----	----
----	#2--+-----1-----+-----#4	----	----
****	Top of data	****	
----	DSNACCOR		1
----	DSNAOCLI		9
----	DSNASPCC		12
----	DSNEDCL		1
----	DSNESPCCS		1
----	DSNESPCC		1
----	DSNESPCC\$\$\$\$\$\$\$\$		1
----	DSNHYCRD		1
----	DSNJAR		8
----	DSNREXCS		1
----	DSNREXRR		1
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel
			Scroll PAGE

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663

### Child panels

To display this panel...	Use/do this
“Grant privileges panels” on page 635	Line command G
“Privileges panels” on page 678	Line command P
“Application Packages panel” on page 395	Line command PKG



## Collections panel

To display this panel...	Use/do this
"Package List panel" on page 667	Line command PKL
"Application Plans panel" on page 397	Line command PL
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564 (ISPF panel)	Line command ROW
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

## Column Attributes panel (alphanumeric)

The Column Attributes (alphanumeric) panel describes the formatting and data create attributes for an alphanumeric column.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Column Attributes			
Fixed Attributes:			
Column name	LASTNAME		
Type	VARCHAR(15)		
Use Attributes:			
Heading	_____		
Output width	_____		
Create Attributes:			
Filler	_____		
Action	_____		
Start character	_____		
Pattern	_____		
Repeat user pattern	YES or NO		
Scrambling Options:			
Scramble Type	Enter "/" to select option		
1. Random	Value	Column In	Out
2. Repeatable Dsn	_____		
3. Translate	_____		
4. Exit	_____		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieve F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

#### Column name

The name of the column.

**Type** The DB2 data type of the column.

#### Heading

The alternative column heading.

#### Output width

The number of character positions used by view, edit, browse, and print functions to show the column in TABL display or print format.

**Filler** The value placed in each byte of the column before any other operation in the construction of the column. The default value is a blank character.

*char* This character, such as 0, is written in each byte.

*X'cc'* This hexadecimal value, such as X'FF', is written in each byte.

#### Action

This column sets how the contents of the column are varied for each row. The default action is FX.

**FX** Contents of the column remain *fixed*.

**RA** Contents of the column are generated from characters selected at *random* from the specified pattern. A different set of characters is selected for each row.

**RO** Contents of the column *rolled*. The specified pattern is shifted left one byte for each row until the first nonblank character of the

## Column Attributes panel (alphanumeric)

pattern is in the first byte of the column. Then the pattern is shifted right one byte for each output row until it returns to its original position in the column. RO can only be used with a user-supplied pattern, not with an IBM-supplied pattern (see following description for **Pattern**).

- RP** Contents of the column are *rippled*. The specified pattern is shifted left one byte for each row and the truncated character is appended to the right end of the pattern.
- SL** Contents of the column are *shifted left* for each row. The specified pattern is shifted left one character and filled to the right with a space. When all characters in the pattern have been shifted out, the original pattern is restored and the process is repeated.
- SR** Contents of the column are *shifted right* for each row. The specified pattern is shifted right one character and filled to the left with a space. When all characters in the pattern have been shifted out, the original pattern is restored and the process is repeated.
- TL** Contents of the column are *truncated on the left* for each row. The specified pattern is left-truncated (the leftmost character replaced with a space) one character at a time until all characters in the pattern have been truncated. Then the original pattern is restored and the process is repeated.
- TR** Contents of the column are *truncated on the right* for each row. The specified pattern is right-truncated (the rightmost character replaced with a space) one character at a time until all characters in the pattern have been truncated. Then the original pattern is restored and the process is repeated.
- WV** Contents of the column are *waved*. The specified pattern is shifted left one byte for each row until the first nonblank character of the pattern is in the first byte of the column. Then the original pattern is restored and the process repeated. WV can only be used with a user-supplied pattern, not with an IBM-supplied pattern (see following description for **Pattern**).

### Start character

Starting character used when you specify an IBM-supplied pattern (AL, AN, or CO). The specified character must be one of the characters in the IBM-supplied pattern. The default start character is the first character in the IBM-supplied pattern.

### Pattern

The pattern used when generating data for this column. You can specify either an IBM-supplied pattern indicator or a quoted string containing a user-supplied pattern. The IBM-supplied patterns you can specify are:

- AL** Alphabetic. Characters A–Z inclusive.
- AN** Alphanumeric. Characters A–Z, 0–9, inclusive.
- CO** Collating sequence. All printable characters in the range X'40'–X'F9'.

If you provide a user-supplied pattern that is longer than the column, for actions other than RA and RP, the pattern is first truncated on the right to fit the receiving column before the specified action is performed. For the RA action, characters are randomly selected from the entire user-supplied

pattern. For the RP action, the entire pattern is rippled for each row before it is truncated to fit the receiving column.

If you provide a user-supplied pattern that is shorter than the column, you can specify that you want the pattern repeated to fill the column.

### Repeat user pattern

Specify YES if you have provided a user-supplied pattern that is shorter than the receiving column. This option has no effect when the RA action is specified. The default value is NO.

**NO** Fill character used to pad the receiving column.

**YES** Supplied pattern repeated as many times as necessary to fill the receiving column.

**Note:** IBM-supplied patterns are always repeated in a column, as necessary.

### Scrambling Options

These options control column scrambling used during copy, import, or export functions to produce test data.

#### Scramble Type

Specify one of the following values:

**Blank** No scrambling is performed. Value or range specifications are saved but ignored for the associated function.

#### 1 (Random)

Performs random scrambling. The same input value produces different output values on subsequent invocations.

#### 2 (Repeatable)

Performs repeatable scrambling. The same input value produces the same output value on subsequent invocations.

#### 3 (Translate)

Performs translation. The value data set is searched to find a matching input value. If a match is found, then the output value is taken from the output column of the matching record.

#### 4 (Exit)

Invokes a scrambling user exit. FM/DB2 displays a panel where you can specify the user exit name and user exit parameters and options.

## Parent panels

- “Column Selection/Edit panel” on page 419

## Child panels

None.

## Related tasks

- “Editing the template” on page 194
- “Changing column attributes” on page 79
- “Changing the attributes for an alphanumeric column” on page 80

### Column Attributes panel (DATE)

The Column Attributes (DATE) panel describes the formatting and data create attributes for a DATE column.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Column Attributes	
Fixed Attributes:			
Column name	BIRTHDATE		
Type	DATE		
Format	dd.mm.yyyy		
Use Attributes:			
Heading	_____		
Output width	_____		
Create Attributes:			
Date value	_____ (Use = for date now, * for runtime date)		
Increment	0 _____		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev
F9=Swap	F10=Actions	F12=Cancel	F7=Backward F8=Forward

#### Column name

The name of the column.

**Type** The DB2 data type of the column.

#### Format

The format in which the date is displayed or printed.

#### Heading

The alternative column heading.

#### Output width

The number of character positions used by view, edit, and print functions to show the column in TABL display or print format.

#### Date value

The initial value a column is to contain. Valid values are:

*start date* A date in a valid DB2 or local format.

\* (asterisk) The date the data is created. Not valid if the DB2 installation date format is LOCAL.

= The current date. Not valid if the DB2 installation date format is LOCAL.

#### Increment

A integer that represents the number of days to add to the date each cycle.

The default increment value is 0.

## Parent panels

- “Column Selection/Edit panel” on page 419

## Child panels

None.

## Related tasks

- “Editing the template” on page 194
- “Changing column attributes” on page 79
- Table 23 on page 368

### Column Attributes panel (numeric)

The Column Attributes (numeric) panel describes the formatting and data create attributes for a numeric column.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Column Attributes	
Fixed Attributes:			
Column name	SALARY		
Type	DECIMAL(9,2)		
Use Attributes:			
Heading	_____		
Output width	_____		
Leading zeros	NO	YES or NO	
Create Attributes:			
Start value	_____		
End value	_____		
Increment	_____		
Cycle	_____		
Scrambling Options:			
Scramble Type	Enter "/" to select option		
1. Random	Value	Column In	Out
2. Repeatable Dsn	_____		
3. Translate	_____		
4. Exit	_____		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieve
F9=Swap	F10=Actions	F12=Cancel	F7=Backward
			F8=Forward

**Column name** The name of the column.

**Type** The DB2 data type of the column.

**Heading** The alternative column heading.

**Output width** The number of character positions used by view, edit, and print functions to show the column in TABL display or print format.

**Leading zeros** Specifies whether leading zeros are to be shown when this field is displayed or printed in SNGL or TABL display or print format. Specify YES if you want leading zeros shown. Specify NO if you want leading zeros replaced with blanks.

**Start value** The initial value a column is to contain, before being adjusted by the specified increment. The value must be a number that the column can hold without truncation or loss of data. The value is converted to the appropriate numeric data type if required. For a column containing decimal places, the value specified cannot contain more decimal places than specified by the column definition. If you specify a negative number, the sign is honored, even if the column is unsigned. If the column is a floating-point column, the start value can be specified as a floating-point number consisting of a mantissa and an exponent (such as -1.14579E01). The mantissa consists of an optional sign (+ or -) followed by 1 to 16 digits. The mantissa can also contain a decimal point. The exponent consists of the letter E, an optional sign (+ or 0), and 1 or 2 digits.

The default start value is 0.

**End value**

The maximum value (if the increment is a positive number) or minimum value (if the increment is a negative number) a column is to contain. The value must be a number that the column can hold without truncation or loss of data. The value is converted to the appropriate numeric data type if required. For a column containing decimal places, the value specified cannot contain more decimal places than specified by the column definition. If you specify a negative number, the sign is honored, even if the column is unsigned. If the column is a floating-point column, the end value can be specified as a floating-point number consisting of a mantissa and an exponent (such as -1.14579E01). The mantissa consists of an optional sign (+ or -) followed by 1 to 16 digits. The mantissa can also contain a decimal point. The exponent consists of the letter E, an optional sign (+ or 0), and 1 or 2 digits.

The default end value is the largest positive or negative number the column can contain.

**Increment**

The positive or negative number by which the value in the column is adjusted for each row (or cycle of rows). The increment value must be a number that the column can hold without truncation or loss of data. The increment value is converted to the appropriate numeric data type if required. For a column containing decimal places, the value specified cannot contain more decimal places than specified by the column definition. If the column is a floating-point column, the increment can be specified as a floating-point number consisting of a mantissa and an exponent (such as -1.14579E01). The mantissa consists of an optional sign (+ or -) followed by 1 to 16 digits. The mantissa can also contain a decimal point. The exponent consists of the letter E, an optional sign (+ or 0), and 1 or 2 digits.

For the first row (or cycle of rows), the column is set to the start value you specify. For each subsequent row (or cycle of rows), the increment is added to the value in the column. This process continues while the calculated value in the column does not exceed the specified end value. That is, while the calculated value is less than or equal to the end value if the increment is a positive number, or greater than or equal to the end value if the increment is a negative number. When the end value is exceeded, the value in the column remains unchanged for all subsequent rows.

If the increment value is zero, the value in the column is always set to the start value.

The default increment is 0.

**Cycle**

The number of output rows that are generated before the increment value is applied to the column value. For example, if you specify a column start value of 100, an increment value of 10, and a cycle value of 3, the column in the first 3 rows contains 100, 110 in next 3 rows, 120 in the next 3 rows, and so on.

If cycle is zero, the value in the column is always set to the start value.

The default cycle is 1.



## Column Attributes panel (numeric)

### Scrambling Options

These options control column scrambling used during copy, import, or export functions to produce test data.

#### Scramble Type

Specify one of the following values:

**Blank** No scrambling is performed. Value or range specifications are saved but ignored for the associated function.

**1 (Random)**

Performs random scrambling. The same input value produces different output values on subsequent invocations.

**2 (Repeatable)**

Performs repeatable scrambling. The same input value produces the same output value on subsequent invocations.

**3 (Translate)**

Performs translation. The value data set is searched to find a matching input value. If a match is found, then the output value is taken from the output column of the matching record.

**4 (Exit)**

Invokes a scrambling user exit. FM/DB2 displays a panel where you can specify the user exit name and user exit parameters and options.

**Note:** For numeric columns, setting **Leading zeros** to YES causes leading zeros to be scrambled when random or repeatable scrambling (**Value** option blank) has been requested.

For example:

- With **Leading zeros** set to YES, 00123 may produce 56872 (zeros changed).
- With **Leading zeros** set to NO, 00123 may produce 00343 (zeros unchanged).

For repeatable scrambling, setting **Leading zeros** to YES guarantees a unique result.

### Parent panels

- "Column Selection/Edit panel" on page 419

### Child panels

None.

### Related tasks

- "Editing the template" on page 194
- "Changing column attributes" on page 79
- "Changing the attributes for a numeric column" on page 81

## Column Attributes panel (TIME)

The Column Attributes (TIME) panel describes the formatting and data create attributes for a TIME column.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Column Attributes	
Fixed Attributes:			
Column name	COL9_TIME		
Type	TIME		
Format	hh.mm AM or PM		
Use Attributes:			
Heading	_____		
Output width	_____		
Create Attributes:			
Time value	_____ (Use = for time now, * for runtime time)		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev
F9=Swap	F10=Actions	F12=Cancel	F7=Backward F8=Forward

#### Column name

The name of the column.

**Type** The DB2 data type of the column.

#### Format

The format in which the time is displayed or printed.

#### Heading

The alternative column heading.

#### Output width

The number of character positions used by view, edit, and print functions to show the column in TABL display or print format.

#### Time value

The initial value a column is to contain. Valid values are:

- |                   |   |
|-------------------|---|
| <i>start time</i> | A time in a valid DB2 or local format.  |
| * (asterisk)      | The time the data is created. Not valid if the DB2 installation time format is LOCAL. |
| =                 | The current time. Not valid if the DB2 installation time format is LOCAL.             |

### Parent panels

- "Column Selection/Edit panel" on page 419

### Child panels

None.

## Column Attributes panel (TIME)

### Related tasks

- “Editing the template” on page 194
- “Changing column attributes” on page 79
- Table 23 on page 368

## Column Attributes panel (TIMESTAMP)

The Column Attributes (TIMESTAMP) panel describes the formatting and data create attributes for a TIMESTAMP column.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Column Attributes	
Fixed Attributes:			
Column name	TSTAMP		
Type	TIMESTAMP		
Format	CCYY-MM-DD-HH.MM.SS.NNNNNN		
Use Attributes:			
Heading	_____		
Output width	_____		
Create Attributes:			
Timestamp value	_____		
(Use = for timestamp now, * for runtime timestamp)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval
F9=Swap	F10=Actions	F12=Cancel	F7=Backward F8=Forward

#### Column name

The name of the column.

**Type** The DB2 data type of the column.

#### Format

The format in which the timestamp is displayed or printed.

#### Heading

The alternative column heading.

#### Output width

The number of character positions used by view, edit, and print functions to show the column in TABL display or print format.

#### Timestamp value

The initial value a column is to contain. Valid values are:

*start timestamp* A timestamp in the DB2 timestamp format.

\* (asterisk) The date and time the data is created.

= The current date and time.

### Parent panels

- “Column Selection/Edit panel” on page 419

### Child panels

None.

## Column Attributes panel (TIMESTAMP)

### Related tasks

- “Editing the template” on page 194
- “Changing column attributes” on page 79

### Related references

- Chapter 14, “DB2 data types,” on page 367

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## Column Distribution panel

FM/DB2 displays the Column Distribution panel if you use the CDI line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

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## Column Part Statistics panel

FM/DB2 displays the Column Part Statistics panel if you use the PST line command against an item listed on the “Columns panel” on page 423.

Column Selection/Edit panel

You use the Column Selection/Edit panel to edit a template.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Column Selection/EditLine 1 of 16  
TABLE FMUSER.EMP  
----- Row Selection Criteria ---- (Use SQL/PF4 for full screen edit) -----  
1 Sel: +

Cmd	Seq	SHE	CL#	Column name	Data type(length)	Null	Default	Order	A/D
				**** Top of data ****					
---	S	1		EMPNO	CHARACTER(6)		None	---	-
---	S	2		FIRSTNME	VARCHAR(12)		None	---	-
---	S	3		MIDINIT	CHARACTER(1)		None	---	-
---	S	4		LASTNAME	VARCHAR(15)		None	---	-
---	S	5		WORKDEPT	CHARACTER(3)	Y	Null	---	-
---	S	6		PHONENO	CHARACTER(4)	Y	Null	---	-
---	S	7		HIREDATE	DATE	Y	Null	---	-
---	S	8		JOB	CHARACTER(8)	Y	Null	---	-
---	S	9		EDLEVEL	SMALLINT	Y	Null	---	-
---	S	10		SEX	CHARACTER(1)	Y	Null	---	-
---	S	11		BIRTHDATE	DATE	Y	Null	---	-
---	S	12		SALARY	DECIMAL(9,2)	Y	Null	---	-

Command ==>ScroT PAGE  
F1=HelpF2=SplitF3=ExitF4=SQLF5=RFindF6=RunTemp  
F7=UpF8=DownF9=SwapF10=LeftF11=RightF12=Cancel

Object type and name

The object type (TABLE or VIEW) and the name of the DB2 object being processed.

Row Selection Criteria

Field where you can enter a freeform SQL WHERE clause or expression that limits the rows selected from DB2.

If the template already contains row selection criteria, FM/DB2 shows the corresponding WHERE clause in this field.

Cmd

Prefix command area for entering template editor prefix commands:

- S, SS, Sn, S\*  
Selecting (or deselecting) columns.
- H, HH, Hn  
Holding (or freeing) columns.
- E  
Changing the attributes of a column.

Seq

The display sequence number of the column (in an FM/DB2 editor session) indicating either of these:

- The sequence number you have entered to change the sequence of the displayed columns.
- The sequence number generated by FM/DB2 as a result of a hold template editor prefix command (H, HH, or Hn) being entered in the Cmd prefix entry area.

S

Column selection indicator. An asterisk (\*) shows that the column is selected. Only selected columns appear in an FM/DB2 editor session.

## Column Selection/Edit panel

<b>H</b>	Column hold indicator. An “H” shows that the column is held. Held columns appear as the leftmost columns in an FM/DB2 editor session and are unaffected by scrolling left or right.	
<b>E</b>	Data edit indicator. An “E” shows that the column has been previously edited to add information such as data create, column headings, or scrambling options.	
<b>Cl#</b>	<p>The column number as defined in the DB2 catalog. The column number reflects the DB2 column number unless either of the following are true:</p> <ul style="list-style-type: none"><li>• The column is a generated column</li><li>• The column is not a column of the first table named in the SELECT statement used to create the result table</li></ul> <p>If either of these conditions is true, the column has a number greater than the maximum DB2 column number, for all specified columns in the first DB2 object named in the SELECT statement.</p>	
<b>Column name</b>	The name of the column.	
<b>Data type(length)</b>	The DB2 data type (and optionally the length) of the column.	
<b>Null</b>	Shows whether the column is defined as nullable.	
	<b>Y</b>	Nullable column
	<b>(blank)</b>	DB2 null values are not permitted
<b>Default</b>	Default value information for the column:	
	<b>Always</b>	Either a ROWID or identity column defined with the <b>generated always</b> attribute.
	<b>Default</b>	Either a ROWID or identity column defined with the <b>generated by default</b> attribute.
	<b>None</b>	There is no default value for the column.
	<b>Null</b>	The default value is the DB2 null value.
	<b>On type</b>	The column has a default value that depends on the data type of the column:
	<b>Data type</b>	<b>Default value</b>
	Numeric	0
	Fixed-length character data types	Blanks
	Varying-length data types	String of length 0
	DATE	Current date
	TIME	Current time
	TIMESTAMP	Current date and time
	<b>On value</b>	The column has a default value that is defined in the DEFAULTVALUE column of the SYSIBM.SYSCOLUMNS catalog table.

	<b>SQID</b>	The default value is the value of the SQL authorization ID of the process at the time the default value is used.
	<b>USER</b>	The default value is the value of the USER special register at the time the default value is used.
<b>Order</b>		An optional sequence number indicating how to order the data, based on the data values for the column, when the data is retrieved from DB2.
<b>A/D</b>		Sort sequence indicator. You can only specify this if an order sequence number ( <b>Order</b> ) is also specified.
	<b>A</b>	Ascending
	<b>D</b>	Descending

## Parent panels

- “DB2 View panel” on page 559
- “DB2 Edit panel” on page 544
- “Print Utility panel” on page 675
- “Copy Utility (“From”) panel” on page 430
- “Export Utility panel” on page 612
- “Data Create Utility panel” on page 533

## Child panels

To display this panel...	Use/do this
“Table View panel” on page 770	If parent panel is DB2 View and you press F3
“DB2 View panel” on page 559	If parent panel is DB2 View and you press F12
“Table Edit panel” on page 761	If parent panel is DB2 Edit and you press F3
“DB2 Edit panel” on page 544	If parent panel is DB2 Edit and you press F12
“Table Browse panel” on page 758	If parent panel is DB2 Browse and you press F3
“DB2 Browse panel” on page 540	If parent panel is DB2 Browse and you press F12
“Template Save panel” on page 784	Press F3
“DB2 Template Description panel” on page 555	Primary command DESCRIBE
“Export “To” panel” on page 609	If parent panel is Export Utility and you press F3
“Column Attributes panel (alphanumeric)” on page 407	Line command E for an alphanumeric column
“Column Attributes panel (numeric)” on page 412	Line command E for a numeric column
“Column Attributes panel (DATE)” on page 410	Line command E for a DATE column



## Column Selection/Edit panel

To display this panel...	Use/do this
"Column Attributes panel (TIME)" on page 415	Line command E for a TIME column
"Column Attributes panel (TIMESTAMP)" on page 417	Line command E for a TIMESTAMP column
"Row Selection Criteria panel" on page 710	Enter 1 on the command line

### Related tasks

- "Locating a column" on page 110
- "Restricting the data that FM/DB2 loads from DB2" on page 106
- "Large numeric fields" on page 132
- "Copying data from one DB2 object to another" on page 195
- "Copying data from a VSAM or QSAM file" on page 200
- "Copying data to a VSAM or QSAM file" on page 223
- "Editing the template" on page 194
- "Running Print in batch" on page 265
- "Editing a template" on page 63
- "Using the SQL Edit session" on page 71
- "Manipulating columns" on page 74
- "Selecting columns" on page 74
- "Holding columns (when scrolling left or right)" on page 75
- "Changing the sequence of displayed or printed columns" on page 76
- "Changing the sequence of displayed or printed rows" on page 77
- "Changing the column heading" on page 80
- "Changing column attributes" on page 79

### Related references

- Chapter 14, "DB2 data types," on page 367
- "TEDIT primary command" on page 856

## Columns panel

You use the Columns panel to list column object types in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSCOLUMNS.

Process Options Utilities Help						
FM/DB2 (DFA2)			Columns			
						Format TABL
SEL	NAME	TBCREATOR	TBNAME	COLNO	COLTYPE	LENGTH
*	*	*	*	*	*	*
----	#1--+-+-----1-----+--	#3--+-+-----	#2--+-+-----1-----+--	-----#4	#5--+-+-----	-----#6
****	Top of data	****				
----	MAJSYS	CARLAND	PMR91932	1	CHAR	1
----	ACTION	CARLAND	PMR91932	2	CHAR	1
----	OBJFLD	CARLAND	PMR91932	3	CHAR	2
----	SRCHCRIT	CARLAND	PMR91932	4	CHAR	2
----	SCRTYPE	CARLAND	PMR91932	5	CHAR	1
----	HEADTXT	CARLAND	PMR91932	6	CHAR	50
----	SELTXT	CARLAND	PMR91932	7	CHAR	50
----	INFOTXT	CARLAND	PMR91932	8	CHAR	79
----	HELPTXT	CARLAND	PMR91932	9	CHAR	79
----	PFKTX1	CARLAND	PMR91932	10	CHAR	79
----	PFKTX2	CARLAND	PMR91932	11	CHAR	79
Command ==>				Scroll PAGE		
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange	
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel	

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Constraint Columns for panel” on page 426
- “Columns in Table panel” on page 424
- “Privileges panels” on page 678

### Child panels

To display this panel...	Use/do this
“Tables, Views and Aliases panel” on page 776	Line command AT

## Columns panel

To display this panel...	Use/do this
See "Comment panels"	Line command COM
"Column Distribution panel" on page 418	Line command DI
"Distinct Types panel" on page 565	Line command DT
"Grant privileges panels" on page 635	Line command G
"Columns panel" on page 423	Line command H
"Details panels" on page 564	Line command I
"Label Column panel" on page 648	Line command LAB
"Privileges panels" on page 678	Line command P
"Display Row panel" on page 564	Line command ROW
"Tables, Views and Aliases panel" on page 776	Line command T
"Indexes panel" on page 645	Line command X
"Sort Fields panel" on page 747	Line command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

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## Columns in Index panel

FM/DB2 displays the Columns in Index panel if you use the COL line command against an item listed on the "Indexes panel" on page 645.

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## Columns in Table panel

FM/DB2 displays the Columns in Table panel if you use the COL line command against an item listed on:

- The "Tables, Views and Aliases panel" on page 776, or
- The "Table Check Constraint Dependencies panel" on page 760

---

## Comment panels

These panels are:

- Comment Column panel
- Comment Distinct Type panel
- Comment Procedure panel
- Comment Specific Function panel
- Comment Table panel
- Comment Trigger panel

FM/DB2 displays one of these panels when you specify the COM line command against an object displayed in a list of DB2 objects.

## Compiler Language Selection panel

You use the Compiler Language Selection panel to set the language to be used for compiling the current source member to create a template. The default language is COBOL. This option is saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Compiler Language Selection	
Language Selection:			
Specify Default Compiler			
<u>1</u>	1. COBOL	Use the COBOL compiler	
<u>2</u>	2. PL/I	Use the PL/I compiler	
<u>3</u>	3. Auto detect	Determine which compiler to use	
<u>4</u>	4. HLASM	Use the HLASM compiler	
Processing Options:			
Enter "/" to select option			
<u>O</u> verride compiler options for template update			
<u>P</u> reserve copybook library			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

### Language Selection

The following language can be specified for the compilation of the source member to create a template:

1. **COBOL** Use the COBOL compiler. This is the default setting.
2. **PL/I** Use the PL/I compiler.
3. **Auto detect** Perform a heuristic analysis of the source and use the appropriate compiler.
4. **HLASM** Use the HLASM compiler.

### Parent panels

- "Set System Processing Options panel" on page 740

### Child panels

None.

### Related tasks

- "Compiler language selection (option 0.4)" on page 46
- "How FM/DB2 compiles a copybook into a template" on page 59

## Confirm Cancel panel

FM/DB2 displays the Confirm Cancel panel when you press the Cancel function key (F12), or the attention interrupt key during an FM/DB2 query.

## Confirm Cancel panel

### Panel and field definitions

Confirm Cancel	
Attention has been pressed.	
Instructions:	
Press PF5 or type CONTINUE to return to the current session and continue processing.	(optional)
Press PF6 or type ABORT to confirm the cancel request.	(optional)
NB: ENTER has no effect	
	elect option
Command ==>	
F5=Continue F6=Abort	rd F8=Forward

### Related tasks

- “Canceling long-running DB2 queries” on page 38

---

### Constraint Columns for panel

FM/DB2 displays the Constraint Columns for panel if you use the COL line command against an item listed on the “Table Check Constraints panel” on page 760.

## Copy Options panel

You use the Copy Options panel to set the global (or initial) options used by the Copy utility (3.3). These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

The global Copy options are restored at the start of each Copy session and can be temporarily changed for a copy session by selecting **Edit Copy Options** on the Copy “To” entry panel.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Copy Options	Global Settings	
From Table Concurrency Option: Enter "/" to select option / Use uncommitted read		To Table Locking Option: Locking 1 1. None 2. Share mode 3. Exclusive mode	
Processing Options: Duplicate key processing 1 1. Ignore 2. Update Max duplicates ALL		Enter "/" to select option - Delete existing rows - Ignore RI/Constraint errors - Native unicode processing	
Command ==> F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap F12=Cancel			

#### Use uncommitted read

Indicates whether to enable retrieval of uncommitted data for the Copy session:

/ Retrieve data, including data not yet committed by another user or application program. The resultant SELECT statement used by FM/DB2 to retrieve table data has the suffix “WITH UR” appended. This allows reading through any locks which might be held on that table. This is the default setting.

(blank)

Only retrieve committed data from tables without write locks.

**Note:** If FM/DB2 attempts to retrieve data that has a write lock, an SQL error can result.

### Locking

FM/DB2 provides options to lock the table to prevent other users from either updating or reading data. Use these options with caution.

- 1. None** FM/DB2 does not issue an explicit table lock for the object being copied. Locking of rows and pages within the object is managed by DB2 according to FM/DB2 concurrency options and DB2 installation and object definition options. This is the default setting.
- 2. Share mode** FM/DB2 issues a LOCK TABLE IN SHARE MODE statement before reading the data from DB2. This restricts all other users to read-only operations on the object.
- 3. Exclusive mode** FM/DB2 issues a LOCK TABLE IN EXCLUSIVE MODE statement before reading the data from DB2. This prevents all other users from accessing the object, unless the other process is running with an isolation level of uncommitted read.

### Duplicate key processing

You can specify what action FM/DB2 takes if it encounters a duplicate key. Set this option to one of the following:

- 1. Ignore** Existence of duplicate key ignored. This is the default.
- 2. Update** Updates duplicate rows when DB2 returns a duplicate key error (SQL error code -803) in response to an INSERT SQL statement. When this option is selected, FM/DB2 attempts to update the existing row. All columns of the table that are part of at least one unique index are used to identify the row. No comparison is made between the copied row and the existing row prior to the update operation (that is, the update is done regardless of whether the copied row and existing row are the same). When using this option, it is recommended that a DB2 table name, rather than a view name, be specified. FM/DB2 does not attempt to update existing rows in a view defined on a view.

For \_\_\_\_\_ **duplicates**

Specifies the maximum number of duplicates permitted. Valid values are:

- A number in the range 0 to 2147483647. If FM/DB2 detects more than this number of duplicates during the copy process, the copy is canceled and all changes are rolled back.
- ALL

### Delete existing rows

Determines whether FM/DB2 deletes all existing rows in the table before copying the data.

/ Delete all existing rows.

(blank)

Do not delete existing rows. This is the default setting.

### Ignore RI/Constraint errors

Determines what processing occurs when the Copy utility encounters an SQLCODE-530 (RI error - no primary key) or SQLCODE-545 (Constraint error).

/ The Copy process ignores the error and continues with the next row. The row is not copied or updated and is not included in the copy count.

(blank)

Copy utility canceled. This is the default setting.

#### **Native unicode processing**

Determines how FM/DB2 processes Unicode encoded data when copying data between two Unicode encoded tables. When the option is enabled, Unicode encoded data is copied between Unicode encoded tables without the potential for character substitution. When the option is not enabled, the option has no effect; that is, the default processing is used. When either or both of the FROM or TO tables are not Unicode encoded, the option has no effect, even if enabled. When this option and the batch execution options are enabled, "NATIVE= YES" is shown in the generated JCL.

/ Process Unicode data natively.

(blank)

Do not Process Unicode data natively. This is the default setting.

### **Parent panels**

- 
- "Copy Utility ("To") panel" on page 438

### **Child panels**

None.

### **Related tasks**

- "Setting options for the current Copy session" on page 199
- "Copy utility options (option 3.3)" on page 49



## Copy Utility (“From”) panel

You use the Copy Utility (“From”) panel to enter the name of an object to be copied.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Copy Utility	
From DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	DSN8610	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	Create audit trail (*)		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

- Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.
- Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:
- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
  - Synonym names are not recognized or included in the selection list.
- Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.
- If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.
- Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.

**Copy count** The maximum number of rows to be copied from a DB2 object. It must be one of the following:

- A number in the range 1–99999999,
- An asterisk (\*), or
- ALL. This is the default, where all rows selected from the DB2 object are copied.

When the “From” template includes a “Row Selection Criteria” (or WHERE clause), only those rows matching the selection criteria are considered eligible to be copied.

**Data set name** The name of a data set that contains, or will contain, the template. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Template usage

The Copy Utility panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

##### 2. Previous

Uses the last (previously used) template for this table.

## Copy Utility (“From”) panel

### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **From Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following option by entering a “/” or an “A”:

#### Edit template

Use to edit the template before copying the data.

#### Copy panel values

Use to copy the DB2 object name and template details to the “To” panel.

#### Create audit trail

**Note:** “(\*)” is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

## Parent panels

- “Utility Functions panel” on page 797
- “Tables, Views and Aliases panel” on page 776

## Child panels

To display this panel...	Use/do this
“Column Selection/Edit panel” on page 419	Select <b>Edit template</b>
“Copy Utility (“To”) panel” on page 438	Press Enter

#### RELATED CONCEPTS

- “Information stored in a template” on page 56
- “SAF-rule controlled auditing” on page 51

## Related tasks

- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55
- “Where you can use templates” on page 8
- “Copying data from one DB2 object to another” on page 195
- “Copying data from a VSAM or QSAM file” on page 200
- “Copying data to a VSAM or QSAM file” on page 223
- “Specifying a data set and a member name” on page 34
- “FM/DB2 system options (option 0.2)” on page 46

## COPY Utility (Index Spaces) panel

You use the COPY Utility (Index Spaces) panel to generate utility control statements using the COPY INDEXSPACE form of the COPY utility.

The format of the COPY Utility (Index Spaces) panel depends on which, if any, of the filter fields you specified on the DB2 Utilities panel:

- The panel shown in Figure 101 is displayed by default, *or* if you specified information in the **Database name** filter field, the **Table/index space name** filter field, or both.
- The panel shown in Figure 102 on page 435 is displayed if you specified information in the **Table/index owner** filter field, the **Table/index name** filter field, or both.

**Note:** Indexes need to have been defined with the COPY YES clause. Indexes which have not been defined with the COPY YES clause cannot be selected for image copying in the panel.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		COPY Utility (Index Spaces)	Row 1 to 8 of 8
S P e R l C	Index Database Space Name Name	Part'n Number	Allocation Primary Secdry Space
—	BILLSDB1 XDEPT1	0	3 3 0
—	BILLSDB1 XDEPT2	0	3 3 0
—	BILLSDB1 XDEPT3	0	3 3 0
—	BILLSDB1 XEMP1	1	3 3 0
—	BILLSDB1 XEMP1	2	3 3 0
—	BILLSDB1 XEMP1	3	3 3 0
—	BILLSDB1 XEMP1	4	3 3 0
—	BILLSDB1 XEMP2	0	3 3 0
***** Bottom of data *****			
Command ==> _____ Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

Figure 101. COPY Utility (Index Spaces) panel—default format

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		COPY Utility (Index Spaces)				Row 1 to 8 of 8	
S	P						
e	R	Index	Index	Part'n	Allocation		
l	C	Creator	Name	Number	Primary	Secdry	Space
—		ARROWSB	XDEPT1	0	3	3	0
—		ARROWSB	XDEPT2	0	3	3	0
—		ARROWSB	XDEPT3	0	3	3	0
—		ARROWSB	XEMP1	1	3	3	0
—		ARROWSB	XEMP1	2	3	3	0
—		ARROWSB	XEMP1	3	3	3	0
—		ARROWSB	XEMP1	4	3	3	0
—		ARROWSB	XEMP2	0	3	3	0
***** Bottom of data *****							
Command ==>							
F1=Help		F2=Split		F3=Exit		F7=Backward F8=Forward F9=Swap	
F12=Cancel							

Figure 102. COPY Utility (Index Spaces) panel—alternative format

**Sel** Selection column. To select an index space, type S in this column. Selected index spaces show an asterisk (\*) in the **PRC** column.

**PRC** Processing indicator. An asterisk (\*) indicates the index space is selected.

**Database Name**

The name of the database in which the index space is defined.

**Index Space Name**

The name of the index space.

**Part'n Number**

The partition number for the table space. This is 0 for a non-partitioned table space. A non-zero value indicates a partition of a partitioned table space. By default, when you select a non-partitioned table space for processing, the utility control statements do not include the DSNUM ALL parameter. When you select a partition, the utility control statements include a DSNUM *nnn* clause (*nnn* is the partition number you selected).

**Primary**

The primary allocation value for the table space. See the *DB2 Utility Guide and Reference* for a full explanation. This value gives some indication of the size of the table space (but is not definitive).

**Secondary**

The secondary allocation value for the table space. See the *DB2 Utility Guide and Reference* for a full explanation.

**Space**

The space allocation for the table space, as reported by the STOSPACE utility. See the *DB2 Utility Guide and Reference* for a full explanation. This value gives an accurate indication of the size of the table space when the STOSPACE utility was run.

**Index Creator** The name of the index creator.

**Index Name** The name of the index.

## Parent panels

- “DB2 Utilities panel” on page 556

## **COPY Utility (Index Spaces) panel**

### **Child panels**

None.

### **Related tasks**

- “COPY utility” on page 287
- “COPY (index spaces)” on page 289

## COPY Utility (Index Spaces) with LISTDEF panel

You use the COPY Utility (Index Spaces) with LISTDEF panel to generate utility control statements using the COPY TABLESPACE form of the COPY utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		COPY Utility (Index Spaces)	Row 1 to 3 of 3
<p>P</p> <p>R LISTDEF</p> <p>Cmd C Name COPYDDN Template Full Limits Report</p> <p>* FRED SYSCOPY N Y One Two Only</p> <p>* JAMES SYSCOPY N Y One Two Only</p> <p>GEORGE SYSCOPY N Y One Two Only</p> <p>***** Bottom of data *****</p>			
<p>Command ==&gt;</p> <p>F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap</p> <p>F12=Cancel</p>			

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)

**R(n)** Repeat the current row (n times)

**D(n)** Delete (n) row(s)

**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- "DB2 Utilities panel" on page 556

### Child panels

None.

### Related tasks

- "COPY utility" on page 287
- "COPY (index spaces)" on page 289



## Copy Utility (“To”) panel

You use the Copy Utility (“To”) panel to enter the name of the DB2 object that is the target of the copy operation. You also use this panel to specify the name of a template that is to provide the column mapping and initialization information.

### Panel and field definitions

Process	Options	Utilities	Help
Copy from DSN8610.EMP			
To DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	FMNUSER	Table space . . . . .	(optional)
Name . . . . .	EEMP		
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			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

**Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

**Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.

**Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.

**Data set name** The name of a data set that contains, or will contain, the template. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Template usage

The Copy Utility panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

##### 2. Previous

Uses the last (previously used) template for this table.

##### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

##### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information

## Copy Utility (“To”) panel

in the member specified in the **To Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a “/” or an “A”:

### **Edit copy options**

Displays the copy options panel

### **Edit template mapping**

Use to edit the template for the table to which you are copying the data, before copying the data.

### **Batch execution**

Generates the JCL to perform the FM/DB2 Copy function as a batch job. You can edit the JCL and submit the job manually once the JCL has been generated.

## Parent panels

- “Copy Utility (“From”) panel” on page 430

## Child panels

To display this panel...	Use/do this
“Copy Options panel” on page 427	Select <b>Edit copy options</b>
“Template Mapping panel” on page 783	Select <b>Edit template mapping</b>

## Related tasks

- “Specifying a data set and a member name” on page 34
- “Selecting options on FM/DB2 panels” on page 28
- “Copying data from one DB2 object to another” on page 195
- “Mapping data” on page 86
- “Copying data from one DB2 object to another” on page 195

## COPY Utility (Table Spaces) panel

You use the COPY Utility (Table Spaces) panel to generate utility control statements using the COPY TABLE SPACE form of the COPY utility.

### Panel and field definitions

Process		Options		Utilities		Help					
FM/DB2 (DFA2)				COPY Utility (Table Spaces)				Row 1 to 12 of 233			
S	P	Table	F	Change	R						
e	R	Database	C	Limits	P	Part'n	Number	Allocation			
l	C	Name	P	One Two	O	Number	Tables	Primary	Secdry	Space	
—		BILLSDB1 TS1D	Y	— —	N	0	1	3	3	0	
—		BILLSDB1 TS1E	Y	— —	N	1	1	3	3	0	
—		BILLSDB1 TS1E	Y	— —	N	2	1	5	5	0	
—		BILLSDB1 TS1E	Y	— —	N	3	1	3	3	0	
—		BILLSDB1 TS1E	Y	— —	N	4	1	5	5	0	
*		BILLSDB2 UTILTS1	Y	— —	N	0	2	180	180	0	
—		CJMAODA CJMAOSD	Y	— —	N	0	1	5	5	48	
—		CJMAODA CJMAOSE	Y	— —	N	1	1	3	3	144	
—		CJMAODA CJMAOSE	Y	— —	N	2	1	5	5	144	
—		CJMAODA CJMAOSE	Y	— —	N	3	1	3	3	48	
—		CJMAODA CJMAOSE	Y	— —	N	4	1	5	5	144	
—		CJMAODA CJMAOSP	Y	— —	N	0	4	40	20	192	
Command ==>											
F1=Help		F2=Split		F3=Exit		F7=Backward		F8=Forward		F9=Swap	
F12=Cancel											

**Sel** Selection column. To select a table space, type S in this column. Selected table spaces show an asterisk (\*) in the **PRC** column.

**PRC** Processing indicator. An asterisk (\*) indicates the table space is selected.

#### Database Name

The name of the database in which the table space is defined.

#### Table Space Name

The name of the table space.

#### FCP

Full Copy flag:

**Y** Take a full image copy. This is the default setting.

**N** Take a partial image copy.

#### Change Limits (One Two)

You can specify 1 or 2 values indicating the percentage of changed pages needed to trigger a partial image copy, and a full image copy. See the *DB2 Utility Guide and Reference* for a detailed explanation. A value entered in either of the **Change Limits** fields overrides the **FCP** setting.

#### RPO

Report Only. This only takes effect if you have specified a change limit value (see **Change Limits**).

**Y** Only image copy information is displayed. Image copies are not taken, only recommended. FM/DB2 generates a DD DUMMY in the JCL for the SYSCOPY DD name.

**N** Image copy information is displayed and image copies taken. This is the default setting.

## COPY Utility (Table Spaces) panel

The remaining columns of the ISPF table are display-only fields showing information from the DB2 catalog.

### Part'n Number

The partition number for the table space. This is 0 for a non-partitioned table space. A non-zero value indicates a partition of a partitioned table space. By default, when you select a non-partitioned table space for processing, the utility control statements do not include the DSNUM ALL parameter. When you select a partition, the utility control statements include a DSNUM *nnn* clause (*nnn* is the partition number you selected).

### Number Tables

The number of tables defined within the table space.

### Primary

The primary allocation value for the table space. See the *DB2 Utility Guide and Reference* for a full explanation. This value gives some indication of the size of the table space (but is not definitive).

### Secdry

The secondary allocation value for the table space. See the *DB2 Utility Guide and Reference* for a full explanation.

### Space

The space allocation for the table space, as reported by the STOSPACE utility. See the *DB2 Utility Guide and Reference* for a full explanation. This value gives an accurate indication of the size of the table space when the STOSPACE utility was run.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “COPY utility” on page 287

## COPY Utility (Table Spaces) with LISTDEF panel

You use the COPY Utility (Table Spaces) with LISTDEF panel to generate utility control statements using the COPY TABLE SPACE form of the COPY utility, and with a LISTDEF provided.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		COPY Utility (Table Spaces)	Row 1 to 1 of 1
P			Change
R LISTDEF		COPYDDN	Full Limits Report
Cmd C Name	COPYDDN	Template	Copy One Two Only
FRED	SYSCOPY	N	Y ___ N
JAMES	SYSCOPY	N	Y ___ N
***** Bottom of data *****			
Command ==> _____ Scroll PAGE			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)  
**R(n)** Repeat the current row (n times)  
**D(n)** Delete (n) row(s)  
**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- "DB2 Utilities panel" on page 556

### Child panels

None.

## **COPY Utility (Table Spaces) with LISTDEF panel**

### **Related tasks**

- “COPY utility” on page 287
- “COPY (table spaces)” on page 288

## Create Alias panel

You use the Create Alias panel to create an alias for a table or a view at the correct location.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Alias

Alias Details:  
Owner . . . . . + (optional)  
Name . . . . . +

Table or View Details:  
Location . . . . .  
Owner . . . . . +  
Name . . . . . +

Command ==>  
F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward  
F9=SwapF10=LeftF11=RightF12=Cancel

- Owner (Alias Details)

The owner of the alias you want to create (optional). If you leave this field blank, FM/DB2 uses the current SQL ID as a default ID. Otherwise, type the full name of the owner.
- Name Alias Details

The name of the alias you want to create (mandatory).
- Location

The location of the table or view for which you want to create an alias (optional). If you leave this field blank, FM/DB2 uses the location of the local DB2 system.
- Owner (Table or View Details)

The owner of the table or view for which you want to create an alias (optional). If you leave this field blank, FM/DB2 uses the current SQL ID as a default ID. Otherwise, type the full name of the owner.
- Name (Table or View Details)

The name of the table or view for which you want to create an alias (mandatory).

### Parent panels

- “DB2 Object Functions panel” on page 550
- “Tables, Views and Aliases panel” on page 776
- “Synonyms panel” on page 756

### Child panels

None.



## Create Alias panel

### Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating an alias” on page 185

## Create Auxiliary Table panel

You use the Create Auxiliary Table panel to create a new auxiliary table.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Auxiliary Table	
Auxiliary table:			
Owner . . . . .	_____	+ (optional)	
Name . . . . .	_____	+	
Table Space:			
Name . . . . .	_____	(optional)	
Database . . . . .	_____	(optional)	
Base Table:			
Owner . . . . .	_____	+ (optional)	
Name . . . . .	_____	+	
Base Table Column:			
Name . . . . .	_____	(optional)	
Partition . . . . .	_____	(optional)	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

#### **Owner** (Auxiliary Table)

Specifies the owner of the auxiliary table.

#### **Name** (Auxiliary Table)

Specifies the name of the auxiliary table.

#### **Name** (Table Space)

Specifies the LOB table space in which the auxiliary table is created.

#### **Database** (Table Space)

Specifies the database to which the specified table space belongs.

#### **Owner** (Base Table)

Specifies the owner of the base table containing the LOB column that is stored in the auxiliary table.

#### **Name** (Base Table)

Specifies the name of the base table containing the LOB column that is stored in the auxiliary table.

#### **Name** (Base Table Column)

Specifies the name of the LOB column in the base table that is stored in the auxiliary table.

#### **Partition** (Base Table Column)

For base tables defined in partitioned table spaces, specifies the partition of the base table for which this auxiliary table stores data.

### Parent panels

- “DB2 Object Functions panel” on page 550

## Create Auxiliary Table panel

### Child panels

None.

### Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating an auxiliary table” on page 191

## Create Database panel

You use the Create Database panel to create a new database.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Database	
Database:			
Name . . . . .		(required)	
Buffer Pools, Storage Groups:			
Storage group name . . . . .		+ (optional)	
Buffer pool for table spaces		(optional)	
Buffer pool for indexes		(optional)	
Database Options:			
Database Usage		Data Encoding (only for user databases)	
- 1. User database (default)		- 1. EBCDIC (default)	
2. Work file database		2. ASCII	
3. Temporary database		3. UNICODE	
Member Selection:			
Member name		(only valid for work file databases)	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Name** Specify the name of the DB2 database you want to create.

#### Storage group name

Names the DB2 storage group to be used, as the default group for DASD allocation for table spaces and indexes in the database.

#### Buffer pool for table spaces

Specifies the default buffer pool name to be used for table spaces created within the database.

1. 8K buffers: (BP8K0-BP8K9)
2. 16K buffers: (BP16K0-BP16K9)

#### Note:

8K and 16K buffer pools are not supported for work file databases.

#### Buffer pool for indexes

Specifies the default buffer pool name to be used for the indexes created within the database.

#### Database Usage

##### 1. User database (default)

Specifies the database is an ordinary database for general user tables and indexes.

##### 2. Work file database

Specifies the database is a work file database for use in a data sharing environment.

## Create Database panel

### Temporary database

Specifies the database is for declared temporary tables only.

### Data Encoding (only for user databases)

#### 1. EBCDIC (default)

Specifies the encoding scheme.

#### 2. ASCII

Specifies the encoding scheme.

#### 3. UNICODE

Specifies the encoding scheme.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Databases panel” on page 538

## Child panels

None.

## Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating a database” on page 175

## Create Distinct Type panel

You use the Create Distinct Type panel to create a new distinct type.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2) Create Distinct Type			
Distinct Type:			
Schema . . . . .			+ (optional)
Name . . . . .			+
Source Data Type:			
Source Type . . . . .			+
Length/Precision . . . . .			(optional)
Scale . . . . .			(optional)
For Data		Encoding Method	
1. SBCS		1. EBCDIC	
2. Mixed		2. ASCII	
3. Bit		3. UNICODE	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
F7=Backward F8=Forward			

**Schema** The schema name in which to create the function.

**Name** The name of the user-defined function.

**Source Type** DB2 data type in which the distinct type is based.

#### Length/Precision

Data length of the distinct type. For distinct types based on the DECIMAL data type, this is the precision.

**Scale** For distinct types based on the DECIMAL data type.

**For Data** For non-DBCS data types (CHAR, VARCHAR and CLOB), specifies the subtype. BIT is not allowed for CLOB.

#### Encoding Method

##### 1. EBCDIC (default)

Specifies the encoding scheme for the distinct data type.

##### 2. ASCII

Specifies the encoding scheme for the distinct data type.

##### 3. UNICODE

Specifies the encoding scheme for the distinct data type.

EBCDIC and ASCII specifies the encoding scheme for the distinct data type.

### Parent panels

- “DB2 Object Functions panel” on page 550
- “Distinct Types panel” on page 565

## Create Distinct Type panel

### Child panels

None.

### Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating a distinct type” on page 188

## Create Function: Option List (1/2) panel

You use the Create Function: Option List (1/2) panel to specify information to define options for the function to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp															
FM/DB2 (DFA2) Create Function: Option List (1/2)																		
External Name . . .	_____	+ (usually optional)																
Scratchpad . . . .	_____	(optional)																
Package Collection	_____	+ (optional)																
WLM Environment . .	_____	+ (optional)																
Time Limit . . . .	_____	(CPU units - optional)																
<table border="0"> <tr> <td>Language (Required)</td> <td>SQL</td> <td>Security</td> </tr> <tr> <td>- 1. ASSEMBLE</td> <td>- 1. Reads SQL Data</td> <td>- 1. DB2</td> </tr> <tr> <td>2. C</td> <td>2. No SQL</td> <td>2. User</td> </tr> <tr> <td>3. COBOL</td> <td>3. Modifies SQL Data</td> <td>3. Definer</td> </tr> <tr> <td>4. PLI</td> <td>4. Contains SQL</td> <td></td> </tr> </table>				Language (Required)	SQL	Security	- 1. ASSEMBLE	- 1. Reads SQL Data	- 1. DB2	2. C	2. No SQL	2. User	3. COBOL	3. Modifies SQL Data	3. Definer	4. PLI	4. Contains SQL	
Language (Required)	SQL	Security																
- 1. ASSEMBLE	- 1. Reads SQL Data	- 1. DB2																
2. C	2. No SQL	2. User																
3. COBOL	3. Modifies SQL Data	3. Definer																
4. PLI	4. Contains SQL																	
Parallelism																		
- 1. Allowed																		
2. Disallowed																		
Run-time Options (optional)																		
_____ +																		
Command ==>																		
F1=Help	F2=Split	F3=Exit	F4=Expand															
F9=Swap	F10=Left	F11=Right	F12=Cancel															
			F7=Backward															
			F8=Forward															

#### External Name

Name of the MVS load module that contains the user-written code to implement the function.

#### Scratch Pad

Size of the scratch pad allocated by DB2 and passed to the function when it is called.

#### Package Collection

Specifies the package collection to be used when the function is run. If not specified, the invoking program's package collection is used.

#### Workload Manager Environment

Specifies the MVS workload manager environment in which the function is to run.

#### Time Limit (CPU units)

Limit on processor service units used by a single invocation of the function.

#### LANGUAGE (Required)

Application programming language of the function:

#### SQL

Specifies what type of SQL statements the function contains:

#### Security

Specifies the interaction of the function with an external security product:

#### Parallel

Specifies if DB2 can consider parallelism for the function:



## Create Function: Option List (1/2) panel

### Run-time options

Specifies the Language Environment<sup>®</sup> run-time options to be used for the function.

### Parent panels

- “Create Function panel” on page 457

### Child panels

None.

### Related tasks

- “Creating a function” on page 188

## Create Function: Option List (2/2) panel

You use the Create Function: Option List (2/2) panel to further specify information to define options for the function to be created.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Function Option List (2/2)			
Enter '/' to select option			
- Main Program - Stay Resident / Deterministic - Called on null input - No external action - Final Call - DBINFO argument passed			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

You can select the following options by entering a “/”:

#### Main Program

The program runs as a main routine, otherwise it runs as a subroutine.

**Stay Resident** The function load module remains in memory when the function ends.

**Deterministic** The function always returns the same result for the same set of input values.

#### Called on Null Input

The function is called even if one or more of the input parameters has a null value.

#### No external action

The function does not take any action that changes the state of an object DB2 does not manage.

**Final Call** A final call is made to the function to allow it to perform any required cleanup operations.

#### DBINFO Argument Passed

Additional DB2 information is passed when the function is called.

### Parent panels

- “Create Function panel” on page 457

### Child panels

None.

## Related tasks

- “Creating a function” on page 188

## Create Function panel

You use the Create Function panel to create a new function.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Function			
Function:			
Schema . . . . .			+ (optional)
Name . . . . .	FUN1		
Unique Name . . . .			+ (optional)
Function Creation:			
Creation Options			
5	1. Parameters		(optional, usually required)
	2. Parameter Types		(optional, define parameters first)
	3. Returned data type		(required)
	4. Option List		(required)
	5. Option List (More)		(optional)
	6. Create the Function		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Schema** The schema name in which to create the function.

**Name** The name of the user-defined function.

**Unique Name** Specifies a unique name for the function that is used by certain SQL statements and DB2 commands.

#### Creation Options

Specify the number of the creation option you want to use:

**1. Parameters** Displays the Create Function Parameters panel for defining parameters for the function.

#### 2. Parameter Types

Displays the Create Function Parameter Types panel for specifying additional type information for the function parameters.

#### 3. Returned data type

Displays the Create Function: Returned Data Type panel for specifying the data type returned by the function.

**4. Option List** Displays the Create Function Option List (1/2) panel for specifying various options for further defining the function.

#### 5. Option List (More)

Displays the Create Function Option List (2/2) panel for specifying additional options for the function.

#### 6. Create the Function

When you have finished specifying parameter, data type, and option information as required, select this creation option to create the function.

## Create Function panel

### Parent panels

- “DB2 Object Functions panel” on page 550
- “Functions panel” on page 632

### Child panels

To display this panel...	Use/do this
“Create Function: Parameters panel” on page 460	Creation option 1
“Create Function: Parameter Types panel” on page 459	Creation option 2
“Create Function: Returned Data Type panel” on page 462	Creation option 3
“Create Function: Option List (1/2) panel” on page 453	Creation option 4
“Create Function: Option List (2/2) panel” on page 455	Creation option 5

### Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating a function” on page 188

## Create Function: Parameter Types panel

You use the Create Function: Parameter Types panel to specify additional type information for the function parameters.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Function: Parameter TypesRow 1 to 1 of 1

As  
LOC

<-----Like Table/View----->

Parameter Name + Data Type(Length) + (Y/N)Owner + Name +

PAR1CHAR(3)

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

Scroll PAGE

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

- Parameter Name

As defined using option 1.
- Data Type (Length)

As defined using option 1.
- As LOC (Y/N)

For LOB data types, specifies whether a locator for the parameter is passed instead of the value itself:  
YLocator passed  
NValue passed
- Owner

Defines the parameter as a locator to a transition table.
- Like Table/View Name

The owner and name specify a table or view with columns that match those of the transition table.

### Parent panels

- “Create Function panel” on page 457

### Child panels

None.

### Related tasks

- “Creating a function” on page 188

## Create Function: Parameters panel

You use the Create Function: Parameters panel to define parameters for the function.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Function Parameters Row 1 to 1 of 1			
<---(For Built in Data Types)----->			
C			<DEC>
M			<FL> For User Defined
D	Parameter Name	+ Data Type	+ Len Pr Sc Data Data Type
	NAME	CHAR	20
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F8=Forward

**Cmd** This field is used for entering commands.

**Parameter Name** As defined using option 1.

**Data Type** This field is used for entering the data type for the column being defined.

**Len** This field is (optionally) used for entering the length, and optionally the scale of the column. The numeric fields such as INTEGER, REAL, no length specification is required. For character fields, only a single length specification is required. For decimal fields, you can specify a length and a scale.

**DEC** For a decimal number. The first integer is the precision number. That is, the total number of digits which can range from 1 to 31. The second integer is the scale of the number. That is the number of digits to the right of the decimal point, which can range from 0 to the precision of the number.

**FL** For a floating-point number. If integer is between 1 and 21 inclusive, the format is single precision floating-point. If the integer is between 22 and 53 inclusive, the format is double precision floating-point.

**Pr Sc** The scale is the total number of digits in the fractional part of the number and the precision is the total number of digits in the number.

**For Data** The definitions for character and character large object (CLOB) allow the specification of an optional 'FOR DATA' clause. This field is used to specify the appropriate value.

**User Defined Data Type**

Specifies the data type of the column is a distinct type (a user defined-data type). The length, precision and scale of the column are respectively the length, precision and scale of the source type of the distinct type. The privilege set must implicitly or explicitly include the USAGE privilege on the distinct type.

**Parent panels**

- “Create Function panel” on page 457

**Child panels**

None.

**Related tasks**

- “Creating a function” on page 188



## Create Function: Returned Data Type panel

You use the Create Function: Returned Data Type panel to specify the data type returned by the function.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		Create Function: Returned Data Type					
Returns:							
Schema	.....	_____		+ (optional, for user-defined types)			
Data Type	.....	_____		+ (optional)			
Length/Precision	.....	_____		(optional)			
Scale	.....	_____		(optional)			
For Data		Encoding Method					
- 1. SBCS		- 1. EBCDIC					
- 2. Mixed		- 2. ASCII					
- 3. Bit		- 3. UNICODE					
Cast From:							
Data Type	.....	_____		+ (optional)			
Length/Precision	.....	_____		(optional)			
Scale	.....	_____		(optional)			
For Data		Encoding Method					
- 1. SBCS		- 1. EBCDIC					
- 2. Mixed		- 2. ASCII					
- 3. Bit		- 3. UNICODE					
As Locator:							
Enter "/" to select option							
Return a locator to the value (LOB data type only)							
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward		
F9=Swap	F10=Left	F11=Right	F12=Cancel				

**Schema** Specifies the schema name that qualifies a user-defined data type.

#### Data Type (Returns)

Specifies the data type returned by the function.

#### Length/Precision (Returns)

Specifies the length for built-in data types. For the decimal data type this is the precision.

#### Scale (Returns)

For the DECIMAL data type only.

#### For Data (Returns)

- |                |                               |
|----------------|-------------------------------|
| <b>1.SBCS</b>  | Only for built in data types. |
| <b>2.Mixed</b> | Only for built in data types. |
| <b>3.Bit</b>   | Only for built in data types. |

#### Encoding Method (Returns)

Only for built-in data types. Specifies the actual data type returned by the function. See note below.

#### Data Type (Cast From)

Specifies the data type returned by the function.

#### Length/Precision (Cast From)

Specifies the length for built-in data types. For the decimal data type this is the precision.

**Scale** (Cast From)

For the DECIMAL data type only.

**For Data** (Cast From)

- |                |                               |
|----------------|-------------------------------|
| <b>1.SBCS</b>  | Only for built in data types. |
| <b>2.Mixed</b> | Only for built in data types. |
| <b>3.Bit</b>   | Only for built in data types. |

**Encoding Method** (Cast From)

See note below.

**As Locator**

For LOB data types, specifies that a locator for the parameter is returned instead of the value itself.

**Note:** If “Cast From” is not specified, then the “Returns” **Encoding Method** defines the data type returned by the function to the invoking statement. If “Cast From” is specified, then the “Cast From” **Encoding Method** is the data type returned by the function and the “Returns” **Encoding Method** is the data type passed to the invoking statement by DB2 (having “cast” it from the “Cast From” data type).

### Parent panels

- “Create Function panel” on page 457

### Child panels

None.

### Related tasks

- “Creating a function” on page 188

## Create Index panel

You use the Create Index panel to create an index for a pre-existing base table.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Index			
New Index:			
Owner . . . . .	_____	+	(optional)
Name . . . . .	_____	+	
Table Owner . . . .	_____	+	(optional)
Table Name . . . .	_____	+	
Buffer Pool . . . .	_____		(optional, BP0-BP49)
Index Creation:			
Creation Options			
2	1. Index type		(optional)
	2. Index columns		(required, except on auxiliary tables)
	3. Allocation		(optional, usually needed)
	4. Index options		(optional)
	5. Partitions		(partitioned indexes only)
	6. Partition values		(required for partitioned indexes)
	7. Create the index		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Owner** The owner of the index.

**Name** The name of the index. This is a required field.

**Table Owner** The SQLID used to create the table on which the index is being defined.

**Table Name** The name of the table on which the index is being created. This is a required field. You can enter the name of the table on which the index is created. A validation check needs to be performed to verify that the table exists.

**Buffer Pool** The name of the buffer pool in which the index data sets are created.

#### Creation Options

Specify the number of the creation option you want to use:

**1. Index type** To specify information to define the type of index to be created. Displays the Create Index: Type panel.

**2. Index columns** To select the columns that comprise the index. Displays the Create Index: Column Selection panel.

**3. Allocation** To specify the space requirements for the index being created. displays the Create Index: Allocation panel.

**4. Index options** To specify information to define options for the index to be created. Displays the Create Index: Options panel.

**5. Partitions** To specify space information for index partitions. displays the Create Index: Partitions panel.

**6. Partition values** To specify limit values for index entries in each partition. displays the Create Index: Partition Values panel.

**7. Create the index** When you have finished specifying details for the index to be created, select this creation option to create the index.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Tables, Views and Aliases panel” on page 776
- “Indexes panel” on page 645
- “Explain Utilities panel” on page 600

## Child panels

To display this panel...	Use/do this
“Create Index: Type panel” on page 474	Creation option 1
“Create Index: Column Selection panel” on page 467	Creation option 2
“Create Index: Allocation panel” on page 466	Creation option 3
“Create Index: Options panel” on page 469	Creation option 4
“Create Index: Partitions panel” on page 471	Creation option 5
“Create Index: Partition Values panel” on page 473	Creation option 6

## Related tasks

- “Creating an index” on page 186

### Create Index: Allocation panel

You use the Create Index: Allocation panel to specify the space requirements for the index being created.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2) Create Index: Allocation					
Data Set Parameters:					
VCAT name . . . . . (for user-defined data sets only)					
Storage group name +					
Space Requirements for Storage Group:					
Primary space . . 20 (in kilobytes)					
Secondary space . 10 (in kilobytes)					
Free Space Options:					
Free pages . . . . . (0-255, default 0)					
Free space . . . . . (0-99 percent, default 10)					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

**VCAT name** User-defined data sets.

**Storage group name**  
DB2-defined data sets (STOGROUP name)

**Primary space** Specifies the minimum primary space allocation for a managed DB2 data set.

**Secondary space**  
Specifies the minimum secondary space allocation for a managed DB2 data set.

**Free pages** Valid values are 0-255. For a detailed description, see *DB2 UDB for z/OS SQL Reference*.

**Free space** Valid values are 0-99. For a detailed description, see *File Manager User's Guide and Reference for IMS Data*.

#### Parent panels

- "Create Index panel" on page 464

#### Child panels

None.

#### Related tasks

- "Creating an index" on page 186

## Create Index: Column Selection panel

You use the Create Index: Column Selection panel to select the columns that comprise the index.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Index: Column SelectionRow 1 to 1 of 1

New Index:

Owner . . . . .

Name . . . . . IND1

Table owner . . . .

Table name . . . . TABLE1

SelOrd(A/D)Column NameDatatype(length)+ Null Attr.

COL1CHAR(3)

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

- Owner

The name of the owner of the new index.
- Name

The name of the new index.
- Table owner

The SQLID used to create the table on which the index is being defined.
- Table name

The table on which the index is created.

The bottom half of the panel shows a table that can be scrolled in the usual ISPF manner.

- Sel

An input selection field. This is where you identify the columns that make up the index. You can enter S to select or deselect any column. You can also type a number against a column, to indicate the ordering of the columns in the index.
- Order

A display-only field. Possible values are spaces, indicating this column is not part of the index; or a number, indicating that this column has been selected as part of the index, and its order among the selected columns.
- (A/D)

Indicates how the values in the column are to be indexed. If Sel is blank, but A/D is not blank, it is as if Sel contains "S". The available options are:

A

Ascending. This is the default. If you do not specify a value, this field is filled with an "A" when the panel is redisplayed.

D

Descending

## Create Index: Column Selection panel

### Column Name

The name of the column.

### Data Type(length)

The DB2 data type of the column.

### Null Attribute

Shows whether column allows null values.

## Parent panels

- “Create Index panel” on page 464

## Child panels

None.

## Related tasks

- “Creating an index” on page 186

## Create Index: Options panel

You use the Create Index: Options panel to specify information to define options for the index to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Index Options	
Data Storage Options:			
Enter '/' to select option			
/ Close when not in use			
- Erase data on delete			
- Defer building index			
7 Define data set now			
- Allow COPY of index			
Group Buffer Pool Usage:			
Write to the group buffer pool			
1. Changed			
- 2. All			
3. None			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

You can use the first group of input fields to select the appropriate option with the '/' selection character. The following section describes the options:

#### Close when not in use

This corresponds to the CLOSE YES/NO clause. It relates to how DB2 handles open data sets when the limit for the maximum number of open data sets is reached.

#### Erase data on delete

This corresponds to the ERASE YES/NO clause in the 'USING' block. ERASE YES means that the data sets associated with the partition are overwritten with binary zeros when the partition is deleted (dropped).

#### Defer building index

This corresponds to the DEFER YES/NO clause. The default value is DEFER NO, meaning that the index is built when the CREATE INDEX statement is executed.

#### Define data set now

This corresponds to the DEFINE YES/NO clause. The default value is DEFINE YES, meaning that the data sets used for the index are created when the CREATE INDEX statement is executed.

#### Allow COPY of index

This corresponds to the COPY YES/NO clause. The default value is COPY NO, meaning that it is not possible to use the COPY utility against the index.



## Create Index: Options panel

The second input field on the panel contains three options relating to the use of the grouped buffer pool. You can select the required option by typing the appropriate number. This corresponds to the GBPCACHE clause in the create statement syntax.

### Parent panels

- “Create Index panel” on page 464

### Child panels

None.

### Related tasks

- “Creating an index” on page 186

Create Index: Partitions panel

You use the Create Index: Partitions panel to specify space information for index partitions.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Index: PartitionsRow 1 to 1 of 1

New Index:

Owner . . . . .+

Name . . . . .IND1+

Table owner . . . . .+

Table name . . . . .TABLE1+

Parttn.	VCAT	STOGROUP	Primary	Secndry	Erase	Free	%	Grp	BP
Cmd Number	Name	Name +	Space	Space	Data?	Pages	Free	Caching	
1									

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

- Owner

The name of the owner of the new index.
- Table owner

The SQLID used to create the table on which the index is being defined.
- Name

The name of the new index.
- Table name

The table on which the index is created.
- Cmd

An input selection field. When the panel is first displayed, the table contains 1 row, with default values entered. To define additional partitions type 'I' in the selection field and press Enter. You can also type 'R' to repeat the current definition. Other valid selection commands are i and r followed by an integer.
- Parttn. Number

A sequential number showing the number of partitions defined. This is a display only field.
- VCAT Name

The VCAT name used to define user-specified data sets. This is an input field. It is mutually exclusive with the STOGROUP parameter.
- STOGROUP name

The DB2 storage group name in which the index data set is defined. This is an input field. It is mutually exclusive with the VCAT parameter.
- Primary Space

The primary space allocation for the partition, entered in kilobytes.

## Create Index: Partitions panel

### Secndry Space

The secondary space allocation for the partition, entered in kilobytes.

**Erase Data?** A YES/NO value corresponding to the ERASE YES/NO clause.

**Free Pages** Free pages results in DB2 leaving an empty page every  $n$  pages ( $n$  is what is specified).

**% Free** The value specified here results in DB2 leaving  $n\%$  ( $n$  is what is specified) of each page free.

### Grp BP Caching

This corresponds to the GBPCACHE clause of the create statement (for each partition). These options only apply in a data sharing environment.

## Parent panels

- "Create Index panel" on page 464

## Child panels

None.

## Related tasks

- "Creating an index" on page 186

## Create Index: Partition Values panel

You use the Create Index: Partition Values panel to specify limit values for index entries in each partition.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Create Index: Partition Values	Row 1 to 6 of 6	
New Index:			
Owner . . . . .			+
Name . . . . .	FRED		+
Table owner . . . .	FMUSER		+
Table name . . . .	EMP		+
Parttn.			
Number	Column Name	Value	+
1	EMPNO		
	FIRSTNME		
	MIDINIT		
2	EMPNO		
	FIRSTNME		
	MIDINIT		
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F8=Forward

<b>Owner</b>	The name of the owner of the new index.
<b>Name</b>	The name of the new index.
<b>Table owner</b>	The SQLID used to create the table on which the index is being defined.
<b>Table name</b>	The table on which the index is created.
<b>Parttn. Number</b>	A sequential number showing the number of partitions defined. This is a display-only field.
<b>Column Name</b>	The name of the column.
<b>Value</b>	The smallest unit of data that is manipulated in SQL.

### Parent panels

- "Create Index panel" on page 464

### Child panels

None.

### Related tasks

- "Creating an index" on page 186

## Create Index: Type panel

You use the Create Index: Type panel to specify information to define the type of index to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Index Type	
Index Type Options:			
Uniqueness			
1 1. Non-Unique			
2 2. Unique			
3 3. Unique Not Null			
Clustering Index Option:			
Enter '/' to select option			
/ Clustering Index (required for partitioned indexes)			
Non-Partitioned Index:			
Piecesize . . . .	_____	Multiplier	
		1. K (1024)	
		2. M (1048576)	
		3. G (1073741824)	
(Specify the partitions for a partitioned index using Create Index option 5)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

#### 1. Non-Unique

Duplicate index values are permitted.

#### 2. Unique

Distinct values for all entries in the index.

#### 3. Unique Not Null

Distinct values for all not null entries in the index.

#### Clustering Index Option

Enter a "/" to specify a clustering index (CLUSTER keyword).

#### Piecesize

You can specify a maximum addressability for each piece (data set of a non-partitioning index). The values entered must be powers of 2, and the valid values depend on the multiplier.

- If the multiplier is K, valid values are 2\*\*n between 256 and 67 108 864 inclusive.
- If the multiplier is M, valid values are 2\*\*n between 1 and 66 536 inclusive.
- If the multiplier is G, valid values are 2\*\*n between 1 and 64 inclusive.

### Parent panels

- "Create Index panel" on page 464

### Child panels

None.

## Related tasks

- “Creating an index” on page 186

## Create Procedure panel

You use the Create Procedure panel to create a new procedure.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Procedure	
Stored Procedure:			
Schema . . .	_____ + (optional)		
Name . . .	_____ +		
Result Sets .	_____ (optional)		
Stored Procedure Creation:			
Creation Options			
- 1. Parameters (optional, usually required)			
2. Parameter Types (optional, define parameters first)			
3. Option List (required)			
4. Option List (More) (optional)			
5. Create the Procedure			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

**Schema** The name of the schema in which the procedure is defined.

**Name** The name of the stored procedure.

**Result Sets** Specifies the maximum number of dynamic result sets that can be returned by the stored procedure.

#### Creation Options

Specify the number of the creation option you want to use:

**1. Parameters** To specify information to define the parameters for a procedure to be created. Displays the Create Procedure: Parameters panel.

**2. Parameter Types** To specify information to define the parameter types in relation to tables or views, and to specify the parameter type. Displays the Create Procedure: Parameter Types panel.

**3. Option List** To specify information to define options for the procedure to be created. Displays the Create Procedure: Option List (1/2) panel.

**4. Option List (More)** To further specify information to define options for the procedure to be created. Displays the Create Procedure: Option List (2/2) panel.

**5. Create the Procedure** When you have finished specifying details for the stored procedure to be created, select this creation option to create the stored procedure.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Stored Procedures panel” on page 754

## Child panels

To display this panel...	Use/do this
“Create Procedure: Parameters panel” on page 483	Creation option 1
“Create Procedure: Parameter Types panel” on page 481	Creation option 2
“Create Procedure: Option List (1/2) panel” on page 478	Creation option 3
“Create Procedure: Option List (2/2) panel” on page 480	Creation option 4

## Related tasks



## Create Procedure: Option List (1/2) panel

You use the Create Procedure: Option List (1/2) panel to specify information to define options for the procedure to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2) Create Procedure Option List (1/2)			
External Name . . . . .		+ (optional)	
Package Collection . . . . .		+ (optional)	
Workload Manager Environment		+ (optional)	
Time Limit (CPU units) . . . . .		(CPU units - optional)	
LANGUAGE (Required) SQL Security			
1. ASSEMBLE		1. Reads SQL Data	1. DB2
2. C		2. No SQL	2. User
3. COBOL		3. Modifies SQL Data	3. Definer
4. PL/I		4. Contains SQL	
Parameter Style			
1. DB2SQL			
2. General			
3. General with nulls			
Run-time Options (optional)			
Command ==> +			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

#### External Name

Name of the MVS load module that contains the user-written code to implement the procedure.

#### Package Collection

Specifies the package collection to be used when the procedure is run. If not specified, the invoking program's package collection is used.

#### Workload Manager Environment

Specifies the MVS workload manager environment in which the procedure is to run.

#### Time Limit (CPU units)

Limit on processor service units used by a single invocation of the procedure.

#### Language

Application programming language of the procedure.

#### SQL

Specifies what type of SQL statements the procedure contains.

#### Security

Specifies the interaction of the procedure with an external security product.

#### Parameter Style

##### 1. DB2SQL

Additional parameters containing DB2 information are passed to the procedure.

### 2. General

Only the parameters on the call statement are passed to the procedure and they cannot be null.

### 3. General with nulls

A vector of null indicators is passed in addition to the parameters on the call statement.

## Parent panels

- “Create Procedure panel” on page 476

## Child panels

None.

## Related tasks

- “Creating a procedure” on page 189

### Create Procedure: Option List (2/2) panel

You use the Create Procedure: Option List (2/2) panel to further specify information to define options for the procedure to be created.

#### Panel and field definitions

Process Options Utilities Help

FM/DB2 (DFA2) Create Procedure Option List (2/2)

Enter '/' to select option

- Main Program
- Stay Resident
- Deterministic
- DBINFO argument passed
- Commit on return

Command ==>

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

#### Main Program

If checked, the program runs as a main routine, otherwise it runs as a subroutine.

**Stay Resident** If checked, the function load module remains in memory when the function ends.

**Deterministic** If checked, indicates the function always returns the same result for the same set of input values.

#### DBINFO argument passed

If checked, indicates that additional DB2 information is passed when the function is called.

#### Commit on return

If checked, indicates that DB2 issues a commit when the stored procedure returns.

#### Parent panels

- "Create Procedure panel" on page 476

#### Child panels

None.

#### Related tasks

- "Creating a procedure" on page 189

## Create Procedure: Parameter Types panel

You use the Create Procedure: Parameter Types panel to specify information to define the parameter types in relation to tables or views, and to specify the parameter type.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		Create Procedure: Parameter Types				Row 1 to 1 of 1	
Parameter Name	Data Type(Length)	As LOC	<-----Like Table/View----->	Owner	Name	IN OUT	
PARAM1	CHAR(3)					INOUT	
***** Bottom of data *****							
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	Scroll PAGE		
F9=Swap	F10=Left	F11=Right	F12=Cancel				

#### Parameter Name

The name of the parameter.

#### Data Type(Length)

The data type of the parameter.

**As LOC (Y/N)** For LOB data types, specifies that a locator for the parameter is passed instead of the value itself.

#### Owner

Defines the parameter as a locator to a transition table.

#### Like Table/View Name

The owner and name specify a table or view with columns that match those of the transition table.

#### IN OUT INOUT

Specifies whether the parameter can be used for input only, output only, or both input and output. Valid values are:

<b>IN</b>	Identifies the parameter as an input parameter.
<b>OUT</b>	Identifies the parameter as an output parameter.
<b>INOUT</b>	Identifies the parameter as both an input and output parameter.

### Parent panels

- "Create Procedure panel" on page 476

## Create Procedure: Parameter Types panel

### Child panels

None.

### Related tasks

- “Creating a procedure” on page 189

## Create Procedure: Parameters panel

You use the Create Procedure: Parameters panel to specify information to define the parameters for a procedure to be created.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Create Procedure: Parameters		Row 1 to 1 of 1
<---(For Built in Data Types)----->			
<DEC>			
<FL> For User Defined			
Cmd	Parameter Name	+ Data Type	Len Pr Sc Data Data Type +
	PARAM1	CHAR	3
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand F7=Backward F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Cmd** This field is used for entering commands.

#### Parameter Name

As defined using option 1.

**Data Type** This field is used for entering the data type for the column being defined.

**Len** This field is (optionally) used for entering the length, and optionally the scale of the column. The numeric fields such as INTEGER, REAL, no length specification is required. For character fields, only a single length specification is required. For decimal fields, you can specify a length and a scale.

**Dec** For a decimal number. The first integer is the precision number. That is, the total number of digits which can range from 1 to 31. The second integer is the scale of the number. That is the number of digits to the right of the decimal point, which can range from 0 to the precision of the number.

**FL** For a floating-point number. If integer is between 1 and 21 inclusive, the format is single precision floating-point. If the integer is between 22 and 53 inclusive, the format is double precision floating-point.

**Pr Sc** The scale is the total number of digits in the fractional part of the number and the precision is the total number of digits in the number.

**For Data** The definitions for character and character large object (CLOB)

## Create Procedure: Parameters panel

allow the specification of an optional 'FOR DATA' clause. This field is used to specify the appropriate value.

### User Defined Data Type

Specifies the data type of the column is a distinct type (a user defined-data type). The length, precision and scale of the column are respectively the length, precision and scale of the source type of the distinct type. The privilege set must implicitly or explicitly include the USAGE privilege on the distinct type.

## Parent panels

- “Create Procedure panel” on page 476

## Child panels

None.

## Related tasks

- “Creating a procedure” on page 189

## Create Synonym panel

You use the Create Synonym panel to create a new synonym.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Synonym	
Synonym Details:			
Name . . . . .	DBNAME		+
Table or View Details:			
Owner . . . . .			+
Name . . . . .	TABLE1		+
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

#### Name (Synonym Details)

The name of the synonym that is being created.

#### Owner

The owner of the table.

#### Name (Table or View Details)

The name of the table.

### Parent panels

- “DB2 Object Functions panel” on page 550
- “Synonyms panel” on page 756

### Child panels

None.

### Related tasks

- “Creating a synonym” on page 187



## Create Table panel

You use the Create Table panel to create a new table.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Table	
New Table:			
Owner . . . . .	_____	+ (optional)	
Name . . . . .	TABLE1	+	
Database . . . . .	_____	(optional)	
Table Space . . . . .	_____	(optional)	
Model Table/View: (optional)			
Owner . . . . .	_____	+	
Name . . . . .	_____	+	
Usage:			
1	1. Generate LIKE clause		
2	2. Load table information		
Table Creation:			
Creation Options	(Use option 1 before options 2, 4-9)		
1 1. Columns	(normally required, invalid with model LIKE)		
2. Nulls/default values	(optional)		
3. Table options	(editproc,validproc,more; optional)		
4. Unique Constraints	(primary/unique keys; optional)		
5. Referential Constraints	(foreign keys; optional)		
6. Check constraints	(optional)		
7. Procedure exits	(optional)		
8. Generate values	(optional)		
9. Create the table			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

#### Owner (New Table)

The name of the owner of the new table.

#### Name (New Table)

The name of the new table.

**Database** The name of the database in which the new table is to be created.

**Table Space** The name of the table space in which the new table is to be created.

#### Owner (Model Table/View)

The name of the owner of the model table.

#### Name (Model Table/View)

The name of the model table.

#### Creation Options

Specify the number of the creation option you want to use:

**1. Columns** To specify information to define the columns for a table to be created. Displays the Create Table: Columns panel.

**2. Nulls/default values** To specify information to define the null attributes

and default values for the columns of the table. Displays the Create Table: Nulls and Default Values panel.

### 3. Table options

To specify information to define options for the table you are creating. Displays the Create Table: Options panel.

### 4. Unique Constraints

To specify information to define a primary key and up to three additional unique keys for the table you are creating. Displays the Create Table: Unique Constraints panel.

### 5. Referential Constraints

To specify information to define one or more column referential constraints for the table. Displays the Create Table: Column Referential Constraints panel.

### 6. Check Constraints

To specify information to define column check constraints for the table. Displays either the Create Table: Column Check Constraints panel or the Create Table: Table Check Constraints panel.

### 7. Procedure exits

To specify information to define procedure exits for the table you are creating. Displays the Create Table: Procedure Exits panel.

### 8. Generate values

To specify information to define generated values for identity or ROWID columns in the table. Displays the Create Table: Generate Values panel.

### 9. Create the table

When you have finished specifying details for the table to be created, select this creation option to create the table.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Table Spaces panel” on page 768
- “Tables, Views and Aliases panel” on page 776

## Child panels

To display this panel...	Use/do this
“Create Table: Columns panel” on page 505	Creation option 1
“Create Table: Nulls and Default Values panel” on page 511	Creation option 2
“Create Table: Options panel” on page 514	Creation option 3
“Create Table: Unique Constraints panel” on page 523	Creation option 4
“Create Table: Column Referential Constraints panel” on page 503	Creation option 5 <sup>1</sup>

## Create Table panel

To display this panel...	Use/do this
"Create Table: Column Check Constraints panel" on page 501	Creation option 6
"Create Table: Procedure Exits panel" on page 516	Creation option 7
"Create Table: Generate Values panel" on page 507	Creation option 8
"Create Table: Model Load panel" on page 509	See note below <sup>2</sup>
"Create Table: Columns panel" on page 505	See note below <sup>1</sup>

### Notes:

1. When you select Table Creation option 5 (**Referential Constraints**) on the main Create Table panel, FM/DB2 displays either the Column Referential Constraints panel ("Create Table: Column Referential Constraints panel" on page 503) or the Table Referential Constraints panel ("Create Table: Table Referential Constraint panel" on page 519). To change from one panel to the other, press the F5 function key.
2. The Create Table Model Load panel is displayed when you:
  - Initially specify, or subsequently change, the **Model Table/View** details,
  - Select Usage option 2 (**Load table information**), and
  - Press Enter.

## Related tasks

- "Creating a table" on page 178

## Create Table Space panel

You use the Create Table Space panel to create a new table space.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Table Space	
Table Space Definition:			
Name . . . . .	_____	(required)	
Database . . . . .	_____	(optional)	
Buffer pool . . . . .	_____	(optional: BPn,BP8Kn,BP16Kn,BP32Kn)	
Table Space Creation:			
Creation Options			
<u>1</u>	1. Table space type	(optional, usually needed)	
	2. Table space allocation	(optional, usually needed)	
	3. Data storage options	(optional)	
	4. Locking options	(optional)	
	5. Data sharing options	(optional)	
	6. Partitions	(partitioned table spaces only)	
	7. Create the table space		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

**Name** The name of the table space you want to create.

**Database** The name of the database in which the table space is to be created.

**Buffer pool** The name of the buffer pool to be used for the table space.

#### Creation Options

Specify the number of the creation option you want to use:

##### 1. Table space type

To specify information to define the type of table space to be created. Displays the Create Table Space: Type panel.

##### 2. Table space allocation

To specify information to define the data set and space allocation for the table space to be created. Displays the Create Table Space: Allocation panel.

##### 3. Data storage options

To specify information to define data storage options for the table space to be created. Displays the Create Table Space: Data Storage Options panel.

##### 4. Locking options

To specify information to define the locking options for the table space to be created. Displays the Create Table Space: Locking Options panel.

##### 5. Data sharing options

To specify information to define the data sharing

## Create Table Space panel

options for the table space to be created. Displays the Create Table Space: Data Sharing Options panel.

- 6. Partitions** To specify information to define the partitions for a partitioned table space to be created. Displays the Create Table Space: Define Partitions panel.

**7. Create the table space**

When you have finished specifying details for the table space to be created, select this creation option to create the table space.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Databases panel” on page 538
- “Table Spaces panel” on page 768

## Child panels

To display this panel...	Use/do this
“Create Table Space: Type panel” on page 499	Creation option 1
“Create Table Space: Allocation panel” on page 491	Creation option 2
“Create Table Space: Data Storage Options panel” on page 494	Creation option 3
“Create Table Space: Locking Options panel” on page 498	Creation option 4
“Create Table Space: Data Sharing Options panel” on page 492	Creation option 5
“Create Table Space: Define Partitions panel” on page 496	Creation option 6

## Related tasks

- Chapter 5, “Creating and dropping DB2 objects,” on page 165
- “Creating a table space” on page 176

## Create Table Space: Allocation panel

You use the Create Table Space: Allocation panel to specify information to define the data set and space allocation for the table space to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2) Create Table Space: Allocation			
Dataset Parameters:			
VCAT name . . . . .		(for user defined data sets only)	
Storage group name . .		+ (only if VCAT name omitted)	
Space Requirements (Only if Storage Group Name specified):			
Primary space . . .		KB	
Secondary space . .		KB	
Free Space and Rows per Data Page:			
Free pages . . . . .		(0,255 inclusive, default value is 0)	
Free space . . . . .		(0-99 inclusive, default value is 5)	
Maximum rows per page		(1-255 inclusive, default value is 255)	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
F7=Backward		F8=Forward	

**VCAT name** Specifies the first data set for the table space is managed by the user.

**Storage group name** Specifies DB2 defines and manages the data sets for the table space.

**Primary space** Specifies the minimum primary space allocation for a DB2 managed data set.

**Secondary space** Specifies the minimum secondary space allocation for a DB2 managed data set.

**Free pages** Specifies how often to leave a page of free space when the table space or partition is loaded or reorganized.

**Free space** The total amount of unused space in a page.

**Maximum rows per page** Specifies the maximum number of rows that DB2 considers placing on each data page.

### Parent panels

- “Create Table Space panel” on page 489

### Child panels

None.

### Related tasks

- “Creating a table space” on page 176

### Create Table Space: Data Sharing Options panel

You use the Create Table Space: Data Sharing Options panel to specify information to define the data sharing options for the table space to be created.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2) Create Table Space: Data Sharing Options					
Selective Partition Locking: Enter '/' to select option _ Use selective partition locking					
Group Buffer Pool Usage: Write to the Group Buffer Pool _ 1. Changed 2. All 3. System 4. None					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F7=Backward	F8=Forward
F9=Swap	F10=Actions	F12=Cancel			

You can select the following option by entering a “/” in the selection field at the top of the panel:

#### Selective Partition Locking

See *DB2 UDB for z/OS SQL Reference* for a detailed explanation of selective partition locking, and the software prerequisites.

#### Group Buffer Pool Usage

- |                   |  |
|-------------------|--|
| <b>1. Changed</b> | When there is inter-DB2 R/W interest on the table space or partition updated pages are written to the group buffer pool. When there is no inter-DB2 R/W interest, the group buffer pool is not used. |
| <b>2. All</b>     | Indicates that pages are to be stored in a cache in the group buffer pool as they are read in from DASD.   |
| <b>3. System</b>  | Indicates that only changed system pages within the LOB table space are to be stored in a cache in the group buffer pool.  |
| <b>4. None</b>    | Indicates that no pages are to be stored in a cache in the group buffer pool.  |

#### Parent panels

- “Create Table Space panel” on page 489

#### Child panels

None.

## Related tasks

- “Creating a table space” on page 176



### Create Table Space: Data Storage Options panel

You use the Create Table Space: Data Storage Options panel to specify information to define data storage options for the table space to be created.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)      Create Table Space: Data Storage Options			
Data Storage Options: Enter '/' to select option Use data compression / Close when not in use / Erase data on delete / Define dataset now / INSERT uses clustering index / Track modified pages / Log changes to LOB columns			
Encoding Method: Data Encoding 1. EBCDIC 2. ASCII			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval
F9=Swap	F10=Actions	F12=Cancel	F7=Backward F8=Forward

#### Use data compression

This corresponds to the COMPRESS YES/NO clause. COMPRESS YES means that DB2 stores the data in compressed format.

#### Close when not in use

This corresponds to the CLOSE YES/NO clause. It relates to how DB2 handles open data sets when the limit for the maximum number of open data sets is reached.

#### Erase data on delete

This corresponds to the ERASE YES/NO clause of the 'USING' block (see *DB2 UDB for z/OS SQL Reference*). ERASE YES means that DB2 data sets are overwritten with binary zeros when they are dropped (deleted).

#### Define dataset now

This corresponds to the DEFINE YES/NO clause. DEFINE YES means that DB2 defines the data sets for the table space when the create statement is executed. DEFINE NO means creation is delayed until data is placed in the table space.

#### INSERT uses clustering index

This corresponds to the MEMBER CLUSTER clause.

#### Track modified pages

This corresponds to the TRACKMOD YES/NO clause. It relates to a feature where changes to data pages are recorded in the table space map pages. The default setting is TRACKMOD YES. There are restrictions on this clause when LOB is specified.

### Log changes to LOB columns

This corresponds to the LOG YES/NO clause. LOG YES can only be specified for a LOB table space.

### Data encoding

Covers the encoding method option. For OS/390® systems, the default format is EBCDIC .

**EBCDIC**            Specifies the encoding scheme.

**ASCII**             Specifies the encoding scheme.

**UNICODE**        Specifies the encoding scheme.

## Parent panels

- “Create Table Space panel” on page 489

## Child panels

None.

## Related tasks

- “Creating a table space” on page 176

## Create Table Space: Define Partitions panel

You use the Create Table Space: Define Partitions panel to specify information to define the partitions for a partitioned table space to be created.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		Create Table Space: Define Partitions				Row 1 to 1 of 1	
New Table Space:							
Name . . . . .							
Database . . . . .							
Pt.	VCAT	STOGROUP	Primary	Secndry	Erase	Free	%
Cmd No.	Name	Name +	Space	Space	Data	Pages	Free
1							
***** Bottom of data *****							
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	Scroll PAGE		
F9=Swap	F10=Left	F11=Right	F12=Cancel	F8=Forward			

**Cmd** Use the following line commands to manipulate the panel rows containing partition information:

- I** Insert one new row.
- In** Insert *n* new rows.
- R** Repeat the current row.
- Rn** Repeat the current row *n* times.
- D** Delete one row.
- Dn** Delete *n* rows.

**Pt. No.** Partition number

**VCAT Name** This is used to specify user-defined data sets. It is mutually exclusive with a STOGROUP name.

#### STOGROUP Name

This is used to specify a (DB2) storage group name. Specifying a storage group name means that DB2 creates the data sets for the partition. It is mutually exclusive with a VCAT name.

#### Primary Space

This is used to specify the primary space allocation for the partition (in kilobytes).

#### Secondary Space

This is used to specify the secondary space allocation for the partition (in kilobytes).

**Erase Data** This corresponds to the ERASE YES/NO clause in the 'USING'

block. ERASE YES means that the data sets associated with the partition are overwritten with binary zeros when the partition is deleted (dropped).

**Free Pages** Free pages results in DB2 leaving an empty page every  $n$  pages ( $n$  is what is specified).

**% Free** The value specified here results in DB2 leaving  $n\%$  ( $n$  is what is specified) of each page free.

**Use Data Cmpr?**

This corresponds to the COMPRESS NO/YES clause. YES means the data is stored in compressed format.

**Group BP Caching**

This corresponds to the GBPCACHE clause of the create statement (for each partition). This option only applies in a data sharing environment.

**TRACK MOD**

Specifies whether DB2 tracks modified pages in the space map pages of the table space or partition. Do not specify TRACKMOD for a LOB table space. For a table space in a TEMP database, DB2 uses TRACKMOD NO regardless of the value specified.

### Parent panels

- “Create Table Space panel” on page 489

### Child panels

None.

### Related tasks

- “Creating a table space” on page 176

### Create Table Space: Locking Options panel

You use the Create Table Space: Locking Options panel to specify information to define the locking options for the table space to be created.

#### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Create Table Space: Locking Options		
Locking Options:			
Locksize parameter			
<ul style="list-style-type: none"> <li>1. ANY DB2 determines the appropriate lock size</li> <li>2. Table space segmented table spaces only</li> <li>3. Table not for LOB table spaces</li> <li>4. Page not for LOB table spaces</li> <li>5. Row only for LOB table spaces</li> <li>6. LOB</li> </ul>			
Application Locking:			
Maximum Locks . . . . _____ (SYSTEM (default) or 0-2147483647)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrie v F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

#### Locksize parameter

Specify the LOCKSIZE parameter:

1. **ANY** Specifies DB2 can use any lock size.
2. **Table space** Specifies DB2 can use table space lock.
3. **Table** Specifies DB2 can use table locks.
4. **Page** Specifies DB2 can use page locks.
5. **Row** Specifies DB2 can use row locks.
6. **LOB** Specifies DB2 can use LOB locks.

#### Maximum Locks

The maximum number of page, row, or LOB locks an application process can hold simultaneously in the table space. Valid values are: 0-2147483647 or "SYSTEM".

#### Parent panels

- "Create Table Space panel" on page 489

#### Child panels

None.

#### Related tasks

- "Creating a table space" on page 176

## Create Table Space: Type panel

You use the Create Table Space: Type panel to specify information to define the type of table space to be created.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Table Space: Type

Table Space Type Option

1

1. Normal

(default)

2

2. Large

(not valid if a partition size is specified)

3

3. LOB

(large object table space)

Select either non-partitioned or partitioned below

Non-Partitioned Table Space:

Segment size . . . . .

KB (4,8,...,64 for segmented table space)

Partitioned Table Space:

No. of partitions . . .

(1-254 for partitioned table space)

Max. partition size . .

GB (blank,1,2,4,8,16,32,64)

Command ==>

F1=Help

F2=Split

F3=Exit

F4=CRetriev

F7=Backward

F8=Forward

F9=Swap

F10=Actions

F12=Cancel

#### Table Space Type Option

Specify the type option:

1. Normal

Identifies the table space is a normal (non-LOB) table space.
2. Large

Identifies that each partition of a partitioned table space has a maximum partition size of 4 GB. This relates to a deprecated SQL option, therefore it is preferable to use Max. Partition Size. If **Large** is specified, then **No. of partitions** must also be specified.
3. LOB (large object)

Identifies the table space as LOB table space. If LOB is specified, neither **Segment size** or **No. of partitions** can be specified.

LOB means Large Object. A LOB table space is used to store data that does not fit within a single table space page. Examples of LOBs might include such things as photographs, video files, or sound files.

**Segment size** Indicates that the table space is separated and specifies how many pages are in each segment. This cannot be specified with Large, LOB or either of the partitioned table space options.

**No. of partitions** Indicates that the table space is partitioned and specifies the

## Create Table Space: Type panel

number of partitions. This is required if Large is specified or if Max. partition size is specified with LOB or segment size.

### Max. partition size

Indicates that the maximum size of each partition or for LOB table spaces, the maximum size of each data set. This requires the specification of LOB or No. of partitions. This cannot be specified with Large or Segment size.

## Parent panels

- “Create Table Space panel” on page 489

## Child panels

None.

## Related tasks

- “Creating a table space” on page 176

## Create Table: Column Check Constraints panel

You use the Create Table: Column Check Constraints panel to specify information to define column check constraints for the table.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Table: Column Check ConstraintsRow 1 to 1 of 1

Owner . . . . .

Name . . . . . TAB1

Database . . . . .

Table Space . . . . .

Sel

Column Name

+ Data Type(Length)

+ Constraint Name

+ Check Condition

+

COL1

CHAR(3)

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F5=Tabcons

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

Scroll PAGE

**Sel** Type S in this field to display a scrollable panel that use to specify a check condition up to the maximum length permitted by DB2. See the description for the **Check Condition** entry field.

**Column Name** The name of the column in the table you are creating.

**Data Type(Length)** The data type and length of the column in the table you are creating.

**Constraint Name** The name of the constraint. This is an optional field.

**Check Condition** SQL expression defining the column check constraint.  
If you need to specify a check condition that is too long to fit in the entry field on the panel, enter S in the **Sel** field to display a panel. If a long check condition already exists and you alter the part of the check condition displayed on the Column Check Constraints panel, FM/DB2 displays the same panel that you can use to confirm the changes you have made.

**Note:** FM/DB2 does not validate the check condition you specify.

### Parent panels

- “Create Table panel” on page 486



## Create Table: Column Check Constraints panel

### Child panels

None.

### Related tasks

- “Creating a table” on page 178

## Create Table: Column Referential Constraints panel

You use the Create Table: Column Referential Constraints panel to specify information to define one or more column referential constraints for the table.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Table: Column Referential Constraints Row 1 to 1 of 1			
Owner . . . . .			+
Name . . . . .	TAB1		+
Database . . . . .			
Table Space . . . . .			
Constrnt <----- Parent Table -----> ON + Name + Owner + Name + Column + DLT			
Column Name			
COL1			
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F8=Forward	F9=Swap	F10=Left	F11=Right
			Scroll PAGE
			F7=Backward
			F5=Tabcons
			F12=Cancel

#### Column Name

The foreign key. This is the column in the table being created that is to be related to an equivalent column (the parent key) in the parent table.

#### Constrnt Name

Optionally use this field to specify the name of the constraint.

#### Owner

Optionally use this field to qualify the name of the parent table.

#### Name

The name of the table containing the parent key. This field is mandatory.

#### Column

The parent key. Specify the name of the column in the parent table to which you want the foreign key (in **Column Name**) related. The parent key must be a primary or unique key on the parent table. If you leave the **Parent Table Column** field blank, the foreign key is related to the primary key of the parent table.

#### ON DLT

Determines the type of ON DELETE clause, if any, that FM/DB2 generates in the CREATE TABLE statement. Valid values are:  
(blank)

	No ON DELETE clause generated
R	ON DELETE RESTRICT
N	ON DELETE NO ACTION
C	ON DELETE CASCADE
S	ON DELETE SET NULL

### Parent panels

- “Create Table panel” on page 486

## Create Table: Column Referential Constraints panel

### Child panels

None.

### Related tasks

- “Creating a table” on page 178

## Create Table: Columns panel

You use the Create Table: Columns panel to specify information to define the columns for a table to be created.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Create Table: Columns	Row 1 to 1 of 1	
Owner . . . . .			+
Name . . . . .	TAB1		+
Database . . . . .			
Table Space . . . . .			
<---(For Built in Data Types)----->			
<DEC>			
<FL> For User-defined			
Cmd	Column Name	+ Data Type	Len Pr Sc Data Data Type
	COL1	CHAR	3
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F7=Backward F8=Forward

**Cmd** Line command area. Use the following line commands to manipulate the panel rows containing column information:

**In** Insert *n* new rows.

**Rn** Repeat the current row *n* times. (See following note.)

**Dn** Delete *n* rows.

**Note:** When you repeat a row, FM/DB2 repeats only the column information shown on this panel and the Nulls and Default Values panel. All other information is cleared.

#### Column Name

The name of the column.

#### Data Type

The data type of the column.

**Len** The length of the column being defined. Only use this field for columns with a string data type.

**Pr, Sc** The precision and scale for numeric data types.

For a decimal number:

- Specify the precision (1–31) in the **Pr** field and the scale (0 to the precision of the number) in the **Sc** field.

For a single-precision floating point number:

- If you have specified a data type of FLOAT, specify the precision (1–21) in the **Pr** field and leave the **Sc** field blank.

## Create Table: Columns panel

- If you have specified a data type of REAL, leave the **Pr** and **Sc** fields blank.

For a double-precision floating point number:

- If you have specified a data type of FLOAT, specify the precision (22–53) in the **Pr** field or leave the **Pr** field blank, and leave the **Sc** field blank.
- If you have specified a data type of DOUBLE, leave the **Pr** and **Sc** fields blank.

For a binary integer, leave the **Pr** and **Sc** fields blank.

### For Data

The subtype to be used in the FOR *subtype* DATA clause. Only specify a non-blank value for character string columns with a data type of CHAR, VARCHAR, LONG VARCHAR, or CLOB. Valid values are:

(Blank)            FOR DATA clause not generated.

**SBCS** (or **S**)    FOR SBCS DATA clause generated.

**MIXED** (or **M**)    FOR MIXED DATA clause generated.

**BIT** (or **B**)        FOR BIT DATA clause generated. Do not specify BIT for a CLOB column.

### User-defined Data Type

Specifies the data type of the column is a distinct type (a user defined-data type). The length, precision and scale of the column (if applicable) are respectively the length, precision and scale of the source type of the distinct type.

## Parent panels

- “Create Table panel” on page 486

## Child panels

None.

## Related tasks

- “Creating a table” on page 178

## Related references

- Chapter 14, “DB2 data types,” on page 367
- “Create Table: Nulls and Default Values panel” on page 511

## Create Table: Generate Values panel

You use the Create Table: Generate Values panel to specify information to define generated values for identity or ROWID columns in the table.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Create Table: Generate Values		Row 1 to 1 of 1
Owner . . . . .			+
Name . . . . .	TAB1		+
Database . . . . .			
Table Space . . . . .			
Column Name	+ Data Type (Length)	Gen (A/D) Idty (Y/N)	As (Y/N) Start value Incr value Caching Option (0=NO CACHE)
COL1	CHAR(3)		
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand F7=Backward F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Column Name

The name of the column in the table you are creating for which you want DB2 to create values.

#### Gen (A/D)

Determines when DB2 generates values for the column. Valid values are:

(blank)

Values not generated for this column.

**A**

Values always generated for this column when a new row is inserted into the table.

**D**

Values generated for this column when a new row is inserted unless a value is specified.

#### As Idty (Y/N)

Identifies whether the column is the identity column for the table (there can be only one).

**N** (or blank)

Column is not an identity column.

**Y**

Column is the identity column for the table.

#### Start value

Starting value for generating identity column values (integer).

#### Incr value

Interval between consecutive generated identity column values (non-zero integer).

#### Caching Option

An integer specifying how many preallocated values of the identity column are kept in memory to improve performance. Valid values:

**0**

Generates a NO CACHE clause.

## Create Table: Generate Values panel

*n* Generates a NO CACHE *n*clause. *n* must be 2 or more.

### Parent panels

- “Create Table panel” on page 486

### Child panels

None.

### Related tasks

- “Creating a table” on page 178

## Create Table: Model Load panel

You use the Create Table: Model Load panel to control what information about a model table is loaded into the ISPF variables and tables used to generate the CREATE TABLE statement. The panel also allows you to specify whether the load is a refresh of the current information, or adds to it.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) Create Table: Model Load			
Press enter to load the selected information for the model table/view, or press PF3 (End) or PF12 (Cancel) to cancel the load.			
Model Table/View:			
Owner . . . .	FMUSER	+	
Name . . . .	MODEL2		+
Model Load Options:			
Enter '/' to load			
/ Basic table information	/ Unique key information	Refresh/Add	
/ Column information	/ Referential constraints	1 1. Refresh	
/ Primary key information	/ Check constraints	2. Add	
Load single-column referential constraints as			
1 1. Column referential constraints			
2. Table referential constraints			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

#### Owner

The name of the owner of the model table.

**Name** The name of the model table.

#### Basic table information

Database name, table space name if explicitly defined for the model table, and all the table options values for the model table or view. (See following Note.)

#### Column information

Column names and data types, and nulls and default values specifications for the model table or view. (See following Note.)

#### Primary key information

Column order in the primary key of the model table.

#### Unique key information

Column order for the first three unique keys in the model table.

#### Referential constraints

Referential constraints for the model table.

#### Check constraints

Check constraints for the model table.



## Create Table: Model Load panel

### 1. (Refresh)

Discard all current CREATE TABLE information, whether manually entered or from a previous load, and load the new selected information for the model table or view.

### 2. (Add)

Add the selected type of information for the model table or view to the current information for the new table.

**Note:** If you select the Add option, you can only select **Basic table information** and **Column information**. FM/DB2 only loads basic table information if the target field is blank.

### Load single-column referential constraints as

If the model table has referential constraints, whether you want single-column referential constraints loaded as *column* referential constraints or *table* referential constraints.

#### 1. Column referential constraints

Single-column referential constraints associated with the foreign key column.

#### 2. Table referential constraints

Single-column referential constraints not associated with the foreign key column. (The associated constraint names are kept regardless of the level of the currently connected DB2 system.)

## Parent panels

- "Create Table panel" on page 486

## Child panels

None.

## Related tasks

- "Creating a table" on page 178

## Create Table: Nulls and Default Values panel

You use the Create Table: Nulls and Default Values panel to specify information to define the null attributes and default values for the columns of the table.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Create Table: Nulls and Default Values	Row 1 to 1 of 1	
Owner . . . . .			+
Name . . . . .	TAB1		+
Database . . . . .			
Table Space . . . . .			
Sel	Column Name	+ Data Type(Length)	+ Nulls Default Value
	COL1	CHAR(3)	
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F8=Forward

#### Owner

The name of the owner of the table.

**Name** The name of the table.

#### Database

The name of the database in which the table is to be created.

#### Table Space

The name of the table space in which the table is to be created.

**Sel** Type S in this field to display a panel that you use to enter a long default value (up to 512 characters) for the column. See the description for the **Default Value** field.

#### Column Name

The name of the column.

#### Data Type (Length)

The data type and, where applicable, the length of the column.

**Nulls** Determines if the field can contain null values, and the default value (if any) to be used for the column when a row is inserted in the table without explicitly specifying a value for the column. Valid values are:

(blank)

Permit nulls and use null as the default value. No NOT NULL or WITH DEFAULT clause is generated in the CREATE TABLE statement.

## Create Table: Nulls and Default Values panel

For non-identity columns, leaving the **Nulls** field blank and specifying DN are equivalent. For identity columns only, a blank value in the **Nulls** field is equivalent to specifying NN.

- |           |  |
|-----------|--|
| <b>NN</b> | Disallow nulls, with no default value. A NOT NULL clause is generated in the CREATE TABLE statement.   |
| <b>ND</b> | Disallow nulls, and use the default value in the <b>Default Value</b> field or the system-defined non-null default value. A NOT NULL WITH DEFAULT clause is generated in the CREATE TABLE statement.         |
| <b>NU</b> | Disallow nulls, and use the value of the user special register at the time of insert or load as the default value. A NOT NULL WITH DEFAULT USER clause is generated in the CREATE TABLE statement.           |
| <b>NS</b> | Disallow nulls, and use the SQL authorization ID of the process at the time of insert or load as the default value. A NOT NULL WITH DEFAULT CURRENT SQLID clause is generated in the CREATE TABLE statement. |
| <b>DN</b> | Permit nulls and use null as the default value. A DEFAULT NULL clause is generated in the CREATE TABLE statement.  |
| <b>DD</b> | Permit nulls, and use the default value in the <b>Default Value</b> field or the system-defined non-null default value. A WITH DEFAULT clause is generated in the CREATE TABLE statement.                    |
| <b>DU</b> | Permit nulls, and use the value of the user special register at the time of insert or load as the default value. A WITH DEFAULT USER clause is generated in the CREATE TABLE statement.                      |
| <b>DS</b> | Permit nulls, and use the SQL authorization ID of the process at the time of insert or load as the default value. A WITH DEFAULT CURRENT SQLID clause is generated in the CREATE TABLE statement.            |

### Default Value

The value that a column contains when a row is inserted. If you specify a constant, you must specify either ND or DD in the **Nulls** field; otherwise, leave this field blank.

If you need to specify a default value that is too long to fit in the field on the panel, enter S in the **Sel** field to display a panel. If a long default value already exists and you alter the part of the value displayed in the **Default Value** field, FM/DB2 displays the same panel that you can use to confirm the changes you have made.

The following points apply to the **Default Value** field:

- In most cases, when you specify a character string as a default value, you do not need to enclose the string in quotation marks. FM/DB2 places quotation marks around unquoted character strings when it generates the SQL.
- You must enclose a character string in quotation marks when the string contains trailing blanks.

Specify "Twenty characters ", as:

'Twenty characters '

- If the string contains quotation marks, represent each quotation mark with two quotation marks.

Specify "It's Diana's house" as:

It''s Diana''s house

Specify "Captain Cook sailed on the 'Endeavour'" as:

Captain Cook sailed on the ''Endeavour''

**Note:** If the string starts and ends with quotation marks, place the entire string within quotation marks and represent each quotation mark contained within the string with two quotation marks.

Specify "Harry's Practice" as:

''Harry''s Practice''

- If the data type of the column is a distinct type, specify the default value only (FM/DB2 generates the required casting function for the distinct type). If the distinct type is based on a string data type, enclose the constant within quotation marks.

### Parent panels

- "Create Table panel" on page 486

### Child panels

None.

### Related tasks

- "Creating a table" on page 178

## Create Table: Options panel

You use the Create Table: Options panel to specify information to define options for the table you are creating.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Create Table: Options	
Processing Options, Internal Identifiers.:			
EDITPROC . . .	<u>DSN8EAE1</u>		(optional)
VALIDPROC . . .	<u>          </u>		(optional)
OBID value . . .	<u>          </u>		(optional)
Audit and Data Storage Options:			
Audit Options		Data Storage Options	
<u>  </u> 1. None (default)		<u>  </u> 1. EBCDIC (default)	
<u>  </u> 2. Changes		<u>  </u> 2. ASCII	
<u>  </u> 3. All		<u>  </u> 3. UNICODE	
Logging and Table Deletion Options:			
Enter '/' to select option			
<u>  </u> Log data capture changes (default is not to log)			
<u>  </u> Restrict drop of table (default is to allow)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

**EDITPROC** If the table you are creating requires an EDITPROC clause, specify the name of the edit procedure here. The default is not to use an EDITPROC clause. An edit procedure transforms data at row level within DB2 before presentation.

**VALIDPROC** If the table you are creating requires a VALIDPROC clause, specify the name of the validation procedure here. The default is not to use a VALIDPROC clause. A validation procedure validates data at row level before it is added.

**OBID value** Use this field, if necessary, to specify the integer for the OBID clause for the table you are creating. DB2 assigns an (internal) object identifier value to each DB2 object. There are circumstances where it is desirable to specify the value for a DB2 object instead of using the DB2-assigned value. An example is where there are two parallel DB2 subsystems, with the same objects defined in each, and where every matching object has the same OBID value.

#### Audit Options

DB2 provides 3 auditing options which determine the type of access to the table that causes auditing to be performed:

- 1. None** No auditing performed. This is the default setting.
- 2. Changes** Auditing performed when changes are made to the table.
- 3. All** Auditing performed when the table is accessed.

**Data Storage Options**

The encoding scheme for string data stored in the table. FM/DB2 uses the selected option when it generates the CCSID clause in the CREATE TABLE statement.

1. **EBCDIC** String data encoded using EBCDIC CCSIDs. This is the default setting.
2. **ASCII** String data encoded using ASCII CCSIDs.
3. **UNICODE** UNICODE string data encoded using UNICODE CCSIDs.

**Log data capture changes**

Whether additional information is logged for INSERT, UPDATE and DELETE operations.

- Slash (/)** FM/DB2 generates a DATA CAPTURE CHANGES clause in the CREATE TABLE statement.
- (blank)** FM/DB2 generates a DATA CAPTURE NONE clause in the CREATE TABLE statement. This is the default setting.

**Restrict drop of table**

Whether the table cannot be dropped. You can use this option to prevent the accidental deletion of tables.

- Slash (/)** FM/DB2 generates a WITH RESTRICT ON DROP in the CREATE TABLE statement.
- (blank)** FM/DB2 allows the table to be dropped. This is the default setting.

**Parent panels**

- “Create Table panel” on page 486

**Child panels**

None.

**Related tasks**

- “Creating a table” on page 178

# Create Table: Procedure Exits panel

You use the Create Table: Procedure Exits panel to specify information to define procedure exits for the table you are creating.

## Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Table: Procedure ExitsRow 1 to 1 of 1

Owner . . . . .

Name . . . . . EMP

Database . . . . .

Table Space . . . . .

Column Name

+ Name

+ Parameters

COL1

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

Scroll PAGE

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

**Column Name**

The name of the column in the table you are creating.

**Name**

The program name of the field procedure exit.

**Parameters**

A list of parameters passed to the field procedure exit when it is called. The list must be comma-delimited and enclosed in parenthesis as required by the SQL syntax.

## Parent panels

- "Create Table panel" on page 486

## Child panels

None.

## Related tasks

- "Creating a table" on page 178

## Create Table: Table Check Constraints panel

You use the Create Table: Table Check Constraints panel to specify information to define table check constraints for the table.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Table: Column Check ConstraintsRow 1 to 1 of 1

Owner . . . . .

Name . . . . . TAB1

Database . . . . .

Table Space . . . . .

Set Column Name

+ Data Type(Length)

+ Constraint Name

+ Condition

+

COL1

CHAR(3)

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F5=Tabcons

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

Scroll PAGE

- Cmd

Line command area. Use the following line commands to manipulate the panel rows containing table check constraint information:

In

Insert *n* new rows.

R*n*

Repeat the current row *n* times.

D*n*

Delete *n* rows.

S

Select a row. FM/DB2 displays a scrollable panel that you use to specify a check condition up to the maximum length allowed by DB2. See the description for the **Check Condition** field.

Constraint Name

The name of the constraint. This is an optional field.

Check Condition

SQL expression defining the table check constraint.

If you need to specify a check condition that is too long to fit in the field on the panel, enter S in the **Cmd** field to display a panel. If a long check condition already exists and you alter the part of the check condition displayed on the Table Check Constraints panel, FM/DB2 displays the same panel that you can use to confirm the changes you have made.

**Note:** FM/DB2 does not validate the check condition you specify.



## **Create Table: Table Check Constraints panel**

### **Parent panels**

- “Create Table panel” on page 486

### **Child panels**

None.

### **Related tasks**

- “Creating a table” on page 178

## Create Table: Table Referential Constraint panel

You use the Create Table: Table Referential Constraint panel to specify the foreign key and parent key columns for a table referential constraint.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Create Table: Table Referential Constraint	Row 1 to 1 of 1	
Constraint:			
Name . . . . . CON1			
Parent Table Owner . .			
Parent Table Name . . . EMP			
Order	Column Name	Data Type(Length)	Parent Key Column
	COL1	CHAR(3)	
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Name** The name of the constraint.

#### Parent Table Owner

The name of the parent table owner.

#### Parent Table Name

The name of the parent table.

#### Order

Enter S or a number to add a column to the foreign key. When you enter S, FM/DB2 generates the next highest number for the key. To deselect a column that is already selected, clear the displayed number by overtyping it with spaces.

**Note:** The actual numbers are not important; FM/DB2 uses their relative order to define the column order for the key.

#### Column Name

The name of the column in the table you are creating.

#### Data Type(Length)

The data type of the column in the table you are creating.

#### Parent Key Column

Specify the name of the column in the parent table that you want to relate to the foreign key column (**Column Name**) you have ordered. If you leave this field blank, FM/DB2 relates the foreign key to the primary key of the parent table.

## Create Table: Table Referential Constraint panel

**Note:** If you have selected more than one column for the foreign key (by entering S or a number in the **Order** field), the corresponding Parent Key Columns must all be blank or all be filled.

### Parent panels

- “Create Table: Table Referential Constraints panel” on page 521

### Child panels

None.

### Related tasks

- “Creating a table” on page 178

## Create Table: Table Referential Constraints panel

You use the Create Table: Table Referential Constraints panel to specify information to define one or more table referential constraints for the table.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		Create Table: Table Referential Constraints				Row 1 to 1 of 1	
Constnt		<----- Parent table ----->				ON	
Cmd Name	+ Foreign key columns...	+ Owner	+ Name			+ DLT	
CON1			EMP			-	
***** Bottom of data *****							
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=Expand	F6=Colcons	Scroll PAGE		
F8=Forward	F9=Swap	F10=Left	F11=Right	F12=Cancel	F7=Backward		

#### Cmd

Line command area. Use the following line commands to manipulate the panel rows containing table referential constraint information:

- In** Insert *n* new rows.
- Rn** Repeat the current row *n* times.
- Dn** Delete *n* rows.
- S** Select the row and display the Referential Constraint panel.

#### Constnt Name

The name of the constraint. This is an optional field.

#### Foreign key columns...

A list of the columns currently selected as the foreign key for this constraint. FM/DB2 displays only as many columns as fit in the available space.

#### Parent Table Owner

Optionally use this field to qualify the name of the parent table.

#### Parent Table Name

The name of the table containing the parent key. This field is mandatory.

#### ON DLT

(See details for the **ON DLT** field as described for the Column Referential Constraints panel on page 503).

### Parent panels

- “Create Table panel” on page 486

## Create Table: Table Referential Constraints panel

### Child panels

To display this panel...	Use/do this
"Create Table: Table Referential Constraint panel" on page 519	Enter S in <b>Cmd</b> field

### Related tasks

- "Creating a table" on page 178

### Related references

- "Create Table: Table Referential Constraint panel" on page 519

## Create Table: Unique Constraints panel

You use the Create Table: Unique Constraints panel to specify information to define a primary key and up to three additional unique keys for the table you are creating.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Create Table: Unique Constraints	Row 1 to 1 of 1	
Constraint Names (optional):			
Primary Key .			+
Unique Key 1 .			+
Unique Key 2 .			+
Unique Key 3 .			+
<---- Column Order in Key ---->			
Primary	Unique1	Unique2	Unique3
Column Name	+ Datatype(length)		
COL1	CHAR(3)		
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
			Scroll PAGE
			F8=Forward

- Primary** If not blank, shows the relative order of the column for the primary key.
- Unique1** If not blank, shows the relative order of the column for the first unique key.
- Unique2** If not blank, shows the relative order of the column for the second unique key.
- Unique3** If not blank, shows the relative order of the column for the third unique key.
- Column Name** The name of the column.
- Datatype(length)** The data type and, if applicable, the length of the column.

### Parent panels

- "Create Table panel" on page 486

### Child panels

None.

### Related tasks

- "Creating a table" on page 178

# Create Trigger panel

You use the Create Trigger panel to create a new trigger.

## Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Trigger

Trigger:

Schema . . . . . + (optional)

Name . . . . . +

Trigger Creation:

Creation Options

1 1. Details (required)

2. Search Conditions (optional)

3. SQL Statement (required)

4. Create the Trigger

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

**Schema** Name of schema.

**Name** Name of new trigger.

**Creation Options**

Specify the number of the creation option you want to use:

**1. Details** To specify information to define the type of trigger to be created. Displays the Create Trigger: Details panel.

**2. Search Conditions** To specify information to define the optional search condition to restrict the execution of the trigger. Displays the Create Trigger: Search Condition panel.

**3. SQL statement** To specify SQL statements to be executed when the trigger is activated. displays the Create Trigger: SQL statement panel.

**4. Create the Trigger** When you have finished specifying details for the trigger to be created, select this creation option to create the trigger.

## Parent panels

- “DB2 Object Functions panel” on page 550
- “Triggers panel” on page 785

## Child panels

To display this panel...	Use/do this
"Create Trigger: Details panel" on page 526	Creation option 1
"Create Trigger: Search Condition panel" on page 528	Creation option 2
"Create Trigger: SQL statement panel" on page 529	Creation option 3

## Related tasks

- "Creating a trigger" on page 190



## Create Trigger: Details panel

You use the Create Trigger: Details panel to specify information to define the type of trigger to be created.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create Trigger: Details

Trigger:

Order (required)Type (required)

1. No cascade before

1. Insert

2. After

2. Delete

3. Update

Columns (optional, separate by comma)

+

Trigger Table:

Owner . . . . . (optional)

Name . . . . .

+

Referencing Old:

Correlation name . (optional)

Table identifier . (optional, after trigger)

Referencing New:

Correlation name . (optional)

Table identifier . (optional, after trigger)

Executed (Required)

1. For each modified row

2. Once (After Trigger)

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

#### No cascade before

Defines the trigger as a before trigger.

#### After

Defines the trigger as an after trigger.

#### Type

##### Insert

The trigger is executed when a row is inserted in the trigger table.

##### Delete

The trigger is executed when a row is deleted from the trigger table.

##### Update

The trigger is executed when a row is updated from the trigger table.

#### Columns

Specifies a list of columns to restrict the execution of an update trigger to updates on the specified columns.

#### Name

Name of the table against which an action causes the trigger to be executed.

#### Owner

Owner of the trigger table.

#### Old correlation name

Correlation name used to reference rows as they were before the triggering SQL operation.

### **New correlation name**

Correlation name used to reference rows as they were after the triggering SQL operation.

### **Old table identifier**

Temporary table identifier used to reference the complete set of rows as they were before the SQL operation.

### **New table identifier**

Temporary table identifier used to reference the complete set of rows as they were after the SQL operation.

### **1. For each modified row**

The trigger option is executed for each modified row of the trigger table.

### **2. Once (After Trigger)**

The trigger action is executed only once for the triggering SQL operation.

## **Parent panels**

- “Create Trigger panel” on page 524

## **Child panels**

None.

## **Related tasks**

- “Creating a trigger” on page 190

### Create Trigger: Search Condition panel

You use the Create Trigger: Search Condition panel to specify information to define the optional search condition to restrict the execution of the trigger. You do not need to type the WHEN keyword and enclosing parentheses for the condition; they are added automatically if omitted.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Trigger Search Condition			
Search Condition (Optional)					
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

#### Search Condition

Freeform entry area for the search condition. The triggered SQL statements are executed only if the search condition evaluates to true or is omitted.

#### Parent panels

- “Create Trigger panel” on page 524

#### Child panels

None.

#### Related tasks

- “Creating a trigger” on page 190



## Create View panel

You use the Create View panel to create a new view.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Create ViewTop of data

View:

Owner . . . . . + (optional)

Name . . . . . +

Fullselect clause (required)

Column names (optional, separated by commas)

With Check Option (Optional):

Option

1. With Cascaded Check Option

2. With Local Check Option

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

**Owner**            The name of the owner of the view.

**Name**            The name of the view to be created.

**Subselect clause**  
SQL subselect clause defines the contents of the view.

**Column names**  
A list of column names defining the names of the view columns. Must be specified if the subselect clause result table contains duplicate or unnamed columns. If specified, must contain the same number of columns as the subselect clause result table.

- With Check Option**  
Controls whether or not inserted rows must conform to the view definition.
- 1. With Cascaded Check Option**  
Generates WITH CASCADED CHECK OPTION clause.
  - 2. With Local Check Option**  
Generates WITH LOCAL CHECK OPTION clause.

### Parent panels

- “DB2 Object Functions panel” on page 550

## Child panels

None.

## Related tasks

- “Creating a view” on page 185

```

  _Process   _Options   _Utilities   _Help
-----
FM/DB2 (DFA2)           Create View Source Statements

Valid primary commands are: BRW - Browse  E - Edit  EX - Edit/Execute
-----

create view keistw.v1 (col1, col2 ) as select tbname, tbcreator from sysibm.sys
ffields


Command ==>
F1=Help      F2=Split    F3=Exit     F4=CRetrieval  F7=Backward  F8=Forward
F9=Swap      F10=Actions F12=Cancel

```

- “Tables, Views and Aliases panel” on page 776

None.

## Related tasks

## Data Create Utility panel

You use the Data Create Utility panel to populate a DB2 table with a specified number of rows of data.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Data Create Utility	
DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	FMUSER	+	Table space . . . . . (optional)
Name . . . . .	LONGTABLENAMEMORETHAN18CHARS +		
Create Count . . .	1	Number of rows to create	
Template:			
Data set name . . .			
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	- Edit template		
- 2. Previous	- Batch execution		
3. Generate from table	- Create audit trail (*)		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Location

The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

#### Database

The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

#### Owner

The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.



### Table space

The table space name for the DB2 object. To further define the object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

### Create Count

Specify the number of rows you want to create in the DB2 table. This is a required field and must be in the range 1–2147483647.

### Data set name

If you are using a specific template to specify the data initialization details, (see option 1 in **Template usage**), specify the name of the template data set. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

### Member

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

### Processing Options

You can use these options to specify which template you want to use for the create process, and whether you want to edit the template before the create process.

#### Template usage

The Data Create Utility panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

##### 2. Previous

Uses the last (previously used) template for this table.

**3. Generate from table**

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

**4. Generate/Replace**

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **DB2 Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a “/” or an “A”:

**Edit template**

Use to edit the template before creating the data.

**Batch execution**

Builds the necessary JCL to perform the Create function in a batch job. The generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

**Create audit trail**

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

**Parent panels**

- “Utility Functions panel” on page 797

**Child panels**

To display this panel...	Use/do this
“Column Selection/Edit panel” on page 419	Select <b>Edit template</b>

**Related tasks**

- Chapter 6, “Populating a DB2 table with data,” on page 193
- “Specifying a data set and a member name” on page 34

## Data Create Utility panel

- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55
- “SAF-rule controlled auditing” on page 51

## Database Request Modules panel

You use the Database Request Modules panel to list the DBRMs in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSDBRM.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)		Database Request Modules (DBRMs)			
Location:		Format <u>T</u> ABL			
SEL	NAME	PDSNAME	TIMESTEX	PLNAME	PLCREATOR
*	*	*	*	*	*
----	#1--+-	#3--+-1-----2-----	#18--+-1-----	#4--+-	#5--+-
****	Top of data	****			
	DSNTIAD	DB2V810.DFA2.DBRMLIB.DATA	17A07E9719351199	DSNTIA81	JCULLEN
****	End of data	****			
Command ==>					
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	Scroll PAGE
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F6=RChange
					F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Application Plans panel” on page 397

## Child panels

To display this panel...	Use/do this
(ISPF panel)	Line command B
"Details panels" on page 564	Line command I
"Application Plans panel" on page 397	Line command PL
"Display Row panel" on page 564	Line command ROW
"Sort Fields panel" on page 747	Primary command SORT

## Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

## Related references

- "SORT primary command" on page 853

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## Database Structure panel

FM/DB2 displays the Database Structure panel if you use the DS line command against an item listed on:

- The "Databases panel" on page 538, or
- The "Table Spaces panel" on page 768

## Databases panel

You use the Databases panel to list database object types in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSDATABASE.

<u>Process</u>	<u>Options</u>	<u>Utilities</u>	<u>Help</u>								
FM/DB2 (DFA2)				Databases							
Location:				Format <u>TABL</u>							
SEL	NAME	CREATOR	STGROUP	BP00L	DBID	CREATEDBY	TYPEEX	GROUP+	MEMBER		
	*	*	*	*	*	*	*	*	*		
----	#1--+---	#2--+---	#3--+---1-	#4--+---	-----#5	#7--+---	#20--+---	#11--+			
****	Top of data ****										
----	ABC	KEISTE2	DDDDDDDDDD	BP0	270	KEISTE2					
----	DSN8D81A	JCULLEN	DSN8G810	BP0	259	JCULLEN					
----	DSN8D81P	JCULLEN	DSN8G810	BP0	260	JCULLEN					
----	DSNATPDB	JCULLEN	SYSDEFLT	BP0	257	JCULLEN					
----	DSNDB04	SYSIBM	SYSDEFLT	BP0	4	SYSIBM					
----	DSNDB06	SYSIBM			6	SYSIBM					
----	DSNDB07	JCULLEN	SYSDEFLT	BP0	7	JCULLEN	WORKFILE				
----	DSNRGfdb	JCULLEN	SYSDEFLT	BP0	258	JCULLEN					
----	DSNRLST	JCULLEN	SYSDEFLT	BP0	256	JCULLEN					
----	FUNTbdb	KEISTEW	SYSDEFLT	BP8K0	271	KEISTEW					
----	JLV3D81A	KEISTEW	JLV3G810	BP0	266	KEISTEW					
Command ==>				Scroll <u>PAGE</u>							
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange						
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel						

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Table Spaces panel” on page 768
- “Tables, Views and Aliases panel” on page 776
- “Indexes panel” on page 645

### Child panels

To display this panel...	Use/do this
“Alter Database panel” on page 378	Line command A

To display this panel...	Use/do this
"Create Database panel" on page 449	Line command CR
"Create Table Space panel" on page 489	Line command CRS
See "Drop panels" on page 566	Line command DR
"Database Structure panel" on page 537	Line command DS
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Recovery Information panel" on page 698	Line command ICS
"Privileges panels" on page 678	Line command P
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Table Spaces panel" on page 768	Line command S
"Tables, Views and Aliases panel" on page 776	Line command T
"Indexes panel" on page 645	Line command X
"Sort Fields panel" on page 747	Primary command SORT

## Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

## Related references

- "SORT primary command" on page 853

## DB2 Browse panel

You use the DB2 Browse panel to enter the name of an object to be browsed. You also use this panel to specify the name of a template that describes a logical view of the object.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		DB2 Browse	
Specify the DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	FMNUSER	+	Table space . . . . . (optional)
Name . . . . .	EMP		+
Start position . .	1		
Row count . . . . .	100		Number of rows to browse
Template:			
Data set name . . .	'FMNUSER.TEMPLATE'		
Member . . . . .	SALARY		
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	- Edit options		
- 2. Previous	- Edit template		
3. Generate from table	- Re-edit template		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand F7=Backward F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

**Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

**Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Start position** Indicates where FM/DB2 is to begin loading rows from the result table into the FM/DB2 editor.

If you specify a value greater than 1 (the default), FM/DB2 skips n-1 rows of the result table before loading rows into the FM/DB2 editor. If the **Row count** value is ALL (or 0 or \*), when the data is displayed you can scroll up to see the rows that were skipped. For a fixed **Row count** value, you cannot scroll backwards to see any skipped rows.

**Row count** Use this option to specify the maximum number of rows to be retrieved from DB2 and loaded into memory for the Browse session. You can specify a value in the range 1-999999999 or, to indicate that all rows are to be retrieved, specify ALL, 0, or \*. The default value is 100.

An FM/DB2 Browse session only applies to those rows fetched from DB2 and loaded into the editor. It does not apply to any unfetched rows. This means that the FIND primary command only applies to those rows fetched from DB2.

**Note:** When you are browsing large tables, use the value of ALL, 0, or \* with caution as it is possible to encounter storage problems. The amount of storage required by the editor depends on both the number of rows retrieved, and the row length. Use the row selection criteria section of the template to limit the number of rows retrieved.

**Data set name** The name of a data set that contains, or will contain, the template. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.



### Template usage

The DB2 Browse panel provides four options for template processing:

#### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

#### 2. Previous

Uses the last (previously used) template for this table.

#### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

#### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select this option to change the options for the current editor session:

### Edit options

Enter one of these:

#### A "/" or an "A"

Displays the first FM/DB2 editor options panel, prior to displaying the data for the DB2 object being processed.

#### A number in the range 1–7

Displays the *n*th FM/DB2 editor options panel directly where *n* is the value entered.

You can select the following options by entering a "/" or an "A":

### Edit template

Select this option to edit the template before browsing the data.

### Re-edit template

Select this option to control the navigation between panels within the Browse dialog. This option controls the behavior of the F3 and F12 keys when pressed from within a Browse session.

## Parent panels

- "Table Browse panel" on page 758 (when BROWSE primary command entered)
- "Table Edit panel" on page 761 (when BROWSE primary command entered)
- "Table View panel" on page 770 (when BROWSE primary command entered)
- "Primary Option Menu panel" on page 670 (when "B" entered on command line)

- “Tables, Views and Aliases panel” on page 776 (when B line command entered)

## Child panels

To display this panel...	Use/do this
“Table Browse panel” on page 758	No options selected and press Enter
“Editor Options (1 of 7) panel” on page 571	Select <b>Edit options</b>
“Column Selection/Edit panel” on page 419	Select <b>Edit template</b> or <b>Re-edit template</b>

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Selecting options on FM/DB2 panels” on page 28
- “Specifying a data set and a member name” on page 34
- “Where you can use templates” on page 8
- Chapter 3, “Working with templates,” on page 55
- “View and Edit options (options 1 and 2)” on page 48

## DB2 Edit panel

You use the DB2 Edit panel to enter the name of an object to be edited. You also use this panel to specify the name of a template that describes a logical view of the object.

### Panel and field definitions

Process	Options	Help
FM/DB2 (DFA2)	DB2 Edit	
Specify the DB2 Object:		
Location . . . . .	Database . . . . . (optional)	
Owner . . . . . FMNUSER	Table space . . . . . (optional)	
Name . . . . . EMP		
Start position . . . . . 1		
Row count . . . . . 100	Number of rows to edit	
Template:		
Data set name . . . . . 'FMNUSER.TEMPLATE'		
Member . . . . . SALARY		
Processing Options:		
Template usage	Enter "/", "A" always to select option	
3 1. Above	- Edit options	
- 2. Previous	- Edit template	
3. Generate from table	- Re-edit template	
4. Generate/Replace	- Create audit trail	
Command ==>		
F1=Help	F2=Split	F3=Exit
F9=Swap	F10=Left	F11=Right
	F4=Expand	F7=Backward
	F12=Cancel	F8=Forward

**Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

**Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

**Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Start position** Indicates where FM/DB2 is to begin loading rows from the result table into the FM/DB2 editor.

If you specify a value greater than 1 (the default), FM/DB2 skips n-1 rows of the result table before loading rows into the FM/DB2 editor. If the **Row count** value is ALL (or 0 or \*), when the data is displayed you can scroll up to see the rows that were skipped. For a fixed **Row count** value, you cannot scroll backwards to see any skipped rows.

**Row count** Use this option to specify the maximum number of rows to be retrieved from DB2 and loaded into memory for the editor session. You can specify a value in the range 1–999999999 or, to indicate that all rows are to be retrieved, specify ALL, 0, or \*. The default value is 100.

An FM/DB2 editor session only applies to those rows fetched from DB2 and loaded into the editor. It does not apply to any unfetched rows. This means that the FIND and CHANGE primary commands only apply to those rows fetched from DB2.

**Note:** When you are editing large tables, use the value of 0 with caution as it is possible to encounter storage problems. The amount of storage required by the editor depends on both the number of rows retrieved, and the row length. Use the row selection criteria section of the template to limit the number of rows retrieved.

**Data set name** The name of a data set that contains, or will contain, the template. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

### Template usage

The DB2 Edit panel provides four options for template processing:

#### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

#### 2. Previous

Uses the last (previously used) template for this table.

#### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

#### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

### Edit options

Select this option to change the options for the current editor session by entering one of these:

#### A "/" or an "A"

Displays the first FM/DB2 editor options panel, prior to displaying the data for the DB2 object being processed.

#### A number in the range 1–7

Displays the *n*th FM/DB2 editor options panel directly where *n* is the value entered.

Any options that you set last only for the duration of the current Edit session, and override any conflicting global options. To permanently change the Edit options, select option 0.2.

You can select the following options by entering a "/" or an "A":

### Edit template

Select this option to edit the template before editing the data.

### Re-edit template

Select this option to control the navigation between panels within the Edit dialog. This option controls the behavior of the F3 and F12 keys when pressed from within an Edit session.

### Create audit trail

**Note:** "(\*)" is appended to the option name for SAF-controlled auditing when required by SAF rules.

Determines if FM/DB2 generates an audit trail report of all successful modifications to DB2 data made during an Edit session:

/      Audit trail report generated.

(blank)

Audit trail report not generated.

**Note:** The ability to change this option depends on installation options within the DB2 subsystem to which FM/DB2 is connected. The **Create an audit trail** option can be:

- Permanently selected ("/" shown in the option). Audit trail reporting occurs for Edit processing. You cannot change the setting of the option.
- Permanently deselected (blank shown in the option). Audit trail reporting does not occur for Edit processing. You cannot change the setting of the option.
- Optional. Type a "/" in the option to generate audit reporting for all Edit processing; otherwise, type a space in the option to suppress audit trail reporting of any Edit processing.

At the end of your FM/DB2 session, the **Create an audit trail** option that you specify can be saved to your ISPF profile, or it can be set to blank (audit trail report not selected), depending on the installation options within the DB2 subsystem to which FM/DB2 is connected. The audit installation options for the currently connected DB2 system can be determined by selecting option 7 from the HELP pull down menu. When the auditing option is "OPTIONAL,OFF", the Create an audit trail option is always reset to blank (not selected) at the start of an FM/DB2 session. This means that, for an audit log to be written, auditing must be explicitly selected each time a new FM/DB2 session is started. Further, when this option is selected, there is no distinction between the global setting for the audit option, and any value entered using 'edit options' on the DB2 edit panel. For more information, see the *File Manager Customization Guide* or see your systems administrator.

## Parent panels

- "Primary Option Menu panel" on page 670
- "Tables, Views and Aliases panel" on page 776

## Child panels

To display this panel...	Use/do this
"Table Edit panel" on page 761	No options selected and press Enter
"Editor Options (1 of 7) panel" on page 571	Select <b>Edit options</b> by typing a "/", an "A", or "1"
"Editor Options (2 of 7) panel" on page 575	Select <b>Edit options</b> by typing a "2"
"Editor Options (3 of 7) panel" on page 579	Select <b>Edit options</b> by typing a "3"

## DB2 Edit panel

To display this panel...	Use/do this
"Editor Options (4 of 7) panel" on page 584	Select <b>Edit options</b> by typing a "4"
"Editor Options (5 of 7) panel" on page 587	Select <b>Edit options</b> by typing a "5"
"Editor Options (6 of 7) panel" on page 590	Select <b>Edit options</b> by typing a "6"
"Editor Options (7 of 7) panel" on page 593	Select <b>Edit options</b> by typing a "7"
"Column Selection/Edit panel" on page 419	Select <b>Edit template</b> or <b>Re-edit template</b>

### Related tasks

- Chapter 4, "Viewing and changing DB2 data," on page 95
- "Selecting options on FM/DB2 panels" on page 28
- "Specifying a data set and a member name" on page 34
- "Where you can use templates" on page 8
- Chapter 3, "Working with templates," on page 55
- "View and Edit options (options 1 and 2)" on page 48

DB2 Location Selection panel

You use the DB2 Location Selection panel to display all the available remote locations. You can only access remote locations that have been defined to your local DB2 subsystem.

Panel and field definitions

Process

Opti

FM/DB2 (DFA2)

Specify the DB2

Location .

Owner . . .

Name . . .

Template:

Data set nam

Member . .

Processing Opti

Template usa

1 1. Above

2. Previo

3. Genera

4. Genera

Command ==>

F1=Help F

F9=Swap F1

DB2 Location Selection

Row 1 to 4 of 4

Select one of the DB2 locations from the list.

Sel Location

Linkname

LU Name

IP Address

— QXPMVS6DB2D

MVS6DB2D ?

?

— QXPMVS8DB2D

MVS8DB2D

MVS8DB2D ?

— QXPMVS8DB26

MVS8DB26 ?

?

— QXPMVS8DB62

MVS8DB62

MVS8DB62 ?

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=Help

F2=Split

F3=Exit

F7=Backward

F8=Forward

F9=Swap

F12=Cancel

Parent panels

Asterisk (\*) or pattern entered in **Location** field on any FM/DB2 panel (except) Object List Utility.

Child panels

None.

Related tasks

- “Specifying a DB2 object name” on page 29
- “Remote DB2 Location Selection panel” on page 702



## DB2 Object Functions panel

You use the DB2 Object Functions panel to create and drop DB2 objects.

### Panel and field definitions

Process	Options	Utilities	Help												
FM/DB2 (DFA2)		DB2 Object Functions													
C Create object		D Drop object													
Processing Options:															
Object Type															
<table border="0"> <tr> <td>1. Database</td> <td>5. Alias</td> <td>9. Function</td> </tr> <tr> <td>2. Table space</td> <td>6. Index</td> <td>10. Stored procedure</td> </tr> <tr> <td>3. Table</td> <td>7. Synonym</td> <td>11. Trigger</td> </tr> <tr> <td>4. View</td> <td>8. Distinct type</td> <td>12. Auxiliary Table (Create)</td> </tr> </table>				1. Database	5. Alias	9. Function	2. Table space	6. Index	10. Stored procedure	3. Table	7. Synonym	11. Trigger	4. View	8. Distinct type	12. Auxiliary Table (Create)
1. Database	5. Alias	9. Function													
2. Table space	6. Index	10. Stored procedure													
3. Table	7. Synonym	11. Trigger													
4. View	8. Distinct type	12. Auxiliary Table (Create)													
Enter "/" to select option															
_ Confirm object drop															
Command ==>															
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward												
F9=Swap	F10=Actions	F12=Cancel													

You can select the following option by entering a “/”:

#### Confirm object drop

Indicates if you want FM/DB2 to display a confirmation panel each time you enter a DR(op) command against an object

### Parent panels

- “Utility Functions panel” on page 797

### Child panels

To display this panel...	Use/do this
“Create Database panel” on page 449	Select object type <b>Database</b> and enter C
“Create Table Space panel” on page 489	Select object type <b>Table space</b> and enter C
“Create Table panel” on page 486	Select object type <b>Table</b> and enter C
“Create View panel” on page 530	Select object type <b>View</b> and enter C
“Create Alias panel” on page 445	Select object type <b>Alias</b> and enter C
“Create Index panel” on page 464	Select object type <b>Index</b> and enter C
“Create Synonym panel” on page 485	Select object type <b>Syntax</b> and enter C

To display this panel...	Use/do this
"Create Distinct Type panel" on page 451	Select object type <b>Distinct type</b> and enter C
"Create Function panel" on page 457	Select object type <b>Function</b> and enter C
"Create Procedure panel" on page 476	Select object type <b>Stored procedure</b> and enter C
"Create Trigger panel" on page 524	Select object type <b>Trigger</b> and enter C
"Create Auxiliary Table panel" on page 447	Select object type <b>Auxiliary table</b> and enter C
Select object type <b>Database</b> and enter D	
Select object type <b>Table space</b> and enter D	
Select object type <b>Table</b> and enter D	
Select object type <b>View</b> and enter D	
Select object type <b>Alias</b> and enter D	
Select object type <b>Index</b> and enter D	
Select object type <b>Syntax</b> and enter D	
Select object type <b>Distinct type</b> and enter D	
Select object type <b>Function</b> and enter D	
Select object type <b>Stored procedure</b> and enter D	
Select object type <b>Trigger</b> and enter D	

## Related tasks

- Chapter 5, "Creating and dropping DB2 objects," on page 165

### DB2 Save Error Action panel

You use the DB2 Save Error Action panel to determine the type of error, and what action you can take, when an error occurs during an FM/DB2 Edit session.

#### Panel and field definitions

FM/DB2 (DFA2)
DB2 Save Error Action
Row 1 to 1 of 1

DB2 reported a No Primary Key error while attempting to save this row.

Relationship : RPAA (See below for key column details)  
 Parent table : FMUSER.ACT  
 Dependent table : FMUSER.PROJACT

Explanation: The insert or update operation on this line would have resulted in a foreign key value for which there is no corresponding primary key value.

Instructions: Type REDIT on the command line to edit the parent table shown above. Press Enter or enter EXIT to return to the Edit session and correct the error. Press the CANCEL key to end the Edit session. Any changes made since the last commit point are lost.

Parent Column Name	Depndnt Column Name	Value
ACTNO	ACTNO	000999

Command ==>

<div style="display: flex; justify-content: space-between;"> <span>C</span> <span>F1=Help</span> <span>F2=Split</span> <span>F3=Exit</span> <span>F7=Backward</span> </div> <div style="display: flex; justify-content: space-between;"> <span>F8=Forward</span> <span>F9=Swap</span> <span>F12=Cancel</span> </div>	<div style="display: flex; justify-content: space-between;"> <span>Scroll</span> <span>PAGE</span> </div> <div style="display: flex; justify-content: space-between;"> <span>F6=RChange</span> <span>12=Cancel</span> </div>
--	--

#### Related tasks

- “Example of correcting an error during an Edit session” on page 161

## DB2 Subsystem Selection panel

You use the DB2 Subsystem Selection menu to select the DB2 subsystem to which you want FM/DB2 to connect.

### Panel and field definitions

Process		Help	
FM/DB2 (DFA2)		DB2 Subsystem Selection	
		Row 1 of 27	
Sel	SSID	Status	Description
			Prefix
-	DFA2	ACTIVE	DB2 Version 8.1 - Development system
-	DFB2	ACTIVE	DB2 Version 8.1 - Test system
-	DFD2	ACTIVE	DB2 Version 8.1 - DBCS testing system
-	DFE2	ACTIVE	
-	DFF2	ACTIVE	
-	DF72	ACTIVE	DB2 Version 7.1
-	DF82	ACTIVE	DB2 Version 7.1 for FM/DB2 FVT only
-	DF92	ACTIVE	DB2 Version 7.1 - DBCS Testing system
-	DG01	GROUP	DB2 Group Attach ID number 1
-	DG02	GROUP	DB2 Group Attach ID number 2
-	DFG2	INACTIVE	
-	DFH2	INACTIVE	
-	DFI2	INACTIVE	
Command ==>			
F1=Help	F2=Split	F3=Exit	F5=Refresh
F8=Down	F9=Swap	F12=Cancel	F6=Show
			Scroll PAGE
			F7=Up

**Note:** The DB2 Subsystem Selection panel shown here shows some inactive DB2 subsystems. Your systems administrator might have customized the list so that, for example, only active DB2 subsystems appear. For more information, see your systems administrator or see the *File Manager Customization Guide*.

The fields on the DB2 Subsystem Selection menu are:

<b>Sel</b>	Selection field. Enter S or / to select the DB2 subsystem shown on that line.								
<b>SSID</b>	The subsystem ID. This ID is displayed in the <b>DB2 SSID</b> field on the Primary Option Menu and shows to which DB2 subsystem FM/DB2 is currently connected.								
<b>Status</b>	Shows status of the DB2 subsystem: <table> <tr> <td><b>ACTIVE</b></td><td>DB2 system is active and is available for connection.</td></tr> <tr> <td><b>GROUP</b></td><td>DB2 system is in a DB2 data sharing environment and is available for connection.</td></tr> <tr> <td><b>INACTIVE</b></td><td>DB2 system is not active and is not available for connection.</td></tr> <tr> <td><b>UNAVAIL.</b></td><td>FM/DB2 has not been installed on a subsystem or DB2 data sharing group, or FM/DB2 is not available for connection.</td></tr> </table>	<b>ACTIVE</b>	DB2 system is active and is available for connection.	<b>GROUP</b>	DB2 system is in a DB2 data sharing environment and is available for connection.	<b>INACTIVE</b>	DB2 system is not active and is not available for connection.	<b>UNAVAIL.</b>	FM/DB2 has not been installed on a subsystem or DB2 data sharing group, or FM/DB2 is not available for connection.
<b>ACTIVE</b>	DB2 system is active and is available for connection.								
<b>GROUP</b>	DB2 system is in a DB2 data sharing environment and is available for connection.								
<b>INACTIVE</b>	DB2 system is not active and is not available for connection.								
<b>UNAVAIL.</b>	FM/DB2 has not been installed on a subsystem or DB2 data sharing group, or FM/DB2 is not available for connection.								
<b>Description</b>	The descriptive name of the DB2 subsystem.								
<b>Prefix</b>	Command prefix for the DB2 subsystem.								

## **DB2 Subsystem Selection panel**

### **Parent panels**

- “Primary Option Menu panel” on page 670

### **Child panels**

None.

### **Related tasks**

- “Selecting the DB2 subsystem when more than one is available” on page 15



## DB2 Utilities panel

You use the DB2 Utilities panel to generate DB2 utility jobs to copy, load, rebuild, reorganize and collect statistics on DB2 objects.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		DB2 Utilities	
Processing Options:			
DB2 Utility:	(valid obj)	Object Type:	Specification:
1 1. COPY	(2,3)	2 1. Tables	1 1. Object name
2. LOAD	(1)	2. Table spaces	2. LISTDEF
3. REBUILD	(4,5)	3. Index spaces	
4. RECOVER	(2,3)	4. Indexes	
5. REORG	(2,4)	5. Indexes for table spaces	
6. RUNSTATS	(2,4)		
7. UNLOAD	(1,2)		
DB2 Object Details: (* for list in any field)			
Database . . . . .			
Table/Index space . . . . .			
Table or Index:			
Owner . . . . . +			
Name . . . . . +			
LISTDEF Details: (* unavailable)			
LISTDEF name . . . . .			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

The DB2 Utilities panel shows a list of the available utilities on the left side of the “Processing Options” section, and a list of DB2 object types on the right. Each DB2 utility applies to only certain object types. For example, the LOAD utility only applies to DB2 tables. The valid object types for each utility are shown under the heading “Valid DB2 Obj”.

The panel shows a **Specification** section and a **LISTDEF name** field. A selection of LISTDEF means that a LISTDEF name is to be specified as the object of the utility; otherwise, the object name of the type specified in object type is to be specified.

In the **Specification** section, you can select:

#### 1. Object name

The object specified in **DB2 Object Details** is used as the object of the utility.

#### 2. LISTDEF

The name specified in **LISTDEF name** is used as the object of the utility.

**Note:** The LOAD syntax does not have a LISTDEF clause. If you select LOAD in the **DB2 Utility** section and LISTDEF in the **Specification** section, FM/DB2 issues a warning message.

In the **LISTDEF name** section, if you have specified 2 (LISTDEF) in the **Specification** section, specify the name of the LISTDEF you want to use.

You specify the objects to be processed by the DB2 utility at the bottom of the panel.

**Database**            The name of the database for the object.

**Table/Index space**            The name of the table space or index space for the object.

**Owner**            The name of the owner of the table or index for the object.

**Name**            The name of the table or index for the object.

## Parent panels

- “Primary Option Menu panel” on page 670
- “Table Spaces panel” on page 768
- “Tables, Views and Aliases panel” on page 776
- “Indexes panel” on page 645

## Child panels

To display this panel...	Use/do this
“COPY Utility (Table Spaces) panel” on page 441	DB2 utility: COPY; object type: Table space; specification: Object name
“COPY Utility (Table Spaces) with LISTDEF panel” on page 443	DB2 utility: COPY; object type: Table space; specification: LISTDEF
“COPY Utility (Index Spaces) panel” on page 434	DB2 utility: COPY; object type: Index space; specification: Object name
“COPY Utility (Index Spaces) with LISTDEF panel” on page 437	DB2 utility: COPY; object type: Index space; specification: LISTDEF
“LOAD Utility panel” on page 654	DB2 utility: LOAD; object type: Tables; specification: Object name
“LOAD Utility panel using DB2 templates” on page 656	DB2 utility: LOAD; object type: Tables; specification: LISTDEF
“REBUILD Utility (Indexes) panel” on page 687	DB2 utility: REBUILD; object type: Indexes; specification: Object name
“REBUILD (Indexes) with LISTDEF panel” on page 689	DB2 utility: REBUILD; object type: Indexes; specification: LISTDEF
“REBUILD (Indexes for Table Spaces) panel” on page 683	DB2 utility: REBUILD; object type: Indexes for Table space; specification: Object name
“RECOVER Utility (Table Spaces) panel” on page 695	DB2 utility: RECOVER; object type: Table space; specification: Object name



## DB2 Utilities panel

To display this panel...	Use/do this
"RECOVER Utility (Table Spaces) with LISTDEF panel" on page 697	DB2 utility: RECOVER; object type: Table space; specification: LISTDEF
"RECOVER Utility (Index Spaces) panel" on page 691	DB2 utility: RECOVER; object type: Index spaces; specification: Object name
"REORG Utility (Table Spaces) panel" on page 706	DB2 utility: REORG; object type: Table space; specification: Object name
"REORG Utility (Indexes) panel" on page 703	DB2 utility: REORG; object type: Indexes; specification: Object name
"REORG Utility (Indexes) with LISTDEF panel" on page 705	DB2 utility: REORG; object type: Indexes; specification: LISTDEF
"RUNSTATS Utility (Table Spaces) panel" on page 717	DB2 utility: RUNSTATS; object type: Table space; specification: Object name
"RUNSTATS Utility (Table Spaces) with LISTDEF panel" on page 719	DB2 utility: RUNSTATS; object type: Table space; specification: LISTDEF
"RUNSTATS Utility (Indexes) panel" on page 714	DB2 utility: RUNSTATS; object type: Indexes; specification: Object name
"RUNSTATS Utility (Indexes) with LISTDEF panel" on page 716	DB2 utility: RUNSTATS; object type: Indexes; specification: LISTDEF
"UNLOAD Utility (Tables) "From" panel" on page 793	DB2 utility: UNLOAD; object type: Tables; specification: Object name
"UNLOAD Utility (Table Spaces) panel" on page 790	DB2 utility: UNLOAD; object type: Table spaces; specification: Object name
"UNLOAD Utility (Table Spaces) with LISTDEF panel" on page 791	DB2 utility: UNLOAD; object type: Table spaces; specification: LISTDEF

### Related tasks

- Chapter 11, "Generating batch JCL for DB2 utility jobs," on page 281

## DB2 View panel

You use the DB2 View panel to enter the name of an object to be edited (but without the ability to save any changes you make). You also use this panel to specify the name of a template that describes a logical view of the object.

### Panel and field definitions

Process	Options	Help
FM/DB2 (DFA2) DB2 View		
Specify the DB2 Object:		
Location . . . . .		Database . . . . . (optional)
Owner . . . . . FMNUSER	+	Table space . . . . . (optional)
Name . . . . . EMP	+	
Start position . . . . . 1		
Row count . . . . . 100	Number of rows to edit	
Template:		
Data set name . . . . .	'FMNUSER.TEMPLATE'	
Member . . . . .	SALARY	
Processing Options:		
Template usage	Enter "/", "A" always to select option	
3 1. Above	- Edit options	
- 2. Previous	- Edit template	
3. Generate from table	- Re-edit template	
4. Generate/Replace	- Create audit trail (*)	
Command ==>		
F1=Help	F2=Split	F3=Exit
F9=Swap	F10=Left	F11=Right
	F4=Expand	F7=Backward
	F12=Cancel	F8=Forward

**Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

**Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

**Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Start position** Indicates where FM/DB2 is to begin loading rows from the result table into the FM/DB2 editor.

If you specify a value greater than 1 (the default), FM/DB2 skips n-1 rows of the result table before loading rows into the FM/DB2 editor. If the **Row count** value is ALL (or 0 or \*), when the data is displayed you can scroll up to see the rows that were skipped. For a fixed **Row count** value, you cannot scroll backwards to see any skipped rows.

**Row count** Use this option to specify the maximum number of rows to be retrieved from DB2 and loaded into memory for the editor session. You can specify a value in the range 1–999999999 or, to indicate that all rows are to be retrieved, specify ALL, 0, or \*. The default value is 100.

An FM/DB2 editor session only applies to those rows fetched from DB2 and loaded into the editor. It does not apply to any unfetched rows. This means that the FIND and CHANGE primary commands only apply to those rows fetched from DB2.

**Note:** When you are editing large tables, use the value of 0 with caution as it is possible to encounter storage problems. The amount of storage required by the editor depends on both the number of rows retrieved, and the row length. Use the row selection criteria section of the template to limit the number of rows retrieved.

**Data set name** The name of a data set that contains, or will contain, the template. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

**Template usage**

The DB2 View panel provides four options for template processing:

**1. Above**

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

**2. Previous**

Uses the last (previously used) template for this table.

**3. Generate from table**

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

**4. Generate/Replace**

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select this option to change the options for the current editor session:

**Edit options**

Enter one of these:

**A "/" or an "A"**

Displays the first FM/DB2 editor options panel, prior to displaying the data for the DB2 object being processed.

**A number in the range 1–7**

Displays the *n*th FM/DB2 editor options panel directly where *n* is the value entered.

You can select the following options by entering a "/" or an "A":

**Edit template**

Select this option to edit the template before editing the data.

**Re-edit template**

Select this option to control the navigation between panels within the Edit dialog. This option controls the behavior of the F3 and F12 keys when pressed from within an Edit session.

**Create audit trail**

**Note:** "(\*)" is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

### Parent panels

- “Primary Option Menu panel” on page 670
- “Tables, Views and Aliases panel” on page 776

### Child panels

To display this panel...	Use/do this
“Table View panel” on page 770	No options selected and press Enter
“Editor Options (1 of 7) panel” on page 571	Select <b>Edit options</b>
“Column Selection/Edit panel” on page 419	Select <b>Edit template</b> or <b>Re-edit template</b>

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Selecting options on FM/DB2 panels” on page 28
- “Specifying a data set and a member name” on page 34
- “Where you can use templates” on page 8
- Chapter 3, “Working with templates,” on page 55
- “View and Edit options (options 1 and 2)” on page 48

## DB2I Primary Option Menu panel

You use the DB2I Primary Option Menu panel to interface to DB2 Interactive.

### Panel and field definitions

DB2I PRIMARY OPTION MENU		SSID: DFA2												
COMMAND ==>														
Select one of the following DB2 functions and press ENTER.														
1	SPUFI	(Process SQL statements)												
2	DCLGEN	(Generate SQL and source language declarations)												
3	PROGRAM PREPARATION	(Prepare a DB2 application program to run)												
4	PRECOMPILE	(Invoke DB2 precompiler)												
5	BIND/REBIND/FREE	(BIND, REBIND, or FREE plans or packages)												
6	RUN	(RUN an SQL program)												
7	DB2 COMMANDS	(Issue DB2 commands)												
8	UTILITIES	(Invoke DB2 utilities)												
D	DB2I DEFAULTS	(Set global parameters)												
X	EXIT	(Leave DB2I)												
<table border="0"> <tr> <td>F1=HELP</td> <td>F2=SPLIT</td> <td>F3=END</td> <td>F4=RETURN</td> <td>F5=RFIND</td> <td>F6=RCHANGE</td> </tr> <tr> <td>F7=UP</td> <td>F8=DOWN</td> <td>F9=SWAP</td> <td>F10=LEFT</td> <td>F11=RIGHT</td> <td>F12=RETRIEVE</td> </tr> </table>			F1=HELP	F2=SPLIT	F3=END	F4=RETURN	F5=RFIND	F6=RCHANGE	F7=UP	F8=DOWN	F9=SWAP	F10=LEFT	F11=RIGHT	F12=RETRIEVE
F1=HELP	F2=SPLIT	F3=END	F4=RETURN	F5=RFIND	F6=RCHANGE									
F7=UP	F8=DOWN	F9=SWAP	F10=LEFT	F11=RIGHT	F12=RETRIEVE									

### Parent panels

- “Primary Option Menu panel” on page 670

### Child panels

None.

### Related tasks

- Chapter 13, “Interfacing with DB2 Interactive,” on page 361

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### Details panels

These panels are:

- Database Details panel
- Table Space Details panel
- Table Details panel
- View Details panel
- Index Details panel
- Column Details panel
- Synonym Details panel
- Application Plan Details panel
- Package Details panel
- DBRM Details panel
- Distinct Type Details panel
- Function Details panel
- Procedure Details panel
- Trigger Details panel

FM/DB2 displays one of these panels when you specify the I line command against an object displayed in a list of DB2 objects.

### Child panels

None.

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### Display Row panel

FM/DB2 displays the Display Row panel if you use the ROW line command on any panel where you can use the ROW line command.

### Related tasks

Distinct Types panel

You use the Distinct Types panel to list the distinct types in the DB2 catalog.

Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSDATATYPES.

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Distinct TypesFormat TABL

Location:

SELSCHEMANAMEOWNERCREATEDBYSOURCESCHEMASOURCETYPEMETATYEX

-----#1---#3---#2---#4---#5---#6---#18---

\*\*\*\*Top of data\*\*\*\*

-----KEISTE2 DT1KEISTE2KEISTE2SYSIBMSYSIBMCHARDistinct Ty

-----KEISTEW CHAR80KEISTE2KEISTE2SYSIBMCHARDistinct Ty

\*\*\*\*End of data\*\*\*\*

Command ==>Scroll PAGE

F1=HelpF2=ZoomF3=ExitF4=CRetrieVF5=RFindF6=RChange

F7=UpF8=DownF9=SwapF10=LeftF11=RightF12=Cancel

Notes:

- 1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
- 2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.  
For a list of the line commands you can use on this panel, see Table 20 on page 252.

Parent panels

- “Object List Utility panel” on page 663
- “Schemas panel” on page 721
- “Functions panel” on page 632

Child panels

To display this panel...	Use/do this
See “Comment panels” on page 424	Line command COM
“Create Distinct Type panel” on page 451	Line command CR



## Distinct Types panel

To display this panel...	Use/do this
See "Drop panels"	Line command DR
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Privileges panels" on page 678	Line command P
Line command PS	
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Schemas panel" on page 721	Line command SCH
"Tables, Views and Aliases panel" on page 776	Line command T
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

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## Drop panels

These panels are:

- Drop Alias panel
- Drop Database panel
- Drop Distinct Type panel
- Drop Function panel
- Drop Index panel
- Drop Stored Procedure panel
- Drop Synonym Procedure panel
- Drop Table panel
- Drop Table Space panel
- Drop Trigger panel
- Drop View panel

FM/DB2 displays one of these panels when you specify the DR line command against an object displayed in a list of DB2 objects.

You use the appropriate Drop panel when you want to drop a DB2 object.

If you have checked the **Confirm object drop** option on the DB2 Object Functions panel, the Object List Utility panel, or the Explain Utilities panel, before dropping the DB2 object FM/DB2 displays the Drop Confirmation panel.

### Child panels

- "Drop Confirmation panel" on page 567

### Related tasks

- "Dropping DB2 objects" on page 191

## Drop Confirmation panel

FM/DB2 displays the Drop Confirmation panel when you have specified that you want to drop a DB2 object *and* you have checked the **Confirm object drop** option on the DB2 Object Functions panel or the Explain Utilities panel.

To proceed with the drop, press Enter; to cancel the drop, press the Cancel function key (F12).

## Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Drop Confirmation	
Table : "ADDRESS BOOK"			
Instruction:			
Press Enter to confirm drop.			
(The table will be dropped)			
(Warning: All dependent objects will also be dropped.)			
Press CANCEL or EXIT to cancel drop.			
Type SQL to generate the SQL for the drop statement only.			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

## Parent panels

- "DB2 Object Functions panel" on page 550
- "DB2 Object Functions panel" on page 550

## Child panels

None.

## Related tasks

- "Dropping DB2 objects" on page 191

## Related references

- "DB2 Object Functions panel" on page 550

### Edit/Execute SQL (Data Set) panel

You use the Edit/Execute SQL (Data Set) panel to edit and execute SQL statements contained in a data set.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFE2)		Edit/Execute SQL (Data Set)	
Input Data Set:			
Data set name . . .		_____	
Member . . . . .		_____	
Volume . . . . .		_____	
SELECT statement options:			
Row count . . . . .		100	Number of rows to browse
Processing Options:			
Execution options		Enter "/" to select option	
___ First column		/ Edit data set	
___ Last column		/ Execute SQL from data set	
___ Comment chars		- Re-edit data set after execution	
		- Create audit trail (*)	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

#### Data set name

The name of the data set or PDS member containing the SQL statements you want to edit. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

#### Member

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Volume serial

The serial number of the volume that contains the data set (if applicable).

#### Row count

Limits the rows loaded into the FM/DB2 editor when the SQL statement being processed is a SELECT statement. To load all rows for the SELECT statement, specify "\*" or ALL in this field.

#### First column

First data column. When generating SQL statements, FM/DB2 ignores any data to the left of this column number. If you do not specify a value, the statements are assumed to start in column 1.

#### Last column

Last data column. When generating SQL statements, FM/DB2 ignores any data to the right of this column number. If you do not specify a value, the statements are assumed to continue to the end of the data set record.

**Comment chars**

Use this option to specify one or two characters (for example "--") that denote records in the data set that are comment lines. If the specified characters appear as the first nonblank characters in a data set record (and that part of the statement is not in a quoted string), FM/DB2 ignores the record.

**Edit data set**

FM/DB2 starts an ISPF Edit session for the specified member or data set.

Use this option to use a library of SQL statements that you can maintain ready for execution.

To leave the Edit session, use the Exit function key (F3). Any changes you have made are saved.

**Execute SQL from data set**

FM/DB2 reads the data set or member, executes the SQL statements that it can extract, returning the results if applicable.

To execute the next SQL statement in the data set or member after FM/DB2 displays a result table or error panel, use the Exit function key (F3).

To return to the Edit and Execute SQL Statements from a Data Set panel without executing the statements, or at any time when an error or result panel has been displayed, use the Cancel function key (F12).

**Re-edit data set after execution**

After FM/DB2 has completed executing the statements in the data set, it restarts the Edit session (instead of returning to the Edit and Execute SQL Statements from a Data Set panel).

**Create audit trail**

**Note:** "(\*)" is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

**Parent panels**

- "SQL Prototyping, Execution and Analysis panel" on page 749

### Child panels

None.

### Related tasks

- “Editing and executing SQL statements from a data set” on page 357
- “Specifying a data set and a member name” on page 34
- “SAF-rule controlled auditing” on page 51

## Editor Options (1 of 7) panel

You use the seven Editor Options panels (1 to 7) to set your default editor options.

If you get to this panel from the Set Processing Options panel or from the action bar, these options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

Otherwise (if you get to this panel by selecting **Edit options** on the DB2 View panel or the DB2 Edit panel), then any changes you make to these options last only for the life of the current FM/DB2 editor session.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Editor Options (1 of 7)		Global Settings
Display Format: <div>             Initial display format             <div>               1. Previous               2. Table               3. Single             </div> </div>			
Editor CAPS Setting: <div>             Enter "/" to select option             / Initially ON           </div>			
Audit Option: <div>             Enter "/" to select option             / Create audit trail           </div>			
More Options: <div>             Enter "/" to select option             / Optimization, large table and data sampling options             / Table/Single format, prefix area and shadow options             / Key, index and export options             / Varying length and nullable column options             / Enter key and commit processing options             / Concurrency and locking options           </div>			
Command ==> <div>             F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap             F11=NxtPage F12=Cancel           </div>			

#### Initial display format

Use this section of the Editor Options panel to specify how editor panels appear at the start of an FM/DB2 editor session. Set this option to one of the following:

##### 1. Previous

The display format field (**Format**) on the View or Edit panel is prefilled with the value specified in the previous FM/DB2 editor session. This is the default setting.

##### 2. Table

The View or Edit panel is displayed in TABLE display format.

##### 3. Single

The View or Edit panel is displayed in SNGL display format.

#### Editor CAPS Setting

Indicates the initial setting of CAPS in an FM/DB2 editor session and whether you can change the setting.

##### Initially ON (fixed at installation)

CAPS set to ON. You cannot change the setting by means of the edit options.

## Editor Options (1 of 7) panel

### Initially OFF (fixed at installation)

CAPS set to OFF. You cannot change the setting by means of the edit options.

### Enter "/" to select option ... Initially ON

You can change the CAPS setting:

/        Set CAPS to ON

(blank)

Set CAPS to OFF

### Create audit trail

Determines if FM/DB2 generates an audit trail report of all successful modifications to DB2 data made during an Edit session:

/        Audit trail report generated.

(blank)

Audit trail report not generated.

### Notes:

1. The display of this option depends on whether SAF-rule controlled auditing is in effect and if auditing is to occur for the DB2 system. See "SAF-rule controlled auditing" on page 51.
2. The ability to change this option depends on installation options within the DB2 subsystem to which FM/DB2 is connected. The **Create an audit trail** option can be:
  - Permanently selected ("/" shown in the option). Audit trail reporting occurs for Edit processing. You cannot change the setting of the option.
  - Permanently deselected (blank shown in the option). Audit trail reporting does not occur for Edit processing. You cannot change the setting of the option.
  - Optional. Type a "/" in the option to generate audit reporting for all Edit processing; otherwise, type a space in the option to suppress audit trail reporting of any Edit processing.

At the end of your FM/DB2 session, the **Create an audit trail** option that you specify can be saved to your ISPF profile, or it can be set to blank (audit trail report not selected), depending on the installation options within the DB2 subsystem to which FM/DB2 is connected. The audit installation options for the currently connected DB2 system can be determined by selecting option 7 from the HELP pull down menu. When the auditing option is "OPTIONAL,OFF", the Create an audit trail option is always reset to blank (not selected) at the start of an FM/DB2 session. This means that, for an audit log to be written, auditing must be explicitly selected each time a new FM/DB2 session is started. Further, when this option is selected, there is no distinction between the global setting for the audit option, and any value entered using 'edit options' on the DB2 edit panel. For more information, see the *File Manager Customization Guide* or see your systems administrator.

### More options

These options control whether FM/DB2 displays the further editor options panels.

The FM/DB2 editor options are too numerous to fit on a single panel. To access additional options, select the fields in this section of the panel.

To navigate to the other options panels, press the PF key assigned to NxtPage (PF11 by default). To return to the previous panel, press the PF key assigned to PrvPage (PF10 by default).

You can omit the display of one or more of the additional options panels by de-selecting the appropriate field in the "More options" section of the panel.

**Optimization, large table and data sampling options**

Indicates whether you want the second Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the second Editor Options panel

(blank)

Do not display the second Editor Options panel

**Table/Single format, prefix area and shadow options**

Indicates whether you want the third Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the third Editor Options panel

(blank)

Do not display the third Editor Options panel

**Key, index and export options**

Indicates whether you want the fourth Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the fourth Editor Options panel

(blank)

Do not display the fourth Editor Options panel

**Varying length and nullable column options**

Indicates whether you want the fifth Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the fifth Editor Options panel

(blank)

Do not display the fifth Editor Options panel

**Enter key and commit processing options**

Indicates whether you want the sixth Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the sixth Editor Options panel

(blank)

Do not display the sixth Editor Options panel

**Concurrency and locking options**

Indicates whether you want the seventh Editor Options panel displayed when you navigate between Editor Options panels using the NxtPage function key (F11) or the PrvPage function key (F10).

/        Display the seventh Editor Options panel



## Editor Options (1 of 7) panel

(blank)

Do not display the seventh Editor Options panel

### Parent panels

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Edit panel” on page 544
- “DB2 Browse panel” on page 540
- “Action bar pull-down menu” on page 371

### Child panels

To display this panel...	Use/do this
“Editor Options (2 of 7) panel” on page 575	Press the NxtPage function key (F11)

### Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Selecting a display format” on page 118
- “Installation settings that affect CAPS” on page 139

Editor Options (2 of 7) panel

You use the Editor Options panel (2 of 7) to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Editor Options (2 of 7)Global Settings

Optimization Options:  
Enter "/" to select option  
\_ Use row count value  
  
Optimize for . . . 0 Rows

Large Table Options:  
Scrollable cursor type  
1 1. Insensitive  
\_ 2. Sensitive static

Data Sampling:  
Sampling type  
1 1. None  
\_ 2. Clustered sampling  
3. Random sampling  
  
Sampling limit . . 0

Clustered Sampling:  
Initial skip count 0  
Include count . . . 1  
Skip count . . . . 0  
  
Random Sampling:  
Sampling frequency 0.01  
Sampling seed . . . 0

Command ==>  
F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=Swap  
F10=PrvPageF11=NxtPageF12=Cancel

Use row count value

This option influences DB2 optimization.

When FM/DB2 prepares an SQL statement to access DB2 data, the number of rows in the result table may affect the method used by DB2 to produce the result table. In some cases, DB2 uses a different, more efficient, access method if it is known that only a few rows of an otherwise very large result table are required. This option enables an additional clause to be added to the SQL statement used by FM/DB2 when accessing DB2. The OPTIMIZE FOR *nnn* ROWS clause is documented in the *SQL Reference* manual for the appropriate version of DB2.

Enter a number in the range 0-999999 inclusive. This option and the **Use row count value** option combine in these ways:

Use row count value option selected

The value specified for **Row count** on the editor function entry panel is used, unless ALL (also 0, \*) is specified. In the latter case, the **Optimize for** value is considered. A zero value results in no a OPTIMIZE FOR clause. Any other value results in an OPTIMIZE FOR *nnn* ROWS clause being added. *nnn* is the value entered in the **Optimize for** option.

Use row count value option not selected

The **Optimize for** value is considered. A zero value results in a no OPTIMIZE FOR clause. Any other value results in an OPTIMIZE FOR *nnn* ROWS clause being added. *nnn* is the value entered in the **Optimize for** option

### Scrollable cursor type

Controls the access method used by FM/DB2 when processing large DB2 objects.

The FM/DB2 editor can operate in two modes. When there is sufficient memory available, FM/DB2 loads all of the rows for the result table into the editor. For DB2 objects with large result tables, FM/DB2 loads only a small number of rows initially and keeps only a small number of rows in memory during the editor session. This is achieved using DB2 scrollable cursors. The type of cursor specified can influence the behavior of the editor, particularly in edit mode.

#### 1. Insensitive

An insensitive cursor operates like a point-in-time snapshot of the result table. The number of rows in the result table is fixed, and is not changed by insert, update, or delete operations made to the table by other processes. FM/DB2 always uses an insensitive cursor in browse or view modes.

#### 2. Sensitive static

A sensitive static cursor also has a fixed number of rows in the result table, however delete and update operations made using the cursor are reflected the next time the row is processed by the cursor. In addition, update and delete operations made to the underlying table may cause the row to be no longer visible when processed by the cursor.

A sensitive static cursor is only used in edit mode.

### Sampling type

Controls whether data sampling is used.

Data sampling enables a subset of the rows in a DB2 object to be loaded into the editor. The possible values for this option are:

#### 1. None

All rows of the object are eligible for inclusion, this is the default.

#### 2. Clustered sampling

A specified number of rows are loaded into the editor.

#### 3. Random sampling

Each row of the object is considered for inclusion in the editor. A random number generator and a frequency are used to determine whether the row is actually loaded.

When data sampling is selected, you also need to consider these options:

#### Sampling limit

For both clustered and random sampling.

#### Initial skip count

For clustered sampling.

#### Include count

For clustered sampling.

#### Skip count

For clustered sampling.

#### Sampling frequency

For random sampling.

#### Sampling seed

For random sampling.

**Clustered Sampling**

Clustered data sampling divides the data into consecutive groups of rows. The number of rows in each group is the sum of these values:

- Initial skip count
- Include count
- (Final) skip count

Within each group, the number of rows specified in **Initial skip count** are ignored. The number of rows in **Include count** are sampled (added to the editor session). Finally, the number of rows specified in the **Skip count** are ignored. Sampling then recommences with the next group of rows.

These options apply only to clustered data sampling. Any values specified are ignored when clustered data sampling is not in use.

**Initial skip count**

Controls how many rows are initially skipped in each clustered sample group. It can be zero, or a positive integer.

**Include count**

Controls how many rows are sampled in each clustered sample group. It must be a positive integer.

**Skip count**

Controls how many rows are skipped at the end of each clustered sample group. It can be zero, or a positive integer.

**Random Sampling**

Random data sampling uses a random number generator, together with the sampling frequency to determine whether a row is included in the sample. These options apply only to random data sampling. Any values specified are ignored when random data sampling is not in use.

**Sampling frequency**

Controls the sampling frequency for random data sampling.

Enter a value in the range 0.000000001 to 0.999999999 inclusive. To sample approximately 10% of rows enter a frequency of 0.1. To sample approximately 1% of rows enter a frequency of 0.01.

**Sampling seed**

A value used to initiate the random number generator used for random data sampling.

Enter a integer in the range 0 to 2147483647 inclusive. A zero value indicates that FM/DB2 should use the system clock to initiate the random number generator. Specify a zero value, when repeatability of data samples is not required. Any non-zero value used to initiate the random number generator ensures that data samples are repeatable, given the same table and other input conditions.

**Parent panels**

You can go to the Editor Options (1 of 7) panel from the “parent” panels shown below. To go to the Editor Options (2 of 7) panel, you then press the NxtPage function key (F11).

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544

## Editor Options (2 of 7) panel

- “Action bar pull-down menu” on page 371

You can only display the Editor Options (2 of 7) panel if the **Optimization, large table and data sampling options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (1 of 7) panel” on page 571	Press the PrvPage function key (F10)
“Editor Options (3 of 7) panel” on page 579	Press the NxtPage function key (F11)

## Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Data sampling” on page 133
- “Large table options” on page 133

Editor Options (3 of 7) panel

You use the Editor Options (3 of 7 panel) to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Editor Options (3 of 7)Global Settings

Table Display Format:  
Enter "/" to select option  
/ Show data type  
/ Show scale line  
/ Show column number

Single Display Format:  
Enter "/" to select option  
Show data type  
/ Show keys, indexes  
Show column number  
Left justify numerics

Prefix Area:  
Prefix length . . . A (A,6,7,8,9)  
  
Enter "/" to select option  
/ Display prefix area  
Show prefix area on the right  
Show SQLCODE

Shadow Lines:  
Enter "/" to select option  
/ Show excluded shadow lines

Command ==>  
F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=Swap  
F10=PrvPageF11=NxtPageF12=Cancel

Table Display Format Options

Use this section of the Editor Options panel to specify the information you want displayed in table display format (TABL):

Show data type

Indicates if you want FM/DB2 to display data type information:

/ Show the data type for each column displayed in table display format.

FM/DB2 displays an additional line (immediately below the line containing the column reference numbers, if displayed) showing the data type for each column.

(blank)

Do not show data type information. This is the default action.

Show scale line

Indicates if you want FM/DB2 to display scale line information:

/ Show a scale line for each column displayed in table display format.

The scale shows the left and right boundary of the data for the column and, for non-numeric data types, positioning information.

## Editor Options (3 of 7) panel

FM/DB2 displays the scale line immediately above the first line of data. The scale line also displays information about primary and foreign keys, and unique indexes.

**(blank)**

Do not show scale line information. This is the default setting.

### Show column number

Indicates if you want FM/DB2 to display column number information.

/ Show the column number (as defined in the DB2 catalog) for each column displayed in table display format.

FM/DB2 displays the column numbers immediately below the line containing the column names.

**(blank)**

Do not show column number information. This is the default setting.

## Prefix Area

These options controls the prefix area in an FM/DB2 editor session.

### Prefix length

Controls the width of the prefix area in an FM/DB2 editor session.

The FM/DB2 editor can display a prefix area on either the left, or the right of the screen. The width of the prefix area can be 6, 7, 8 or 9 characters. The default is 6, specified by typing A in the field. You can type a different value to set the width of the prefix area to your preference. Note that the prefix areas does not appear in an FM/DB2 browse session, and only appears in an FM/DB2 view or edit session when the **Display prefix area** option is selected. You can alter the prefix length from within an editor session using the PREFIX editor primary command.

### Display prefix area

Controls whether the prefix area is displayed in an FM/DB2 edit or view session.

The FM/DB2 editor can optionally display a prefix area, where prefix commands may be entered.

/ Display the prefix area.

**(blank)**

Do not display the prefix area.

You can turn the prefix area on or off from within an FM/DB2 editor session (edit and view only) by issuing the PREFIX editor primary command.

### Show prefix area on the right

Controls the location of the FM/DB2 editor's prefix area.

The FM/DB2 editor can display the prefix area on either the left, or the right of the screen.

/ Display the prefix area on the right of the screen.

**(blank)**

Display the prefix area on the left of the screen.

**Notes:**

1. The prefix area does not appear in an FM/DB2 browse session.
2. This option has no effect unless the **Display prefix area** option is selected.
3. You can move the prefix area, from within the FM/DB2 editor, by issuing the PREFIX LEFT or PREFIX RIGHT editor primary commands.

**Show SQLCODE**

Controls whether the FM/DB2 editor shows the SQLCODE in the prefix area, when an insert, update, or delete operation for a row fails.

FM/DB2 processes changes to data in the edit session one row at a time. If DB2 returns an error when the change is presented to DB2, FM/DB2 shows either =ERR or an SQLCODE in the prefix area for the row.

/ FM/DB2 editor shows the SQLCODE in the prefix area.

**(blank)**

FM/DB2 editor shows the =ERR in the prefix area.

**Single display Format Options**

Use this section of the Editor Options panel to specify the information you want displayed in single display format (SNGL).

**Show data type**

Indicates if you want FM/DB2 to display data type information:

/ Show the data type for each column displayed in single display format.

FM/DB2 displays an additional column (immediately to the right of the column containing the name of the column) showing the data type for each column.

**Note:** When you are displaying data in single display mode, you can toggle the display of data type information by using the TYPE primary command.

**(blank)**

Do not show data type information. This is the default setting.

**Show keys, indexes**

Indicates if you want FM/DB2 to display information showing if column is a part of a key or index:

/ Show an additional column, 4 characters wide, indicating if the column is part of a key or index.

**Note:** When you are displaying data in single display mode, you can toggle the display of index information by using the INDEXINF primary command.

**(blank)**

Do not show key or index information. This is the default setting.



## Editor Options (3 of 7) panel

### Show column number

Indicates if you want FM/DB2 to display column number information:

/      Show the column number (as defined in the DB2 catalog) for each column displayed in single display format.

FM/DB2 displays an additional column (the leftmost on the panel) containing the column numbers.

#### Notes:

1. When you are displaying data in single display mode, you can toggle the display of column numbers by using the REFS primary command.
2. In single display mode, when FM/DB2 displays the column number, it also displays the column heading "Rdf" (as the second column heading from the left). The "Rdf" column is unused by FM/DB2 and can be ignored.

(blank)

Do not show column number information. This is the default setting.

### Left justify numerics

Indicates if you want FM/DB2 to display numeric data left-justified, in single display format:

/      Data for numeric columns is displayed left-justified. That is, the first characters of any numbers are shown at the extreme left of the column.

(blank)

Data for numeric columns is displayed right-justified. That is, the data is displayed so that the last character of each number is shown at the extreme right of the column.

### Show excluded shadow lines

Controls whether a shadow line, which indicates one or more excluded rows, is displayed.

The FM/DB2 editor allows rows to be excluded from display, using the EXCLUDE editor primary command, or the X (and its variations) editor prefix commands. Like the ISPF editor, excluded rows are shown using a shadow line. Each shadow line marks the location of one or more contiguous excluded rows. However, unlike the ISPF editor, the excluded shadow lines can be hidden from display by de-selecting this option.

/      Display excluded shadow lines.

(blank)

Do not display excluded shadow lines.

You can change the display status of excluded rows, from within the FM/DB2 editor, by issuing the SHADOW X OFF or SHADOW X ON commands.

## Parent panels

You can go to the Editor Options (1 of 7) panel from the "parent" panels shown below. To go to the Editor Options (3 of 7) panel, you then press the NxtPage function key (F11) twice.

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- “Action bar pull-down menu” on page 371

You can only display the Editor Options (3 of 7) panel if the **Table/Single format, prefix area and shadow options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (2 of 7) panel” on page 575	Press the PrvPage function key (F10)
“Editor Options (4 of 7) panel” on page 584	Press the NxtPage function key (F11)

### RELATED CONCEPTS

- “TABL display format” on page 119
- “SNGL display format” on page 121

## Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Selecting a display format” on page 118
- “Managing the prefix area” on page 129
- “Showing or hiding excluded rows” on page 128

### Editor Options (4 of 7) panel

You use the Editor Options (4 of 7) panel to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Editor Options (4 of 7)		Global Settings
Primary and Foreign Keys, Indexes: Enter "/" to select option / Allow updates to primary key / Show primary key / Show foreign key / Show index indicators			
Export Command: Enter "/" to select option _ Show export options			
Command ==> F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap F10=PrvPage    F12=Cancel			

#### Allow updates to primary key

Indicates if you can edit the primary key information:

/ Changes to primary key information allowed.

(blank)

Changes to primary key information not allowed.

#### Show primary key

Indicates if you want FM/DB2 to display primary key information:

/ Include information showing the columns that comprise the primary key for the table.

In table display format, FM/DB2 shows the primary key information only if you have also specified that the scale line is to be displayed (see page on page 579). The scale line shows a "P" in the first position of each column that forms part of the table's primary key.

In single display format, if the **Show keys, indexes** option is selected (see page on page 581), FM/DB2 displays an additional column, immediately to the left of the **Column name** column (and immediately to the right of the **Column number** column, if displayed). This column is 4 characters wide. The presence of a "P" in the first position of the column indicates that the column is part of the table's primary key.

(blank)

Do not include information showing the columns that comprise the primary key for the table. This is the default setting.

#### Show foreign key

Indicates if you want FM/DB2 to display foreign key information:

/ Include information showing the columns that are part of a foreign key.

In table display format, FM/DB2 shows the foreign key information only if you have also specified that the scale line is to be displayed (see page on page 579). The scale line shows an “F” in the fourth position of each column that forms part of a foreign key.

In single display format, if the **Show keys, indexes** option is selected (see page on page 581), FM/DB2 displays an additional column, immediately to the left of the **Column name** column (and immediately to the right of the **Column number** column, if displayed). This column is 4 characters wide. The presence of an “F” in the fourth position of the column indicates that the column is part of a foreign key.

(blank)

Do not include information showing the columns that are part of a foreign key. This is the default setting.

#### Notes:

1. For tables with multiple foreign keys defined, the indicator character cannot be used to distinguish between columns that are part of the same foreign key or part of different foreign keys.
2. The foreign key information is only displayed if it is stored in the template. If the **Retrieve foreign key information when building templates** system option was not selected when the template for the object was built, no foreign key indicators are displayed.

#### Show index indicators

Indicates if you want FM/DB2 to display index information:

/ Include information showing the columns that are part of an index.

In table display format, FM/DB2 shows the index information only if you have also specified that the scale line is to be displayed (see page on page 579). In the second position of the scale line, a “U” is displayed for each column that forms part of a unique index. In the third position of the scale line, an “N” is displayed for each column that forms part of a non-unique index. See “Table Edit panel” on page 761.

In single display format, if the **Show keys, indexes** option is selected (see page on page 581), FM/DB2 displays an additional column, immediately to the left of the **Column name** column (and immediately to the right of the **Column number** column, if displayed). This column is 4 characters wide. In the second position of this column, a “U” is displayed for each column that

## Editor Options (4 of 7) panel

forms part of a unique index. In the third position of this column, an “N” is displayed for each column that forms part of a non-unique index.

(blank)

Do not include information showing the columns that are part of an index. This is the default setting.

**Note:** For tables with multiple foreign keys defined, the indicator character cannot be used to distinguish between columns that are part of the same index or part of different indexes.

### Show export options

The EXPORT primary command can be issued in an FM/DB2 editor session to export data to a external file. Issuing the EXPORT command can optionally display the first of the export options panels, where you can specify the data format for the export operation.

/ The EXPORT primary command dialog displays the first of the export options panels.

(blank)

The EXPORT primary command dialog does not display the first of the export options panels.

## Parent panels

You can go to the Editor Options (1 of 7) panel from the “parent” panels shown below. To go to the Editor Options (4 of 7) panel, you then press the NxtPage function key (F11) three times.

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- “Action bar pull-down menu” on page 371

You can only display the Editor Options (4 of 7) panel if the **Key, index and export options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (3 of 7) panel” on page 579	Press the PrvPage function key (F10)
“Editor Options (5 of 7) panel” on page 587	Press the NxtPage function key (F11)

## Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Editing related tables” on page 150
- “Copying data to a VSAM or QSAM file” on page 223

## Editor Options (5 of 7) panel

You use the Editor Options (5 of 7) panel to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
-----------------	-----------------	-------------------	--------------

---

FM/DB2 (DFA2)

Editor Options (5 of 7)

Global Settings

Varying Length Columns:  
Enter "/" to select option  
/ Remove trailing spaces  
/ Show end of string

String Delimiters:  
Input . . . . . #  
Display . . . . . <

Columns that allow Null Values:  
Enter "/" to select option  
\_ Convert spaces to DB2 null

Null Column Indicators:  
Input . . . . . @  
Display . . . . . \_

Command ==>

F1=Help

F2=Split

F3=Exit

F7=Backward

F8=Forward

F9=Swap

F10=PrvPage

F12=Cancel

#### Remove trailing spaces

This option only applies to the processing of varying-length (VARCHAR) input fields. When you enter a value that is less than the maximum length for the column, determines if FM/DB2 removes trailing spaces:

/ Remove trailing spaces and store the specified value using the minimum length string.

(blank) Do not remove trailing spaces.

#### Show end of string

This option only applies to the processing of varying-length (VARCHAR) input fields. Specifies if the end of a varying-length string is to be indicated using the delimiter specified in the **String delimiters: Display** option:

/ Show the end of a varying-length string using the delimiter specified in the **String delimiters: Display** option. If the string is of maximum length, the delimiter character is not shown.

(blank) Do not show the end of a varying-length string.

#### String Delimiters

These options control the end of string delimiter when entering and displaying data in a varying column.

## Editor Options (5 of 7) panel

**Input** This option only applies to the processing of varying-length (VARCHAR) input fields.

For input, FM/DB2 sets the end-of-string delimiter character to this value. If you enter data that requires one or more trailing spaces in a varying-length field, you can use this option to provide a character of your choice to indicate the end of the string. The default value is the number sign (#).

Valid values: any character.

### Display

This option only applies to the processing of varying-length (VARCHAR) input fields. FM/DB2 sets the end-of-string delimiter character, for display, to a this value. If you have also selected **Show end of string**, FM/DB2 displays the value in the field, terminated with the delimiter character you have selected. If the column is of maximum length, the delimiter character is not shown. The default value is the "less than" sign (<).

Valid values: any character.

### Convert spaces to DB2 null

When any column that allows null values is changed so that it contains only spaces, the value of the column is set to null.

If the column is defined as NOT NULL, the column remains unchanged.

### Null Column Indicators

These options allow the specification of characters to represent the DB2 null value when entering and displaying data.

**Input** A single character which, when entered in the first byte of an input field, causes FM/DB2 to update the value for the column to NULL. The default value is the "at." symbol (@).

Valid values: any character

If the column allows null values, when you enter this character in the first byte of the input field, FM/DB2 updates the value for the column to NULL. Any non-blank character following the indicator invalidates the action.

If the column is defined as NOT NULL, FM/DB2 treats the character in the same way as any other input character.

### Display

A single character indicating that the column contains a null value (as opposed to, for example, blanks). The default value is the "¢" symbol.

Valid values: any character

## Parent panels

You can go to the Editor Options (1 of 7) panel from the "parent" panels shown below. To go to the Editor Options (5 of 7) panel, you then press the NxtPage function key (F11) four times.

- "Set Processing Options panel" on page 738
- "DB2 View panel" on page 559
- "DB2 Browse panel" on page 540
- "DB2 Edit panel" on page 544

- “Action bar pull-down menu” on page 371

You can only display the Editor Options (5 of 7) panel if the **Varying length and nullable column options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (4 of 7) panel” on page 584	Press the PrvPage function key (F10)
“Editor Options (6 of 7) panel” on page 590	Press the NxtPage function key (F11)

## Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Varying-length columns” on page 138
- “Null values and VARCHAR processing” on page 137



## Editor Options (6 of 7) panel

You use the Editor Options (6 of 7) panel to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Editor Options (6 of 7)		Global Settings
Enter Key Processing:			
Enter key usage			
1 1. No action			
2. Save data			
3. Save data and commit changes			
Commit Options:			
Enter "/" to select option			
/ Commit when save issued			
- Commit when no save errors			
Auto Commit (Changes):			
Auto-commit count . . . . . 0			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F12=Cancel		

#### Enter key usage

Set this option to one of the following:

##### 1. No action

This is the default setting. No special action is taken when the Enter key is pressed and no other operations are pending. Any changes made during an Edit session are only presented to DB2 when an explicit SAVE command is issued, or at the end of the Edit session.

##### 2. Save data

All pending changes are submitted to DB2 for processing whenever the Enter key is pressed (and no other operations are pending). Successful changes are not committed until the end of the Edit session, unless the **Commit changes when Save issued** option is selected. Rows for which there was an unsuccessful change are marked with "=ERR", "ERR R", or the SQLCODE in the prefix area (see **Show SQLCODE** on page 581).

##### 3. Save data and commit changes

All pending changes are submitted to DB2 for processing whenever the Enter key is pressed (and no other operations are pending). Rows for which there was an unsuccessful change are marked with "=ERR", "ERR R", or the SQLCODE in the prefix area (see **Show SQLCODE in prefix area** on page 581). FM/DB2 issues an explicit DB2 commit at the end of the save process; however, this only occurs if:

- No save errors were encountered, or

- **Commit when no save errors** is turned off.

Committing the changes to DB2 is an irrevocable process.

#### Commit when save issued

This is the default action. FM/DB2 issues an explicit DB2 commit at the end of the save process; however, this only occurs if:

- No save errors were encountered, or
- **Commit when no save errors** is turned off.

Note that the Enter key processing options **Save data** and **Save data and commit changes** behave as though an explicit save command had been issued when the Enter key was pressed.

#### Commit when no save errors

The default action for this option is to always commit at the end of the save process. When this option is selected, FM/DB2 only issues an explicit DB2 commit if there were no errors encountered during the save process.

Committing the changes to DB2 is an irrevocable process.

#### Auto-commit count

The default action, indicated by a zero value, is that no automatic DB2 commit points are during the editor SAVE process. When a positive value is specified, FM/DB2 issues an automatic DB2 commit point whenever there have been *value* successful changes during the SAVE process (where *value* is the value specified for **Auto-commit count**). Specifying a non-zero value can cause multiple DB2 commit points to be issued during the SAVE process.

Example:

With an auto-commit count of 2 and 11 successful changes processed during a SAVE process, five DB2 commit points are issued. The changes for the last row processed remain uncommitted.

## Parent panels

You can go to the Editor Options (1 of 7) panel from the “parent” panels shown below. To go to the Editor Options (6 of 6) panel, you then press the `NxtPage` function key (F11) five times.

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- “Action bar pull-down menu” on page 371

You can only display the Editor Options (6 of 7) panel if the **Enter key and commit processing options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (5 of 7) panel” on page 587	Press the <code>PrvPage</code> function key (F10)
“Editor Options (7 of 7) panel” on page 593	Press the <code>NxtPage</code> function key (F11)

### Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99
- “Ending an FM/DB2 editor session” on page 102

Editor Options (7 of 7) panel

You use the Editor Options (7 of 7) panel to set your default editor options.

**Note:** See the description for the Editor Options (1 of 7) panel on page 571 about how long any changes you make to these options last.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Editor Options (7 of 7)Global Settings

Concurrency Options:  
Enter "/" to select option  
7Commit after data fetch

SQL Cursor Concurrency Options:  
Concurrency  
10. Uncommitted read  
11. No with clause  
2. Cursor stability  
3. Read stability  
4. Read stability keep locks  
5. Repeatable read  
6. Repeatable read keep locks

Edit Locking Option:  
Locking  
11. None  
2. Share mode  
3. Exclusive mode

Keep locks option  
11. Use/Keep share locks  
2. Use/Keep update locks  
3. Use/Keep exclusive locks

Command ==>  
F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=Swap  
F10=PrvPageF12=Cancel

Concurrency options

For a detailed explanation about this subject, refer to the DB2 UDB for z/OS Administration Guide.

Concurrency options affect the way DB2 takes row and page locks for data in a DB2 table. Locking options affect the way DB2 takes table locks. When a table locking option is specified, it overrides any concurrency option.

In general terms, specifying a higher value for the concurrency option reduces the likelihood of deadlocks when editing an object, at the expense of other users' ability to access and change data.

FM/DB2 provides options that can minimize DB2 locking, and the duration of the DB2 locks taken, when FM/DB2 accesses DB2 and retrieves data for an FM/DB2 editor session.

FM/DB2 also provides options to lock the table to prevent other users from either updating or reading data. The locking options should be used with caution.

Note that both the concurrency and table locking options only apply to the initial fetch of data from DB2. If either of the commit options **Commit changes when save issued** or **Commit changes when no save errors** is specified, each commit point releases any locks held by DB2 against the table. For more information, see the description about **Enter Key Processing, Commit Options** in "Editor Options (6 of 7) panel" on page 590.

After each commit point, FM/DB2 re-locks the table if a table-locking option has been specified; however, other DB2 users may access the table between the time of the commit point and FM/DB2 re-locking the table.

### Notes:

1. Use table locking options with caution.
2. For the table locking option to be effective, the DB2 object must be a table. It is not possible to lock a view.
3. Any concurrency option applies to the initial fetch of data from DB2 only.
4. Any concurrency or locking option persists only until the next commit point. See below for more information.
5. Set the **Concurrency** option to 0.

FM/DB2 provides options for accessing data in “read-only” mode, and for reducing the life of the DB2 locks taken when data is retrieved from DB2. It also provides control over the locking mechanism used when data is retrieved from DB2.

### Read-only access

If you select this option, FM/DB2 accesses data from DB2 in “read-only” mode, by adding the FOR FETCH ONLY clause to the SQL statement used to retrieve data from DB2. By default, this option is not selected.

Selecting this option does not prevent edit operations from occurring.

Note that, for an FM/DB2 Browse session, the FOR FETCH ONLY clause is always added to the SQL statement used to retrieve data from DB2.

### Commit after data fetch

If you select this option, FM/DB2 issues an explicit COMMIT once the data from the FM/DB2 Edit session has been retrieved from DB2. This has the effect of releasing all DB2 locks taken during the retrieval of data for the FM/DB2 Edit session. It also releases any explicit table locks taken when a locking option of shared or exclusive is specified. By default, this option is not selected.

This option is recommended in high concurrency environments, where it is important to minimize the duration of any DB2 locks held.

Selecting this option does not prevent edit operations from occurring; however, it increases the likelihood of errors when changed data is presented to DB2 for validation. This is because other processes are free to change the DB2 data for which a copy is stored in the FM/DB2 Edit session. Therefore, when a change made in the FM/DB2 Edit session is presented to DB2, the original data might have changed, resulting in various SQL errors.

Note that, for an FM/DB2 Browse session, FM/DB2 always issues an EXPLICIT commit once the data for the Browse session has been retrieved from DB2.

### SQL Cursor Concurrency Options (Concurrency)

FM/DB2 can add a WITH clause to the SQL statement used to fetch data from DB2. When a WITH clause is specified, DB2 takes locks (of varying

levels) against either rows or pages within the table, as the data is accessed. The following options are possible.

**0. Uncommitted read**

DB2 locking is disabled. The data retrieved from DB2 may be inconsistent if another process is rolled back after the data access. Use this option in a high concurrency environment.

**1. No with clause**

This is the default value and recommended for most application programs. FM/DB2 does not add a WITH clause to the SELECT statement for the table. Any rows retrieved by FM/DB2 initially have a S(hare) lock. With this option it is possible that other processes can update the table you are editing.

**2. Cursor stability**

A row or page lock is held only long enough for the cursor to move to another row or page.

**3. Read stability**

A row or page lock is held for rows or pages that are read by the editor at least until the next commit point.

**4. Read stability keep locks**

A row or page lock is held for rows or pages that are read by the editor at least until the next commit point. The **Read stability** option takes an "S" or "U" lock, while this option takes an "X" lock on affected rows or pages.

**5. Repeatable read**

A row or page lock is held for all accessed rows, qualifying or not, at least until the next commit point. FM/DB2 can return to a previously read page and read the same row again, and the data is not changed and no new rows are inserted.

**6. Repeatable read keep locks**

This option is similar to the **Repeatable read** option, except that FM/DB2 takes an "X" lock, rather than a "S" or "U" lock.

**SQL Cursor Concurrency Options (Keep locks option)**

FM/DB2 can add a WITH clause to the SQL statement used to fetch data from DB2. When a WITH clause is specified, DB2 takes locks (of varying levels) against either rows or pages within the table, as the data is accessed. The following options are possible.

**1. Use/Keep share locks**

FM/DB2 does not issue an explicit table lock for the object being edited. Locking of rows and pages within the object is managed by DB2 according to FM/DB2 concurrency options and DB2 installation and object definition options. This is the default setting.

**2. Use/Keep update locks**

FM/DB2 issues a LOCK TABLE IN SHARE MODE statement before reading the data from DB2. This restricts all other users to read-only operations on the object. If either the Enter key option **Save data and commit changes**, or the **Commit changes when SAVE issued** option is selected, any commit point take during the Edit session releases the table lock. FM/DB2 re-issues the lock immediately after the commit point. However, other processes can access the table between the time of the commit point and FM/DB2 re-locking the table.

## Editor Options (7 of 7) panel

### 3. Use/Keep exclusive locks

FM/DB2 issues a LOCK TABLE IN EXCLUSIVE MODE statement before reading the data from DB2. This prevents all other users from accessing the object, unless the other process is running with an isolation level of uncommitted read. If either the Enter key option **Save data and commit changes**, or the **Commit changes when SAVE issued** option is selected, any commit point take during the Edit session releases the table lock. FM/DB2 re-issues the lock immediately after the commit point. However, other processes can access the table between the time of the commit point and FM/DB2 re-locking the table.

## Parent panels

You can go to the Editor Options (1 of 7) panel from the “parent” panels shown below. To go to the Editor Options (7 of 7) panel, you then press the NxtPage function key (F11) six times.

- “Set Processing Options panel” on page 738
- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- “Action bar pull-down menu” on page 371

You can only display the Editor Options (7 of 7) panel if the **Concurrency and locking options** option on the Editor Options (1 of 7) panel is selected.

## Child panels

To display this panel...	Use/do this
“Editor Options (6 of 7) panel” on page 590	Press the PrvPage function key (F10)

## Related tasks

- “View and Edit options (options 1 and 2)” on page 48
- “Setting default processing options” on page 43
- “Setting options for the current FM/DB2 editor session” on page 99

## Enter and Execute DB2 Commands panel

You use the Enter and Execute DB2 Commands panel to enter DB2 commands and view the output returned by DB2.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFE2)Enter and Execute DB2 Commands

DB2 command options:

Line count . . . . .Number of lines of output

DB2 Command:

Command ==>F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=SwapScrollPAGEF12=Cancel

**Line count** Only applies to DISPLAY THREAD and DISPLAY DATABASE commands. This figure controls the number of lines to be returned and is included in the LIMIT parameter for the command which has been entered.

**DB2 Command** The DB2 command to be issued. This command may or may not be prefixed by a hyphen (-). If it is not prefixed by a "-", a "-" is added.

### Parent panels

- “Primary Option Menu panel” on page 670
- Any panel where the Process pull-down menu is available.

### Child panels

None.

### Related tasks

- “Issuing DB2 commands from within an FM/DB2 session” on page 157



### Enter, Execute and Explain SQL Statements panel

You use the Enter, Execute and Explain SQL Statements panel to enter freeform SQL statements, run freeform SQL statements, or obtain information about an SQL statement.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2) Enter, Execute and Explain SQL			
SELECT Options:		EXPLAIN Options:	
Row count . . . . . ALL		Query number . . .	
Enter "/" to select option		Audit Option:	
/ Show results		Enter "/" to select option	
		_ Create audit trail (*)	
SQL statement:			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Row count** Limits the rows loaded into the FM/DB2 editor when the SQL statement being processed is a SELECT statement. To load all rows for the SELECT statement, specify "\*" or ALL in this field.

**Query number** A number to help identify the results of this explanation. If you leave this field blank, FM/DB2 generates a query number for you in the format YYYYMMDDss, where ss is a sequence number.

**Show results** If selected, FM/DB2 attempts to display the relevant rows that DB2 has inserted in the plan table as a result of explaining the statement.

#### Create audit trail

**Note:** "(" is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement

cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO usersids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

### SQL statement

Freeform SQL statement entry area. If you want to enter more than one SQL statement, you must separate the statements with a semicolon (;).

## Parent panels

- “SQL Prototyping, Execution and Analysis panel” on page 749

## Child panels

None.

## Related tasks

- “Entering SQL statements” on page 354
- “Executing SQL statements” on page 355
- “Explaining SQL” on page 356
- “SAF-rule controlled auditing” on page 51

## Related references

- “DOWN primary command” on page 815
- “EXECUTE primary command” on page 821
- “EXPLAIN primary command” on page 822
- “SQL primary command” on page 854
- “UP primary command” on page 858

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## EXPLAIN Interpretation panel

FM/DB2 displays the EXPLAIN Interpretation panel if you use the I line command against an item listed on:

- The “Plan Table Rows panel” on page 668, or
- The “Statement Table Rows panel” on page 750

### Explain Utilities panel

You use the Explain Utilities panel to select functions to support the use of the DB2 EXPLAIN SQL statement.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Explain Utilities	
L List plan table rows C Create plan table CF Create function table CS Create statement table CX Create plan table index			
D Drop plan table DF Drop function table DS Drop statement table			
Table Identification Criteria:			
Owner . . . . .	_____	+	
Database . . . . .	_____		
Table space . . . . .	_____		
Row Identification Criteria:			
Plan name . . . . .	_____		
DBRM/package name . . . . .	_____	+	
Collection ID . . . . .	_____	+	
Enter "/" to select option			
Confirm object drop			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

- L** List a plan table. FM/DB2 displays the rows of the specified plan table. If you leave the **Plan table owner** field blank, FM/DB2 uses your current SQL ID. You can qualify the rows by **Plan name**, **DBRM/package name**, and **Collection ID**. You can list any related statement table and function table rows, if they exist, using line commands from the plan table. The table name for a plan table is always PLAN\_TABLE.
- C** Create a plan table. A plan table is needed for the SQL EXPLAIN statement. If you leave the **Plan table owner** field blank, FM/DB2 uses your current SQL ID. You can optionally use the **Database** and **Table space** fields to define the database and table space to be used when the plan table is created. The table name for a plan table is always PLAN\_TABLE.
- CF** Create a function table, where the SQL EXPLAIN statement can store information about how function references are resolved. FM/DB2 uses the **Plan table owner** field (or, if it is left blank, your current SQL ID) as the owner of the function table. The table name for a function table is always DSN\_FUNCTION\_TABLE.
- CS** Create a statement table, where the SQL EXPLAIN statement can store the estimated costs for an SQL statement. FM/DB2 uses the **Plan table owner** field (or, if it is left blank, your current SQL ID) as the owner of the statement table. The table name for a statement table is always DSN\_STATEMNT\_TABLE.
- CX** Create an index on the plan table for the DB2 optimizer. An index on the plan table is recommended if you use DB2 optimizer hints.
- U** Upgrade a plan table to the current DB2 version. Use this option to add columns so that the plan table is at the level that DB2 supports.

- D Drop plan table.
- DF Drop function table.
- DS Drop statement table.
- Plan table owner  
See function descriptions below.
- Database  
See function descriptions below.
- Table space  
See function descriptions below.
- Plan name  
See function descriptions below.
- DBRM/package name  
See function descriptions below.
- Collection ID  
See function descriptions below.
- Confirm object drop  
Indicates if you want FM/DB2 to display a confirmation panel each time you enter a DR(op) command against an object

Parent panels

- “SQL Prototyping, Execution and Analysis panel” on page 749

Child panels

To display this panel...	Use/do this
“Plan Table Rows panel” on page 668	Function L
“Create Index panel” on page 464	Function CX

Related tasks

- “Managing tables used by SQL explain” on page 358

## Export Options (1 of 3) panel

You use the Export Options (1 of 3) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Export Options - (1 of 3)	Global Settings	
Data Format:			
1	1. FM/DB2 (SQLDA) format	Enter "/" to select option	
2	2. DB2 UNLOAD format	/ Native unicode processing	
3	3. DSNTIAUL format		
4	4. User defined		
5	5. Delimited variables (CSV)		
Execution options:			
Select option			
2	1. Online	Enter "/" to select option	
2	2. Batch	-->	Batch data set creation
3	3. Batch, using DB2 UNLOAD	-->	Edit DB2 UNLOAD options
More Options:			
Enter "/" to select option			
/	Null indicators / CSV options	(For user-defined, CSV data formats)	
-	Data type format	(For user-defined data format)	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F11=NxtPage	F12=Cancel		

Figure 103. Export Options (1 of 3) panel

#### Data format

The format in which Export Utility unloads data:

##### FM/DB2 (SQLDA) format

DB2 internal format.

##### DB2 unload format

DB2 external (or unload) format.

##### DSNTIAUL format

DB2 DSNTIAUL unload format. This is the format used by the DB2 DSNTIAUL sample program.

##### User defined

User-defined format.

##### Delimited Variables (CSV)

FM/DB2 writes the data to the output file as a comma-delimited (CSV) file.

The data for each column appears in the output record in column number order, and each data value is separated from the next by a separator character.

DB2 data exported in this way cannot be imported using Import (option 3.6). The data is intended for use by a spreadsheet application program.

**Native unicode processing**

Determines how FM/DB2 processes Unicode encoded data when exporting data from a table to a dataset. Normally data stored in DB2 in Unicode is converted automatically to the CCSID of the DB2 plan, typically CCSID 37. This automatic translation results in conversion errors when a Unicode character does not have an equivalent code point in CCSID 37. When data is exported in "native Unicode" format, the automatic translation of data from unicode to the CCSID of the DB2 plan is suppressed. This ensures that there are no data conversion errors, but means the data is not directly visible using z/OS utilities such as the editor. Use this option if the data is to be transferred to other systems that support Unicode data. When the option is not enabled, the option has no effect; that is, the default processing is used. When the data being exported is not Unicode encoded, the option has no effect, even if enabled.

/ Process Unicode data natively.

(blank)

Do not Process Unicode data natively. This is the default setting.

**Execution Options****Online**

The export is run in foreground.

**Batch** Builds the necessary JCL to perform the Export utility in a batch job, and displays it in an edit session so that you can review the JCL prior to submitting the job.

**Batch, using DB2 utility**

Selecting this option runs the export using the DB2 UNLOAD utility.

Generates the JCL for the UNLOAD job, and displays it in an edit session so that you can review the JCL prior to submitting the job.

**Batch data set creation**

This option only applies when batch execution is selected, and is ignored for online execution. You use this option to defer the creation of the export data set to batch job execution time. When this option is not selected, FM/DB2 determines whether the export data set exists before generation of the batch job JCL. If the data set does not exist, you are prompted to create it.

**Edit DB2 UNLOAD options**

Used in conjunction with option 3 **Batch, using DB2 UNLOAD**. The UNLOAD Options panel is displayed after you press the Exit function key (F3).

**More Options****Null indicators / CSV options**

If selected, you can navigate to the Export Options (2 of 3) panel by pressing the NxtPage function key (F11).

This option is only selectable if you have also selected either the data format option 4. **User defined** or 5. **Delimited variables (CSV)**.

**Data type format**

If selected, you can navigate to the Export Options (3 of 3) panel by pressing the NxtPage function key (F11).

## Export Options (1 of 3) panel

This option is only selectable if you have also selected the data format option **4. User defined**.

### Parent panels

- “Set Utility Options panel” on page 742

### Child panels

To display this panel...	Use/do this
“Export Options (2 of 3) panel” on page 605	Select the <b>Null indicators / CSV options</b> option (data format option 4 or 5 must also be selected), and press the NxtPage function key (F11).

### Related tasks

- “Setting default processing options” on page 43
- “FM/DB2 system options (option 0.2)” on page 46
- “Copying data to a VSAM or QSAM file” on page 223

## Export Options (2 of 3) panel

You use the Export Options (2 of 3) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Export Options - (2 of 3)	Global Settings	
Null Indicators:			
Usage	Placement	Type	Indicator
1 1. Separate	1. Before	2 1. One byte	Char
2. None	2. After	2. Two byte	-1 Integer
3. CSV, use NI char	3. User defined		
Delimited Variables (CSV):			
, Separator character		Enter "/" to select option	
		- Include column headers	
		- "ASIS" encapsulation	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F11=NxtPage	F12=Cancel	

Figure 104. Export Options (2 of 3) panel

**Usage** For nullable columns, determines whether fields in the exported data correspond to the null indicator:

#### Separate

A null indicator is output, taking into account the settings for Placement, Type and Indicator.

**None** No fields in the exported data correspond to the null indicator.

#### CSV, use NI char

If you opt for CSV records (data format 5), this option outputs a null indicator as the separator.

#### Placement

Determines where the null indicator is placed:

**Before** The null indicator is placed before the data for the column to which it applies.

**After** The null indicator is placed after the data for the column to which it applies.

#### User defined

A 1-byte (character format) or 2-byte (signed integer format) null indicator is placed somewhere in the output record. Placement depends on mapping the null indicator to a corresponding field in the output record.

**Type** Determines the type of null indicator to be used:



## Export Options (2 of 3) panel

### One byte

1-byte (character format) null indicator.

### Two byte

2-byte (signed integer format) null indicator.

### Indicator

Determines the value of the null indicator:

**Char** The character used as the 1-byte (character format) null indicator.

### Integer

The integer used as the 2-byte (signed integer format) null indicator.

### Separator character

The character used to separate data when the **Delimited Variables (CSV)** option is specified.

### Include column delimiters

Select this option to produce comma-delimited column headers as the first export record.

### "ASIS" encapsulation

Determines whether automatic encapsulation of column data is disabled. Select this option when the data has already been encapsulated in a user-defined character, prior to storage in DB2.

## Parent panels

- "Set Utility Options panel" on page 742

## Child panels

To display this panel...	Use/do this
"Export Options (1 of 3) panel" on page 602	Press the PrvPage function key (F10)
"Export Options (3 of 3) panel" on page 607	Press the NxtPage function key (F11) (the data format option <b>4. User defined</b> , and the <b>Data type format</b> option, on the Export Options (1 of 3) panel must be selected).

## Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46
- "Copying data to a VSAM or QSAM file" on page 223

## Export Options (3 of 3) panel

You use the Export Options (3 of 3) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	Export Options - (3 of 3)	Global Settings	
Decimal Data:			
Select option			
1 1. Internal (packed) format			
2. Zoned format			
3. External format			
Integer Data:			
Enter "/" to select option			
_ External format			
Floating Point Data:			
Enter "/" to select option			
_ External format			
Graphic Data (fixed length):			
Enter "/" to select option			
_ Use shift-out/shift-in (SOSI) characters			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F11=NxtPage	F12=Cancel	

Figure 105. Export Options (3 of 3) panel

#### Decimal Data

##### Internal (packed) format

Any decimal field occupies the minimum number of bytes needed to represent the data as a packed decimal field.

##### Zoned format

In Zoned format the field occupies the number of bytes equal to the precision.

##### External format

In External format the field occupies the number of bytes equal to the precision + 2.

#### Integer Data

##### External format

In External format the field occupies 6 bytes for smallint(2), 11 bytes for integer(4), 20 bytes for bigint.

#### Floating Point Data

##### External format

In External format the field occupies 14 bytes for float(4), 23 bytes for float(8).

#### Graphic Data (fixed length)

## Export Options (3 of 3) panel

### Use shift-out/shift-in (SOSI) characters

Use shift-out/shift-in (SOSI) characters to enclose the exported graphic fixed length data.

**Note:** External format is the same format that is used to display data in FM/DB2 Editor.

## Parent panels

- “Set Utility Options panel” on page 742

## Child panels

To display this panel...	Use/do this
“Export Options (2 of 3) panel” on page 605	Press the PrvPage function key (F10)

## Related tasks

- “Setting default processing options” on page 43
- “FM/DB2 system options (option 0.2)” on page 46
- “Copying data to a VSAM or QSAM file” on page 223

## Export “To” panel

You use the Export “To” panel to specify the name of the data set that contains the data to be exported, the (optional) name of a template data set, and processing options.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

Export from FMUSER.EMP

To Partitioned, Sequential or VSAM Data Set:

Data set name . . .

Member . . . . .

Volume . . . . .

To Copybook or Template:

Data set name . . .

Member . . . . .

Processing Options:

Template usage

2 1. Above

2. Previous

3. Generate from input

4. Generate and save

5. None. (CSV output)

Enter "/", "A" always to select option

- Edit options

- Edit template mapping

Command ==>

F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=SwapF12=Cancel

**Data set name** (To Partitioned, Sequential or VSAM Data Set)  
The name of the output data set.

**Member** (To Partitioned, Sequential or VSAM Data Set)  
The output member name (if applicable).

**Volume**  
The volume serial number if the data set is not catalogued.

**Data set name** (To Copybook or Template)  
The name of the sequential or partitioned data set that contains the copybook or template that describes the data set. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** (To Copybook or Template)  
If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

**Template usage**  
The Export Utility “To” panel provides five options for template processing:

1. Above
- Requires that you enter the name of a copybook or template in the **To Copybook or Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2

## Export “To” panel

displays a member selection list. After you have specified the member containing a copybook or template, processing continues using this template in place of the automatically-generated template for the table (see Template usage option 3).

### 2. Previous

Uses the last (previously used) template for this table.

### 3. Generate from input

Generates a template based on the input template, but which includes only those columns selected in the input template. If you have specified a data set name in the **To Copybook or Template** section of the panel, it is ignored. The generated template is not saved.

### 4. Generate and save

Generates a template based on the input template, but which includes only those columns selected in the input template. This option requires you to enter the name of a template data set (and optionally a member name) in the **To Copybook or Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. The generated template is saved.

### 5. None. (CSV output)

FM/DB2 does not utilize an output template. FM/DB2 writes the data to the output file as a comma-delimited (CSV) file. DB2 data exported in this way cannot be imported using Import (option 3.6). The data is intended for use by a spreadsheet application program.

You can select the following options by entering a “/” or an “A”:

#### Edit options

Select this option to display the second of the Export Options panels.

#### Edit template mapping

Use to edit the template for the partitioned, sequential, or VSAM data set to which you are exporting the data, before exporting the data.

**Note:** Template mapping does not apply for CSV output. See the template usage option **5. None. (CSV output)**.

## Parent panels

- “Export Utility panel” on page 612
- “Column Selection/Edit panel” on page 419

## Child panels

To display this panel...	Use/do this
“Template Mapping panel” on page 783	Select <b>Edit template mapping</b>

## Related tasks

- “Copying data to a VSAM or QSAM file” on page 223
- “Specifying a data set and a member name” on page 34
- “Exported data formats” on page 228
- “Selecting options on FM/DB2 panels” on page 28

- Chapter 3, “Working with templates,” on page 55
-

## Export Utility panel

You use the Export Utility panel to specify the name of the DB2 object that contains the data to be exported, the (optional) name of a template data set, and processing options.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Export Utility	
From DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	FMNUSER	+	Table space . . . . . (optional)
Name . . . . .	EMP		+
Export Count . . .	ALL	Number of rows to export	
From Template:			
Data set name . . .			
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	- Edit options		
- 2. Previous	- Edit template		
3. Generate from table	- Create audit trail (*)		
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
F7=Backward	F8=Forward		

- Location** The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.
- Database** The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:
- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
  - Synonym names are not recognized or included in the selection list.
- Owner** The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.
- If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.
- Table space** The table space name for the DB2 object. To further define the

object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as "sysibm" does not match "SYSIBM" in the DB2 catalog.

**Export Count** The number of rows to be exported. This indicates the number of rows to be read from the DB2 table. It can be either a number in the range 1–99999999, or \*, or ALL. The default is ALL, where all rows selected from the DB2 object are exported.

**Data set name** The name of the data set or PDS member containing the template for the "From" table. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Template usage

The Export Utility "From" panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **From Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (see Template usage option 3).

##### 2. Previous

Uses the last (previously used) template for this table.

##### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **From Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.



### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **From Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a "/" or an "A":

#### Edit options

Select this option to display the first of the Export Options panels.

#### Edit template

Select this option to edit the template before exporting the data.

#### Create audit trail

**Note:** "(\*)" is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

## Parent panels

- "Utility Functions panel" on page 797

## Child panels

To display this panel...	Use/do this
"Export "To" panel" on page 609	Select <b>Edit template</b>
"Column Selection/Edit panel" on page 419	Do not select <b>Edit template</b>
"Export Options (1 of 3) panel" on page 602	Select <b>Edit options</b>

## Related tasks

- "Copying data to a VSAM or QSAM file" on page 223
- "Specifying a data set and a member name" on page 34
- "Selecting options on FM/DB2 panels" on page 28
- Chapter 3, "Working with templates," on page 55
- "SAF-rule controlled auditing" on page 51
-

## Field Selection/Edit panel

You use the Field Selection/Edit panel to specify the records you want to select when you use the Import utility function (option 3.6).

### Panel and field definitions

Process		Options		Help	
File Manager		Field Selection/Edit		Line 1 of 27	
----- Criteria - Enter 1 or 2 to specify expression by field -----					
1	Id :				
2	Sel: #9 = 'B00'				
Offset		0			
Cmd	Seq	SHE	Ref	Field Name	Picture Type Start Length
**** Top of data ****					
---	---	---	1	1 \$01	AN 1 144
---	S	---	2	2 EMPNO	AN 1 6
---	---	---	3	2 len	BI 7 2
---	S	---	4	2 FIRSTNME	VC 9 12
---	S	---	5	2 MIDINIT	AN 21 1
---	---	---	6	2 len	BI 22 2
---	S	---	7	2 LASTNAME	VC 24 15
---	---	---	8	2 null	BI 39 2
---	S	---	9	2 WORKDEPT	AN 41 3
---	---	---	10	2 null	BI 44 2
---	S	---	11	2 PHONENO	AN 46 4
Command ==>		Scroll			
F1=Help	F2=Split	F3=Exit	F4=Expand	F5=RFind	F6=RunTemp
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

#### 1 Id, 2 Sel

Use option 1 and 2 to specify record identification and selection criteria by field.

If an expression has not previously been updated by field, you can enter the expression on the adjacent line which is left and right scrollable with the Left function key (F10) and the Right function key (F11), and expandable with the Expand function key (F4). The "+" and "-" indicators at the end of the field denote the directions (right and left respectively) in which you can scroll.

If an expression has previously been entered by field, this line is protected. To change back to a freeform REXX expression, select the "by field" option (by entering 1 or 2 on the command line)) and delete the expression. When you return to this panel the line is available for input (unless it is a dynamic template in which case you must specify the expression).

**Note:** For more information about specifying record selection criteria, see the *File Manager User's Guide and Reference*.

#### Cmd

Prefix command area. Used to enter a template editor prefix command.

#### Seq

Sequence field. Used to order fields for display in an FM/DB2 editor session and printing data using the Print utility.

#### SHE

Select/Hold/Edit field. Shows the field status:

**S** The field has been selected for processing.

**H** The field has been selected to be held on the edit display.

## Field Selection/Edit panel

	<b>E</b>	The field has been previously edited to add information such as data create, field headings, and scrambling options.
<b>Ref</b>		Field reference. Shows the field reference number assigned to the field name. Field reference numbers are assigned to all fields in a record, and are used to identify fields in selection criteria expressions.
<b>Field Name</b>		Shows the level number and field name of the field. If the field is an array, the dimensions are shown in brackets after the field name. If the field has been selected for processing, the field name is highlighted.
<b>Picture</b>		For COBOL, shows the picture clause. For HLASM shows the DC or DS operand. For PL/I, shows the length and scale (if non zero) for binary and packed fields. Also shows the bit length for bit fields.
<b>Type</b>		Shows the data type of the field: <b>AN</b> Alphanumeric (includes alphabetic, and group items) <b>BI</b> Binary <b>BT</b> Bit <b>DB</b> DBCS <b>FE</b> Floating point (external) <b>FP</b> Floating point (internal) <b>G</b> Graphic <b>PD</b> Packed decimal (internal decimal) <b>VC</b> Variable Character <b>VD</b> Variable DBCS <b>VG</b> Variable Graphic <b>ZC</b> Character Null terminated <b>ZD</b> Zoned decimal (external decimal) <b>ZE</b> Zoned decimal edited <b>ZG</b> Graphic Null terminated <b>Z2</b> DBCS Null terminated
<b>Start</b>		Shows the start column of the field. For variable located fields the start location is based on the maximum length of the record.
<b>Length</b>		Shows the length of the field. For a level-01 field, if the record is variable-length, the length shown is the maximum record length.
<b>Record identification criteria</b>		
		Used to specify the criteria that FM/DB2 uses to identify this record type. FM/DB2 first uses the record length to identify record type.  For fixed-length records (as defined by the record definition in the template, not the data set attributes), the length of the record read must exactly match the length of the corresponding record definition in the template.

For variable-length records, the length of the record read must be equal to or greater than the minimum length and equal to or less than maximum length of the corresponding record definition in the template.

If FM/DB2 cannot match the length of a record to one of the record definitions in the template, the record is not selected for processing. If the length of a record matches more than one record definition in the template, and no further record identification criteria is specified, FM/DB2 uses the first matching record type in the template. Therefore, if the record length of each different record type in the file is not unique, you should use this field to specify some unique identification criteria.

### Record selection criteria

Used to specify the criteria that FM/DB2 uses to select records for processing. You can use this field to limit the records of a given record type that you want to process. If you do not provide any record selection criteria, all records of this record type are selected for processing (if the record type itself has been selected for processing).

## Parent panels

- “Import Utility (“From”) panel” on page 639

## Child panels

None.

## Related tasks

- “Copying data from a VSAM or QSAM file” on page 200

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## FM/DB2 Release News panel

FM/DB2 displays the FM/DB2 Release News panel if you:

1. Select **Help** from the Action bar menu, and
2. Select **8. News about FM/DB2...** from the drop-down menu.

## FM/DB2 Object List Options (1 of 2) panel

You use the FM/DB2 Object List Options (1 of 2) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	FM/DB2 Object List Options (1 of 2)	Global Settings	
Object List Utility Options:			
Enter "/" to select option			
<input type="checkbox"/> Show all catalog table columns <input type="checkbox"/> Show "unused" catalog table columns <input type="checkbox"/> Show "internal use only" catalog table columns <input checked="" type="checkbox"/> Use automatic column sizing <input type="checkbox"/> Use extended column name headings <input checked="" type="checkbox"/> Interpret columns containing codes <input checked="" type="checkbox"/> Modify order of columns displayed			
Row count . . . . . 1000		Maximum number of rows to fetch	
More Options:			
Enter "/" to select option			
<input checked="" type="checkbox"/> Display width for varying columns			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F11=NxtPage	F12=Cancel	

Figure 106. FM/DB2 Object List Options (1 of 2) panel

#### Show all catalog table columns

Display of catalog table information includes every available column, including any columns marked as "unused" or "internal use only" in the *DB2 UDB for z/OS SQL Reference*. This option overrides any settings for the **Show "unused" catalog table columns** and **Show "internal use only" catalog table columns** options.

The default for this option is: unselected.

#### Show "unused" catalog table columns

Display of catalog table information includes columns marked as "unused" in the *DB2 UDB for z/OS SQL Reference*. This option can be overridden by selecting the **Show all catalog table columns** option.

The default for this option is: unselected.

#### Show "internal use only" catalog table columns

Display of catalog table information includes columns marked as "internal use only" in the *DB2 UDB for z/OS SQL Reference*. This option can be overridden by selecting the **Show all catalog table columns** option.

The default for this option is: unselected.

#### Use automatic column sizing

Varying-length (VARCHAR) columns of the catalog table being displayed may be automatically sized, based on the data stored within the column. Automatic column sizing determines the longest data value in each

varying column as the data is read from DB2. This value is then used to set the display width for the column, prior to the data being displayed.

The default for this option is: selected.

#### Use extended column name headings

Column names for the catalog table being processed are replaced by longer, more meaningful, column headings.

The default for this option is: selected.

#### Interpret columns containing codes

Selected columns in the DB2 catalog table being processed are expanded, based on the value stored within the column. This feature typically operates on one-character columns that contain a code. As an example, the TYPE column in SYSIBM.SYSTABLES is a one-character code containing A,G,M,T,V, or X. The expanded text for these codes is "Alias", "Created global temporary table", "Materialized query table", "Table", "View", and "Auxiliary Table".

This option is useful if you are not familiar with the meanings of the codes in the various DB2 catalog tables. Selecting this option overrides any setting for the **Use extended column name headings** option, and sets that option on.

The default for this option is: selected.

#### Modify order of columns displayed

Columns in the DB2 catalog table may be re-ordered from the order as defined in the DB2 catalog. In addition certain columns may be marked as held. This feature is intended to place the most important columns from the catalog table on the left of the display, in the most logical order. These columns are held, and do not move when scrolling left and right.

The default for this option is: selected.

#### Row count

Limits the number of rows fetched from the DB2 catalog. The value entered applies to:

- Object List selection panels displayed by FM/DB2 functions such as the editor, print, copy, import, export, and data create. For more information on object list selection, see "Specifying a DB2 object name" on page 889. Note that FM/DB2 functions such as edit, copy, print, and so on also have a **Row count** field on the function entry panel. Once an object has been selected, the function entry **Row count** field acts to control the number of rows processed in the specified DB2 object.
- Object lists displayed by these FM/DB2 functions:
  - Object List Utility (3.4).
  - Object Privileges Utility (3.5).
  - Explain Utilities (4.5).

A value of 0 or ALL specifies no limit; all rows from the relevant catalog tables are fetched and displayed. When you specify 0, FM/DB2 accesses the DB2 catalog using *large mode*, thereby minimizing storage usage for the list of DB2 objects.

If you experience "insufficient storage" conditions, you can specify a value to limit the number of rows fetched from DB2. Another way to limit the number of rows fetched in the Object List utility (option 3.4) is to specify selection criteria on the function entry panel.

## FM/DB2 Object List Options (1 of 2) panel

The default for this option is 1000.

### Display width for varying columns

The Object List utility displays information in DB2 catalog tables. Some of the columns within those tables are defined as varying columns with potentially very long maximum lengths.

You can use the **Use automatic column sizing** option to reduce the maximum display width for varying columns to the maximum that is needed to display the data for each column.

Additional control can be achieved by specifying minimum and maximum display widths for the various column types shown on the panel. All values are optional. (See "FM/DB2 Object List Options (2 of 2) panel" on page 621. A minimum value ensures that the display width is at least the value specified, even if there is no displayable data for the column in all rows processed. Specifying a minimum value does not prevent the display width expanding, if needed, to accommodate longer data.

## Parent panels

- "Set Processing Options panel" on page 738

## Child panels

To display this panel...	Use/do this
"FM/DB2 Object List Options (2 of 2) panel" on page 621	Press the NxtPage function key (F11)

## Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46
- "TIME columns" on page 131
- "INDEXINF primary command" on page 834
- "'No Primary Key' errors" on page 159
- "'Row Not Found' errors" on page 161

## Related references

- "SQL primary command" on page 854

## FM/DB2 Object List Options (2 of 2) panel

You use the FM/DB2 Object List Options (2 of 2) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	FM/DB2 Object List Options (2 of 2)	Global Settings	
Display width for varying columns: Enter minimum and maximum values for each column type			
		Min	Max
Databases . . . . .		8	30
Column names . . . . .		8	18
Authorization identifiers . . . . .		8	18
Object names . . . . .		8	30
Other . . . . .		8	30
eg REMARKS, LABEL			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F12=Cancel		

Figure 107. FM/DB2 Object List Options (2 of 2) panel

Allows you to specify the minimum and maximum display widths for the various column types shown on the object list panel. All values are optional.

- Min** Ensures that the display width is at least the value specified, even if there is no displayable data for the column in all rows processed. Specifying a minimum value does not prevent the display width expanding, if needed, to accommodate longer data.
- Max** Limits the maximum display width to the value specified, even if data in some rows has a longer width. Specifying a maximum value does not prevent the display width being set to a smaller value, if no rows have data exceeding the value specified.

### Parent panels

- “Set Processing Options panel” on page 738

### Child panels

To display this panel...	Use/do this
“FM/DB2 Object List Options (1 of 2) panel” on page 618	Press the PrvPage function key (F10)



### Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46
- "TIME columns" on page 131
- "INDEXINF primary command" on page 834
- ""No Primary Key" errors" on page 159
- ""Row Not Found" errors" on page 161

### Related references

- "SQL primary command" on page 854

## FM/DB2 Systems Options (1 of 4) panel

You use the FM/DB2 Systems Options (1 of 4) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	FM/DB2 System Options (1 of 4)	Global Settings	
Uppercase Translation: Enter "/" to select option / Translate DB2 object names / Translate input SQL statements			
Encapsulation of SQL Identifiers in Double Quotes: Use double quotes 3 1. For DB2 SQL reserved words 2. For IBM and DB2 SQL reserved words 3. Always			
More Options: Enter "/" to select option / Arbitrary select statements, time display format, template creation / CCSID warning option			
Command ==> F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap F11=NxtPage    F12=Cancel			

Figure 108. FM/DB2 System Options (1 of 4) panel

#### Translate DB2 object names

Translates DB2 object owner and DB2 object name to uppercase. (The DB2 object location is always translated to uppercase.)

If you do not select this option, the DB2 object owner and DB2 object name remain as entered by the user.

#### Translate input SQL statements

Translates any free-form SQL statements entered to uppercase.

If you do not select this option, any free-form SQL statements entered remain as entered by the user.

#### Encapsulation of SQL Identifiers in Double Quotes

The SQL identifiers encapsulated in double quotes in SQL statements generated by FM/DB2. You can select one of the following:

- 1. For DB2 SQL reserved words

If your DB2 objects include column names that are DB2 SQL reserved words, you must enclose these column names in double quotes. Use this option to only enclose identifiers that are DB2 SQL reserved words in double quotes. Any other identifiers appear in SQL statements without encapsulating double quotes. This option is recommended if you are using the SQL primary command (see "SQL primary command" on page 854) to generate and save SQL statements for later use.

- 2. For IBM and DB2 SQL reserved words

## FM/DB2 Systems Options (1 of 4) panel

Use this option to recognize any identifiers that are either a DB2 SQL reserved word, or an IBM SQL reserved word, and enclose these words in double quotes. Any other identifiers appear in SQL statements without encapsulating double quotes.

- **3. Always.** This is the setting. This option applies to view, edit, browse, print, copy, import and export functions only and results in all identifiers being enclosed in double quotes in SQL statements generated by FM/DB2.

### Notes:

1. For information about the rules covering the construction of SQL identifiers, see the *DB2 UDB for z/OS SQL Reference*.
2. In general, you can use any uppercase alphabetic character and three special characters (\$, \_, and @) in an SQL identifier without special consideration. If your identifier includes lowercase characters, spaces, or other characters, then you must enclose the identifier in double quotes. FM/DB2 detects identifiers with lowercase and other unusual characters and encloses these in double quotes. This occurs regardless of the encapsulation option selected.
3. The lists of DB2 and IBM SQL reserved words used by FM/DB2 are the latest available. When connected to an older release of DB2, if you have selected either options 1 or 2, FM/DB2 might recognize an identifier as a reserved word, even though the identifier is not defined as a reserved word in the earlier release of DB2.

## Parent panels

- "Set System Processing Options panel" on page 740

## Child panels

To display this panel...	Use/do this
"FM/DB2 Systems Options (2 of 4) panel" on page 625	Press the NxtPage function key (F11)

## Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46
- "TIME columns" on page 131
- "INDEXINF primary command" on page 834
- "'No Primary Key' errors" on page 159
- "'Row Not Found' errors" on page 161

## Related references

- "SQL primary command" on page 854

## FM/DB2 Systems Options (2 of 4) panel

You use the FM/DB2 Systems Options (2 of 4) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	FM/DB2 System Options (2 of 4)	Global Settings	
Arbitrary SQL Select Statements:			
Enter "/" to select option			
/ Use edit (instead of browse) to display results			
External Format for TIME Data Type Columns:			
Display format			
2 1. ISO (HH.MM.SS)			
2. JIS (HH:MM:SS)			
3. DB2 DSNHDECP setting			
Catalog Queries and Template Creation:			
Enter "/" to select option			
Use uncommitted read when accessing the DB2 catalog			
7 Retrieve foreign key information when building templates			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F11=NxtPage	F12=Cancel	

Figure 109. FM/DB2 System Options (2 of 4) panel

#### Use edit (instead of browse) to display results

FM/DB2 uses Edit to display the result table generated by a freeform SQL statement.

#### External Format for TIME Data Type Columns

The external format for data retrieved from DB2 TIME data type columns. You can select one of the following:

- **1. ISO (HH.MM.SS).** This is the default format.
- **2. JIS (HH:MM:SS)**
- **3. DB2 DSNHDECP setting** (uses the external format set in the DB2 DSNHDECP module).

Depending on the time format used, information can be lost when data is retrieved from DB2 (for example, the USA format, which discards the seconds portion of any time). If LOCAL is specified (a time format exit is in use), ensure that there is no loss of information when the time value is converted to an external format. When you use this option, you can encounter:

- SQLCODE 100 (row not found) conditions when attempting to delete or update tables that contain a TIME column.
- Removal of the seconds portion of any TIME column (the seconds value is set to 00) in print, copy, or export operations.

#### Use uncommitted read when accessing the DB2 catalog

This option ensures that all DB2 catalog accesses for the view, edit, print,

## FM/DB2 Systems Options (2 of 4) panel

copy, export and import functions use the uncommitted read option (that is, no locks are taken against the DB2 catalog).

### Retrieve foreign key information when building templates

FM/DB2 stores information about primary keys, indexes and foreign keys in the template for an object. This information is retrieved from the DB2 catalog and stored at template creation time, and can be displayed in an FM/DB2 editor session. Retrieval of the foreign key information can result in slow response if an additional index has not been built on the SYSIBM.SYSFOREIGNKEYS catalog table (see the *File Manager Customization Guide* for details). When this option is not selected, any templates generated do not contain any foreign key information.

## Parent panels

- “FM/DB2 Systems Options (1 of 4) panel” on page 623

## Child panels

To display this panel...	Use/do this
“FM/DB2 Systems Options (1 of 4) panel” on page 623	Press the PrvPage function key (F10)
“FM/DB2 Systems Options (3 of 4) panel” on page 627	Press the NxtPage function key (F11)

## Related tasks

- “Setting default processing options” on page 43
- “FM/DB2 system options (option 0.2)” on page 46
- “TIME columns” on page 131
- “INDEXINF primary command” on page 834
- ““No Primary Key” errors” on page 159
- ““Row Not Found” errors” on page 161

## Related references

- “SQL primary command” on page 854

## FM/DB2 Systems Options (3 of 4) panel

You use the FM/DB2 Systems Options (3 of 4) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	FM/DB2 System Options (3 of 4)	Global Settings	
CCSID Warning Message: Enter "/" to select option _ Initially ON			
CURRENT DECFLOAT ROUNDING MODE: Select value E C. ROUND_CEILING D. ROUND_DOWN F. ROUND_FLOOR G. ROUND_HALF_DOWN E. ROUND_HALF_EVEN H. ROUND_HALF_UP U. ROUND_UP			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=PrvPage	F11=NxtPage	F12=Cancel	

Figure 110. FM/DB2 System Options (3 of 4) panel

#### CCSID Warning Message

You can set your preferred initial system CCSID Warning message option by changing this option. To request a warning message to be displayed when the CCSID of the terminal differs from the CCSID of the plan, select the option. To suppress the displaying of a warning message when the CCSID of the terminal differs from the CCSID of the plan, do not select the option.

#### CURRENT DECFLOAT ROUNDING MODE

Sets the current decimal floating point rounding mode for the currently connected DB2 system.

For a detailed explanation of the various decimal floating point rounding modes you can specify, see the *DB2 SQL Reference*.

Setting the option causes FM/DB2 to issue an SQL statement that changes the CURRENT DECFLOAT ROUNDING MODE special register.

### Parent panels

- “FM/DB2 Systems Options (2 of 4) panel” on page 625

### Child panels

To display this panel...	Use/do this
“FM/DB2 Systems Options (2 of 4) panel” on page 625	Press the PrvPage function key (F10)

## FM/DB2 Systems Options (3 of 4) panel

To display this panel...	Use/do this
"FM/DB2 Systems Options (4 of 4) panel" on page 629	Press the NxtPage function key (F11)

### Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46

## FM/DB2 Systems Options (4 of 4) panel

You use the FM/DB2 Systems Options (4 of 4) panel to set various options that affect the way in which FM/DB2 operates. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFE2)	FM/DB2 System Options (4 of 4)	Global Settings	
Editor choice for viewing output data, members: Enter "/" to select option <u>Use File Manager editor</u>			
<hr/>			
Command ==> F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap F10=PrvPage    F11=NxtPage    F12=Cancel			

Figure 111. FM/DB2 System Options (4 of 4) panel

#### Use File Manager editor

This option controls which editor is invoked when viewing or browsing a member from a member selection panel or when viewing generated output. Select this option to invoke the File Manager editor. If the option is not selected, the ISPF Browse, View or Edit facility is invoked when available.

### Parent panels

.

### Child panels

To display this panel...	Use/do this
"FM/DB2 Systems Options (3 of 4) panel" on page 627	Press the PrvPage function key (F10)

### Related tasks

- "Setting default processing options" on page 43
- "FM/DB2 system options (option 0.2)" on page 46



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### Foreign Keys for Table panel

FM/DB2 displays the Foreign Keys for Table panel if you use the FK line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

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### Free Application Plan panel

FM/DB2 displays the Free Application Plan panel if you use the FRE line command against an item listed on the “Application Plans panel” on page 397.

---

### Free Package panel

FM/DB2 displays the Free Package panel if you use the FRE line command against an item listed on the “Application Packages panel” on page 395.

## From Column Mapping panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2) From Column Mapping			
To DB2 object . . : DSN8610.EEMP			
From DB2 object . . : DSN8610.EMP			
To column . . . . : #15 RID			
From column . . . . :			
Sel	Cl#	From Column	Data Type(length)
**** Top of data ****			
—	D	Delete "From column"	
—	1	EMPNO	CHARACTER(6)
—	2	FIRSTNME	VARCHAR(12)
—	3	MIDINIT	CHARACTER(1)
—	4	LASTNAME	VARCHAR(15)
—	5	WORKDEPT	CHARACTER(3)
—	6	PHONENO	CHARACTER(4)
—	7	HIREDATE	DATE
—	8	JOB	CHARACTER(8)
—	9	EDLEVEL	SMALLINT
—	10	SEX	CHARACTER(1)
Command ==>			
F1=Help		F2=Split	F3=Exit
F9=Swap		F12=Cancel	F4=CRetrieve
		F7=Up	F8=Down
		Scroll	PAGE

### Parent panels

- "Template Mapping panel" on page 783

### Child panels

To display this panel...	Use/do this
"Template Mapping panel" on page 783	Press F3 or F12

### Related tasks

## Functions panel

You use the Functions panel to display information about the functions you have selected.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSROUTINES.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Functions	
Location:		Format <u>TABL</u>	
SEL	SCHEMA	NAME	ROUTINEX
----	*-----*	*-----*	*-----*
----	#1---+---	#3---+---	#90---+---1---+---
****	Top of data	****	
----	KEISTE2	DT1	System generated
----	KEISTE2	CHAR	System generated
----	KEISTE2	DT1	System generated
----	KEISTEW	CHAR80	System generated
----	KEISTEW	CHAR	System generated
----	KEISTEW	CHAR80	System generated
----	KEISTEW	DOCMATCH	External
****	End of data	****	
Command ==>		Scroll PAGE	
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Schemas panel” on page 721

### Child panels

To display this panel...	Use/do this
“Alter External Scalar Function panel” on page 379	Line command A
See “Comment panels” on page 424	Line command COM

To display this panel...	Use/do this
"Create Function panel" on page 457	Line command CR
See "Drop panels" on page 566	Line command DR
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Privileges panels" on page 678	Line command P
"Routine Parameters panel" on page 709	Line command PARM
"Application Packages panel" on page 395	Line command PKG
Line command PS	
"Revoke privileges panels" on page 709	Line command R
"Distinct Types panel" on page 565	Line command RDT
"Display Row panel" on page 564	Line command ROW
"Schemas panel" on page 721	Line command SCH
"Sort Fields panel" on page 747	Primary command SORT

## Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

## Related references

- "SORT primary command" on page 853

## Generate SQL From DB2 Catalog panel

You use the Generate SQL From DB2 Catalog panel to specify how the generation of SQL from the DB2 catalog should work. You can specify which SQL statement types FM/DB2 should generate, and optionally which names and values should be changed.

### Panel and field definitions

Process	Options	Utilities	Help		
FM/DB2 (DFA2)	Generate SQL From DB2 Catalog				
Generate SQL statements for database : JOHNLEDP +					
SQL statement types to be generated from the DB2 catalog:					
CREATE DATABASE . . . . Y	GRANT access ON DATABASE . . Y				
CREATE TABLESPACE . . . Y	GRANT access ON TABLESPACE . Y				
CREATE TABLE . . . . Y	GRANT access ON TABLE . . . . Y				
CREATE VIEW . . . . Y	GRANT access ON VIEW . . . . Y				
CREATE INDEX . . . . Y	ALTER TABLE ADD FOREIGN KEY . Y				
CREATE SYNONYM . . . . Y	LABEL ON . . . . . Y				
CREATE ALIAS . . . . Y	COMMENT ON . . . . . Y				
CREATE TRIGGER . . . . Y					
New names/values for generated SQL (leave blank to use current values):					
Object owner . . . . .	+				
Alloc TS size as . . .	DEFINED (DEFINED, USED, or ALLOC)				
Database name . . . . .					
Storage group for TS . .	+				
Storage group for IX . .	+				
Target DB2 version . .	(Current DB2 version: 810)				
Output file and execution mode:					
Data set name . . . . .					
Data set disposition .	OLD (OLD, SHR, or MOD)				
Execution mode . . .	BATCH (BATCH or TSO)				
Commit statements per .	(Db, tS, Tb, All, None)				
DB2 defaults handling .	(Keep, or Remove)				
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward	F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel		

#### Generate SQL statements for database

Specify Y for each SQL statement type you want FM/DB2 to generate, and N for each SQL statement type you do not want generated.

**Object owner** New owner (authorization ID) of the objects.

#### Alloc TS size as

Specifies how to generate the primary quantity:

**DEFINED** Use the size defined in the catalog

**USED** Use the size that actually is used

**ALLOCATED** Use the allocated size

**USED** and **ALLOCATED** require that the STOSPACE utility has been run for the storage groups for the objects being generated.

#### Database name

New database name for the objects.

#### Storage group for TS

New storage group for the table spaces.

### Storage group for IX

New storage group for the indexes.

### Target DB2 version

DB2 level of generated SQL statements.

**Data set name** An existing valid SPUFI input data set name, or as SYSOUT=x.  
SYSOUT=\* is the default if the field is blank.

### Data set disposition

The disposition of the output data set.

### Execution mode

Specify:

<b>BATCH</b>	Generates a batch job
<b>TSO</b>	Runs the generation online

### Commit statements per

When to generate COMMIT statements:

<b>D</b>	For each database
<b>S</b>	For each table space
<b>T</b>	For each table
<b>A</b>	For all objects
<b>N</b>	Never

### DB2 defaults handling

Specifies how DB2 default parameters should be handled:

<b>K</b>	Keep DB2 default parameters
<b>R</b>	Remove DB2 default parameters

## Parent panels

- “Databases panel” on page 538
- “Table Spaces panel” on page 768
- “Tables, Views and Aliases panel” on page 776
- “Indexes panel” on page 645
- “Schemas panel” on page 721
- “Distinct Types panel” on page 565
- “Functions panel” on page 632
- “Stored Procedures panel” on page 754

## Child panels

None.

## Related tasks

- “Reverse engineering” on page 259

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## Grant privileges panels

These panels are:

- Grant Application Plan Privileges panel
- Grant Buffer Pool Privileges panel
- Grant Collection Privileges panel
- Grant Column Privileges panel
- Grant Database Privileges panel
- Grant Distinct Type Privileges panel
- Grant Function Privileges panel

## Grant privileges panels

- Grant Package Privileges panel
- Grant Schema Privileges panel
- Grant Sequence Privileges panel
- Grant Storage Group Privileges panel
- Grant Stored Procedure Privileges panel
- Grant System Privileges panel
- Grant Table Privileges panel
- Grant Table Space Use Privileges panel

FM/DB2 displays one of these panels if you use the Privileges utility function (3.5) to grant privileges for an object type, or if you specify the G line command against an object displayed in a list of DB2 objects.

### Format of grant privilege panels

Each grant privilege panel shows:

- The available privileges for the object type, with a corresponding single-character entry field in which you can specify one of the following values:

- |          |  |
|----------|--|
| <b>Y</b> | Grants the specified privilege to the grantee, but does not permit the grantee to grant this privilege to other users. |
| <b>G</b> | Grants the specified privilege to the grantee, and permits the grantee to grant this privilege to other users.         |

A blank in the field indicates that the grantee does not have the specified privilege.

**Note:** To change an *existing* privilege, you must first revoke the existing privilege before granting the new privilege (if applicable) as described in this section.

- A field (for some types of privilege there are two fields), that you use to specify the name of the object for which the privilege is to be granted.
- A **To** field. Use this to specify the SQLID of the user to whom the privilege is to be granted.

### Related tasks

- “Displaying privileges” on page 275
- Chapter 8, “Working with lists of DB2 objects,” on page 243
- “Granting privileges” on page 275
- “Revoking privileges” on page 277

## Import Options panel

You use the Import Options panel to set either global or local import options, depending on how the panel is displayed.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DG03)Import OptionsGlobal Settings

Import dataset:  
Data format  
1 1. FM/DB2 (SQLDA) format  
2 2. DB2 UNLOAD format  
3 3. DSNTIAUL format  
4 4. User defined

Import Options:  
Duplicate key processing  
1 1. Ignore  
2 2. Update  
Max duplicates ALL

Auto Commit (Changes):  
Auto-commit count 0

Command ==>  
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap  
F12=Cancel

#### Data format

Allows you to specify the data format that corresponds to the template or copybook used:

- 1 FM/DB2 (SQLDA) format
- 2 DB2 UNLOAD format
- 3 DSNTIAUL format
- 4 User defined

#### Duplicate key processing

##### 1. Ignore

Ignore duplicate rows.

##### 2. Update

Updates duplicate rows when DB2 returns a duplicate row error (SQLCODE -803) in response to an INSERT SQL statement. When you select this option, FM/DB2 attempts to update the existing row. All columns of the table that are part of at least one unique index are used to identify the row. No comparison is made between the imported row and the existing row prior to the update operation (that is, the update is done regardless of whether the imported row and existing row are the same). When you use this option it is recommended that you specify a DB2 table name,



## Import Options panel

rather than a view name. FM/DB2 does not attempt to update existing rows in a view defined on a view.

### **Max duplicates**

The maximum number of duplicates permitted.

Valid values: A number in the range 0–9999999999, or “ALL”.

### **Auto-commit count**

Use this option to take progressive DB2 commit points as records are imported. Any positive value entered will cause FM/DB2 to issue a DB2 commit automatically after the specified number of successful DB2 changes. A successful DB2 change is either the successful insert of a record; or the successful update of a row when a duplicate key error is encountered on the insert. The change counter is reset after each DB2 commit is issued, so multiple DB2 commit points may be issued. Specify a zero value if no progressive DB2 commit points are required; in this case the DB2 commit is deferred until the end of the import utility and any error encountered during the import will cause all changes to be backed out.

### **Delete existing rows**

Deletes all the rows in the target table before importing.

## **Parent panels**

- “Set Utility Options panel” on page 742
- “Import Utility (“From”) panel” on page 639
- “Import Utility (“To”) panel” on page 641

## **Child panels**

None.

## **Related tasks**

## Import Utility (“From”) panel

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Import Utility

From Partitioned, Sequential or VSAM Data Set:  
Data set name . . . 'FMNUSER.EXPORT'  
Member . . . . .  
Volume . . . . .  
Start position . . 1  
Import Count . . . ALLNumber of rows to import

From Copybook or Template:  
Data set name . . . 'FMNUSER.TEMPLATE'  
Member . . . . .EXPORT1

Processing Options:  
Template usageEnter "/", "A"lways to select option  
1 1. AboveEdit options  
2. PreviousEdit template

Command ==>  
F1=HelpF2=SplitF3=ExitF7=BackwardF8=ForwardF9=Swap  
F12=Cancel

You can select the following options by entering a “/” or an “A” (see “Selecting options on FM/DB2 panels” on page 28):

**Edit template**  
Use to edit the template for the table from which you are importing the data, before importing the data. For more details, see Chapter 3, “Working with templates,” on page 55.

**Edit options**  
Select this option to display the Import Options panel.

### Parent panels

- “Utility Functions panel” on page 797

### Child panels

To display this panel...	Use/do this
“Import Options panel” on page 637	Select <b>Edit options</b>
“Field Selection/Edit panel” on page 615	Select <b>Edit template</b>

## Import Utility (“From”) panel

### Related tasks

- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55

## Import Utility (“To”) panel

### Panel and field definitions

Process	Options	Utilities	Help
Import from FMNUSER.EXPORT			
To DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	DSN8610	Table space . . . . .	(optional)
Name . . . . .	EMP		+
To Template: From FMNUSER.TEMPLATE(EXPORT1)			
Data set name . . . . .			
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A"lways to select option		
3 1. Above	- Edit options		
2. Previous	- Edit template mapping		
3. Generate from table	- Batch execution		
4. Generate/Replace	- Create audit trail (*)		
	- Use REXX proc		
	- REXX proc name . . . . .		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

#### Location

The location name for the DB2 object. You can specify a generic name to select from a list. If you enter a value in this field, synonym object names are not recognized or included in the selection list.

#### Database

The database name for the DB2 object. You can use this field to optionally specify a database to further define the object to be processed. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified database.
- Synonym names are not recognized or included in the selection list.

#### Owner

The name of the owner of the object. You can specify a generic name to select from a list. To specify a synonym in the object **Name** field, either leave this field blank, or specify a generic name that includes the current SQLID or specify the current SQLID. Synonyms are not recognized or included on the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase

## Import Utility (“To”) panel

characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.

### Table space

The table space name for the DB2 object. To further define the object to be processed, you can use this field to optionally specify a table space. If you enter a value in this field:

- The values displayed in the **Owner** and **Name** selection lists are limited to those values defined within the specified table space.
- Synonym names are not recognized, nor included in the selection list.

**Name** The name of the object name to be processed. You can specify a generic name to select from a list. To specify a synonym in this field, type the name of the synonym and ensure that the **Owner** field is blank, contains a generic name that includes the current SQLID, or contains the current SQLID. Synonyms are not recognized or included in the table selection list if any of the **Table space**, **Database**, or **Location** fields are non-blank.

If the **Translate DB2 object names** option is selected, lowercase characters are converted to uppercase. If this option is not selected, lowercase characters are not converted to uppercase; in this situation, a lowercase owner name such as “sysibm” does not match “SYSIBM” in the DB2 catalog.

### Data set name

The name of the data set or PDS member containing the template for the “To” table. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

### Member

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

The Import Utility “To” panel provides four options for template processing:

#### 1. Above

Requires that you enter the name of a template in the **To Template** section of the panel.

#### 2. Previous

Uses the last (previously used) template for this table.

#### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a data set name in the **To Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

#### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the data set specified in the **To Template** section of the panel. If the template already exists, it is replaced and any prior customization is lost.

You can select the following options by entering a “/” or an “A”:

### Edit options

Select this option to display the Import Options panel.

### Edit template mapping

Use to edit the template for the table to which you are importing the data, before importing the data.

### Batch execution

Builds the necessary JCL to perform the Import utility in a batch job.

### Create audit trail

**Note:** “(\*)” is appended to the option name for SAF-controlled auditing when required by SAF rules.

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

### Use REXX proc

Use this option to perform either of these actions:

- Enter a temporary REXX procedure for one-time use by entering an asterisk (\*). FM/DB2 displays a REXX edit panel that you can use to create a new REXX procedure.
- Specify the name of the member containing the REXX procedure you want to use. The member must belong to the PDS allocated to ddname FMNEXEC. You can enter any of the following:
  - The name of the member.
  - A member name pattern (other than \*) to list all matching members. You can then select the required member by entering an S in the **Sel** field. A member name pattern can consist of any characters that are valid in a member name and the following two special pattern characters:

#### asterisk (\*)

Represents any number of characters. As many asterisks as required can appear anywhere in a member name. For example, if you enter \*d\*, a list of all members in the data set whose name contains “d” is displayed.

#### percent sign (%)

A place-holding character representing a single character. As many percent symbols as necessary can appear anywhere in a

## Import Utility (“To”) panel

member name. For example, if you enter %%%%, a list of all members in the data set whose name is four characters in length is displayed.

**Note:** If you select this option but leave the **Use REXX proc** field blank, FM/DB2 displays a member name list. You can then select the required member by entering S in the **Sel** field.

## Parent panels

- “Import Utility (“From”) panel” on page 639
- “Field Selection/Edit panel” on page 615

## Child panels

To display this panel...	Use/do this
“Import Options panel” on page 637	Select <b>Edit options</b>

## Related tasks

- Chapter 3, “Working with templates,” on page 55
- “Selecting options on FM/DB2 panels” on page 28
- “Using a REXX procedure with the Import utility” on page 205
- “Enhancing the Import utility using a REXX procedure” on page 213
- “SAF-rule controlled auditing” on page 51

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## Index Parts panel

FM/DB2 displays the Index Parts panel if you use the PT line command against an item listed on the “Indexes panel” on page 645.

## Indexes panel

You use the Indexes panel to list index object types in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSINDEXES.

Process Options Utilities Help					
FM/DB2 (DFA2)			Indexes		
Location:			Format TABL		
SEL	CREATOR	NAME	TBNAME	TBCREATOR	UNIQUEE
	*	*	*	*	*
----	#2-+-----1--	#1-+-----1-----	#3-+-----1-----	#4-+-----1--	#48-+---
**** Top of data ****					
---	CARLAND	XPMR91932	PMR91932	CARLAND	Unique
---	DSN8810	XACT1	ACT	DSN8810	Unique
---	DSN8810	XACT2	ACT	DSN8810	Yes
---	DSN8810	XCONA1	TCONA	DSN8810	Yes
---	DSN8810	XDEPT1	DEPT	DSN8810	Unique
---	DSN8810	XDEPT2	DEPT	DSN8810	Duplica
---	DSN8810	XDEPT3	DEPT	DSN8810	Duplica
---	DSN8810	XDSPTXT1	TDSPTXT	DSN8810	Yes
---	DSN8810	XEMP1	EMP	DSN8810	Unique
---	DSN8810	XEMP2	EMP	DSN8810	Duplica
---	DSN8810	XEMPPROJACT1	EMPPROJACT	DSN8810	Yes
Command ==>			Scroll PAGE		
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Databases panel” on page 538
- “Tables, Views and Aliases panel” on page 776
- “Columns panel” on page 423
- “Application Packages panel” on page 395



### Child panels

To display this panel...	Use/do this
"Alter Index panel" on page 380	Line command A
"Columns in Index panel" on page 424	Line command COL
"Create Index panel" on page 464	Line command CR
"Databases panel" on page 538	Line command D
See "Drop panels" on page 566	Line command DR
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Recovery Information panel" on page 698	Line command ICS
"Application Packages panel" on page 395	Line command PKG
"Application Plans panel" on page 397	Line command PL
"Index Parts panel" on page 644	Line command PT
"Display Row panel" on page 564	Line command ROW
"Tables, Views and Aliases panel" on page 776	Line command T
"DB2 Utilities panel" on page 556	Line command UTL
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

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## Indexes and Columns for panel

FM/DB2 displays the Indexes and Columns for panel if you use the XC line command against an item listed on the "Tables, Views and Aliases panel" on page 776.

## ISPF Primary Option panel

### Panel and field definitions

Menu Utilities Compilers Options Status Help			
ISPF Primary Option Menu			
0	Settings	Terminal and user parameters	User ID . : FMNUSER
1	View	Display source data or listings	Time. . . : 15:11
2	Edit	Create or change source data	Terminal. : 3278
3	Utilities	Perform utility functions	Screen. . : 1
4	Foreground	Interactive language processing	Language. : ENGLISH
5	Batch	Submit job for language processing	Appl ID . : ISR
6	Command	Enter TSO or Workstation commands	TSO logon : ISPFPROC
7	Dialog Test	Perform dialog testing	TSO prefix: FMNUSER
8	LM Facility	Library administrator functions	System ID : FMD2
9	IBM Products	IBM program development products	MVS acct. : USER
10	SCLM	SW Configuration Library Manager	Release . : ISPF 5.0
11	Workplace	ISPF Object/Action Workplace	
12	OS/390 System	OS/390 system programmer applications	
13	OS/390 User	OS/390 user applications	
F	File Manager	File Manager z/OS and OS/390	
<b>FD FM/DB2 File Manager/DB2</b>			
Option ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=Actions	F12=Cancel		

### Parent panels

- None.

### Child panels

To display this panel...	Use/do this
"Primary Option Menu panel" on page 670	Select File Manager/DB2

### Related tasks

## ISPF Settings panel

You use the ISPF Settings panel display and modify selected ISPF parameters.

### Parent panels

- 

### Related tasks

- "ISPF settings (option 0.11)" on page 48

## Label Column panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Label Column	
LABEL ON COLUMN			
Table owner . . . .	BUDGER2	+	
Table name . . . .	DEPT	+	
Column name . . . .	DEPTNAME		
IS			
Label . . . . .		+	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- "Columns panel" on page 423
- "Constraint Columns for panel" on page 426
- "Columns in Table panel" on page 424

### Child panels

None.

### Related tasks

## Label Table panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Label Table	
LABEL ON TABLE			
Owner . . . . .	BUDGER2	+	
Name . . . . .	EMP	+	
IS			
Label . . . . .		+	
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “Tables, Views and Aliases panel” on page 776

### Child panels

None.

### Related tasks

## LISTCAT Output Display panel

FM/DB2 displays the LISTCAT Output Display panel when you use the LC line command on the Recovery Information panel or the Table Space Parts panel.

## LISTDEF Options panel

You use the LISTDEF Options panel to collect information used in generating LISTDEF statements and the proper JCL statement to access the LISTDEF library in a utility batch job.

## Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	LISTDEF Options	Global Settings	
Enter RESET to restore installation defaults.			
LISTDEF Library Option:			
JCL DD statement:	No DD stmt is generated if field is blank		
//SYSLISTD DD	_____		
//	DD	_____	
//	DD	_____	
//	DD	_____	
Initial Utility Statement Option:			
Utility statement:	No statement is generated if field is blank		
LISTDEF	_____		
_____			
_____			
Additional statements:			
Enter "/" to select options			
- Use additional statements			
- Edit additional statements			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieve
F8=Forward	F9=Swap	F10=Actions	F12=Cancel
F6=Reset	F7=Backward		

### JCL DD statement

The information used to generate the JCL DD statement. This information is:

#### DD name

A read-only field. This holds the value specified in the **LISTDEFDD DD name** field of the OPTIONS Options panel (page 665). If the library field is blank then no DD statement is generated in the utility batch job.

#### Text values

The values entered on these four lines are used directly to generate the DD statement, provided that the **DD name** field is not blank.

### Utility statement

This value is used to generate the initial utility statements. If the field is blank, and the **Use additional statements** option is not selected, then no LISTDEF statement is generated into the utility batch job. If the field is non-blank, then the specified LISTDEF is generated with any additional LISTDEF statements supplied when the Use additional statements option is selected.

### Use additional statements

If this option is set then more than one LISTDEF statement may be generated into the utility batch job. Select the **Edit additional statements** option to edit additional statements. Only LISTDEF specifications that have non-blank input fields are used in the generation.

If this option is not selected, then only a non-blank value in the **Utility statement** field is used to generate the LISTDEF statement.

### Edit additional statements

When you select this option and press Enter, the Additional LISTDEF Statements panel (page 374) is displayed. After you have entered values on this panel and exited the panel, this option is deselected. The additional statements are used when you select the Use additional statements option.

The LISTDEF Library Option panel has an installation-defined default. You can restore the default for the library option by entering the RESET command or pressing the RESET PF key. Each subsystem has its own installation-defined defaults. RESET also clears the **Use additional statements** option and any values in the **Utility statement** fields.

For more information, see LISTDEF and OPTIONS statements in *DB2 Utility Guide and Reference*.

## Parent panels

- 

## Child panels

To display this panel...	Use/do this
"Additional LISTDEF Statements panel" on page 374	Select the Edit additional statements option.

## Related tasks

- "RESET primary command" on page 847
- "Setting options for DB2 utilities" on page 282
- "DB2 Utility LISTDEF options (option 3.UL)" on page 49

## LOAD from panel

You use the LOAD Utility: “To” template panel to specify the template for the target DB2 table when you use the LOAD utility.

### Panel and field definitions

Process	Options	Utilities	Help
Load from template LODINDDN			
Target DB2 Table:			
Owner . . . . .	FMNUSER	+	
Name . . . . .	EMP		+
To Template:			
Data set name . . .			
Member . . . . .			
Processing Options:			
Template usage	Enter "/", "A" always to select option		
3 1. Above	- Edit LOAD utility options		
2. Previous	- Edit template mapping		
3. Generate from table			
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand F7=Backward F8=Forward
F9=Swap	F10=Left	F11=Right	F12=Cancel

**Table owner** The name of the owner for the target table. You can specify a generic object name to select from a list. This field is mandatory.

**Table name** The name of the target table. You can specify a generic object name to select from a list. This field is mandatory.

**Data set name** The name of the data set or PDS member containing the template for the “To” object. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Template usage

The LOAD Utility: “To” template panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template in the **To Template** section of the panel.

##### 2. Previous

Uses the last (previously used) template for this table.

##### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If

you have specified a data set name in the **To Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

#### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the data set specified in the **To Template** section of the panel. If the template already exists, it is replaced and any prior customization is lost.

You can select the following options by entering a “/” or an “A”:

#### Edit load utility options

Displays the Load Utility Options panel

#### Edit template mapping

Use to edit the template for the table to which you are importing the data, before importing the data.

### Parent panels

- “LOAD Utility - Using Templates panel” on page 657

### Child panels

To display this panel...	Use/do this
“LOAD Utility Options panel” on page 659	Select <b>Edit LOAD utility options</b>
“Template Mapping panel” on page 783	Select <b>Edit template mapping</b>

### Related tasks

- “LOAD utility” on page 290
- Chapter 3, “Working with templates,” on page 55
- “Selecting options on FM/DB2 panels” on page 28



## LOAD Utility panel

You use the LOAD Utility panel to specify details about the data you want to load.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DB26)		LOAD Utility	
Input Data:			
Data set name . . . . .			
Member . . . . .			
Volume . . . . .			
Utility Control Statements:			
Data set name . . . . .			
Member . . . . .			
Target DB2 Table:			
Table owner . . . . .		Database . . . . . (optional)	
Table name . . . . .		Table space . . . . . (optional)	
Select Option:			
1 1. The data is described by utility control statements			
2 2. The data is described by a template or copybook			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev
F9=Swap	F10=Actions	F12=Cancel	F7=Backward F8=Forward

#### Data set name (Input Data)

A sequential or partitioned data set that contains the data to be loaded into the DB2 table. Specify a generic data set name to select from a list. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

#### Member (Input Data)

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Volume

The volume serial number if the data set is not cataloged.

#### Data set name (Utility Control Statements)

A sequential or partitioned data set that contains the DB2 load utility control statements. Specify a generic data set name to select from a list. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

#### Member (Utility Control Statements)

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

- Table owner** The name of the owner for the target table. You can specify a generic object name to select from a list. This field is mandatory.
- Database** A fully or partially-qualified database name to limit the list of object names to the specified databases.
- Table name** The name of the target table. You can specify a generic object name to select from a list. This field is mandatory.
- Table space** A fully or partially-qualified table space name to limit the list of object names to the specified table spaces.
1. **The data is described by utility control statements**  
Use the supplied DB2 load utility control statements when generating a DB2 load utility batch job.
  2. **The data is described by a template or copybook**  
Use a template or copybook when generating a DB2 load utility batch job.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

To display this panel...	Use/do this
“LOAD Utility - Using Templates panel” on page 657	Select option 2

## Related tasks

- “LOAD utility” on page 290

## LOAD Utility panel using DB2 templates

You use the LOAD Utility using DB2 templates panel to load new data into tables and build or extend any indexes defined on those tables.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		LOAD Utility	
Input Data:			
Template name . . . LODINDN			
Target DB2 Table:			
Owner . . . . .	_____	+	Database . . _____ (optional)
Name . . . . .	_____		Table space _____ (optional)
			+
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

To display this panel...	Use/do this
“LOAD Utility - Using Templates panel” on page 657	Press Enter

### Related tasks

- “LOAD utility” on page 290

## LOAD Utility - Using Templates panel

You use the LOAD Utility - Using Templates panel to specify the “From” copybook or template that describes the input data.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		LOAD Utility - Using Templates	
Input Data Template or Copybook:			
Data set name . .		_____	
Member . . . . .		_____	
Processing Options:			
Template usage		Enter "/", "A" always to select option	
1 1. Above		_ View template	
2 2. Previous			
Command ==> _____			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Data set name** A sequential or partitioned data set that contains the data to be loaded into the DB2 table. Specify a generic data set name to select from a list. It can be a fully-qualified data set name or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

**Member** If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

#### Template usage

The LOAD Utility - Using Templates panel provides two options for template processing:

##### 1. Above

Requires that you enter the name of a template in the **Input Data Template or Copybook** section of the panel.

##### 2. Previous

Uses the last (previously used) template for this table.

You can select the following option by entering a “/” or an “A”:

#### View template

Select this option to edit the “To” template.

### Parent panels

- “LOAD Utility panel” on page 654

### Child panels

To display this panel...	Use/do this
"Record Type Selection panel" on page 690	Select <b>Edit template</b>
"LOAD from panel" on page 652	Press Enter

### Related tasks

- "LOAD utility" on page 290
- "Selecting options on FM/DB2 panels" on page 28

## LOAD Utility Options panel

You use the LOAD Utility Options panel to specify the options that apply when you use the LOAD utility to transfer data.

These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Load Utility Options	Global Settings	
Utility Options:			
Enter "/" to select option			
Preformat unused pages			
/	Log changes	--NO-->	Do not set COPY pending flag
-	ASCII data		
-	Use IEEE floating point		
-	Allow substitution chars		
-	Enforce constraints		
-	Resume (append new data)	--NO-->	Replace existing data
			Reuse existing dataset
-	Build indexes in parallel		
	Number of index keys	0	
CCSID Values:			
	SBCS data . . . . .	0	
	Mixed DBCS data . . . . .	0	
	DBCS data . . . . .	0	
Discarded Records:			
	Maximum discards . . . . .	0	(0 means no limit)
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

#### Preformat unused pages

Indicates whether the allocated file space for a table is preformatted to enable quicker INSERT processing.

#### Log changes

Indicates whether DB2 logs details in the DB2 log of the rows loaded.

#### Do not set COPY pending flag

If **Log changes** is not selected, indicates whether DB2 is *not* to set the table space in COPY pending status.

#### ASCII data

Indicates whether the input data is ASCII.

#### Use IEEE floating point

Indicates whether floating-point numbers are in IEEE Binary Floating Point (BFP) format.

#### Allow substitution chars

Indicates whether the LOAD utility accepts substitution characters in a string.

## LOAD Utility Options panel

### Enforce constraints

Indicates whether the LOAD utility enforces check constraints and referential constraints.

### Resume (append new data)

Indicates whether records are loaded into an empty or non-empty table space, without existing data being deleted.

### Replace existing data

If **Resume (append new data)** is not selected, indicates whether the table space and all its indexes are reset to empty before records are loaded.

### Reuse existing dataset

If **Resume (append new data)** is selected, indicates whether the LOAD utility logically resets and reuses DB2-managed data sets without deleting and redefining them.

### Build indexes in parallel

Indicates whether index keys are sorted in parallel during LOAD.

### Number of index keys

Estimated number of index keys to sort.

### SBCS data

The coded character set for SBCS data in the input file.

### Mixed DBCS data

The coded character set for mixed DBCS data in the input file.

### DBCS data

The coded character set for DBCS data in the input file.

### Maximum discards

The maximum number of discarded records allowed before LOAD abends.

**Note:** FM/DB2 does not attempt to validate every possible combination of load utility options. In particular, some combinations of options fail given the current state of the DB2 object being loaded. This can mean that the DB2 load utility job will fail if an invalid combination of options has been specified. If this occurs examine the failing messages for the DB2 LOAD utility job and respond accordingly.

## Parent panels

.

## Child panels

None.

## Related tasks

- “DB2 LOAD utility options (option 3.L)” on page 49
- “LOAD utility” on page 290

## Manage DB2 Privileges panel

You use the Manage DB2 Privileges panel to display, grant, and revoke DB2 privileges.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Manage DB2 Privileges

blank Display privileges

R Revoke privileges

G Grant privileges

Object Identification Criteria:

Location . . . . .Enter \* for list

Owner . . . . .+

Name . . . . .+

In . . . . .+ Database/table/collection/schema

Processing Options:

Object Type

3

1. Database

2. Table space

3. Table

4. Column

5. Plan

6. Package

7. Collection

8. Schema

9. Type

10. Function

11. Stored procedure

12. Storage group

13. Buffer pool

14. System

15. Sequence

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

- Location

The location of the objects you want listed.
- Owner

The name of the person who created the DB2 object.
- Name

The name of the DB2 object.
- In

An optional field you can use to qualify certain object types.
- Object Type

The type of DB2 object against which privilege operations are to be performed.

### Parent panels

- “Utility Functions panel” on page 797

### Child panels

To display this panel...	Use/do this
“Privileges panels” on page 678	Blank command line
“Grant privileges panels” on page 635	“G” on command line
“Revoke privileges panels” on page 709	“R” on command line

### Related tasks

- Chapter 10, “Managing DB2 privileges,” on page 273



### Object List Line Commands panel

FM/DB2 displays the Object List Line Commands panel if you use the ? line command against an item listed on one of these panels:

- “Application Plans panel” on page 397
- “Collections panel” on page 405
- “Columns panel” on page 423
- “Database Request Modules panel” on page 536
- “Databases panel” on page 538
- “Distinct Types panel” on page 565
- “Functions panel” on page 632
- “Indexes panel” on page 645
- “Application Packages panel” on page 395
- “Schemas panel” on page 721
- “Stored Procedures panel” on page 754
- “Synonyms panel” on page 756
- “Table Spaces panel” on page 768
- “Tables, Views and Aliases panel” on page 776
- “Triggers panel” on page 785

### Related tasks

- “Line command query (?)” on page 256

Object List Utility panel

You use the Object List Utility panel to specify details about the objects you want to list or print.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Object List Utility

blank Display object listP Print object list

Object Identification Criteria:

Location . . . . .Enter \* for list

Owner . . . . .+

Name . . . . .+

Database/collect/schema . . . . .+

Additional Selection Criteria:

. . . . .Enter \* to list catalog columns

Column . . . . .

Operator . . . . .

Value . . . . .+

Processing Options:

Object Type

3

1. Database

2. Table space

3. Table/view/alias

4. Index

5. Column

6. Synonym

7. Plan

8. Package

9. Collection

10. DBRM

11. Schema

12. Distinct type

13. Function

14. Stored procedure

15. Trigger

Enter "/" to select option

/ Confirm object drop

When the object list is displayed, enter either:

"?" on the object list command field for the command prompt panel, or

"=" execute the previous command.

Command ==><div>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

- Location

The location of the objects you want listed
- Owner

The name of the person who created the DB2 object
- Name

The name of the DB2 object
- Database/collect/schema

The name of a database, a collection, or a schema
- Column

Name of column in the relevant DB2 system catalog table
- Operator

A valid SQL operator
- Value

The value to be compared with the contents of the column
- Object Type

The type of DB2 object that you want listed
- Confirm object drop

Indicates if you want FM/DB2 to display a confirmation panel each time you enter a DR(op) command against an object

Parent panels

- "Utility Functions panel" on page 797

### Child panels

To display this panel...	Use/do this
"Databases panel" on page 538	Object Type 1
"Table Spaces panel" on page 768	Object Type 2
"Tables, Views and Aliases panel" on page 776	Object Type 3
"Indexes panel" on page 645	Object Type 4
"Columns panel" on page 423	Object Type 5
"Synonyms panel" on page 756	Object Type 6
"Application Plans panel" on page 397	Object Type 7
"Application Packages panel" on page 395	Object Type 8
"Collections panel" on page 405	Object Type 9
"Database Request Modules panel" on page 536	Object Type 10
"Schemas panel" on page 721	Object Type 11
"Distinct Types panel" on page 565	Object Type 12
"Functions panel" on page 632	Object Type 13
"Stored Procedures panel" on page 754	Object Type 14
"Triggers panel" on page 785	Object Type 15

### Related tasks

- Chapter 8, "Working with lists of DB2 objects," on page 243

# OPTIONS Options panel

You use the OPTIONS Options panel to collect information used in generating an OPTIONS statement in a utility batch job.

## Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	OPTIONS Options		Global Settings
Processing Options: RESET restores installation options			
4 1. Do not create 2. OFF 3. KEY 4. Use the below options Enter "/" to select options PREVIEW 7 LISTDEFDD DD name SYSLISTD 7 TEMPLATEDD DD name SYSTEMPL - EVENT( Event spec ) Event spec:    			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev F6=Reset F7=Backward
F8=Forward	F9=Swap	F10=Actions	F12=Cancel

## Processing Options

The options in capitals are keywords that are used in the OPTIONS statement if the option is selected. For more information, see OPTIONS statement in *DB2 Utility Guide and Reference*.

The processing options are:

### 1. Do not create

When this option is selected, FM/DB2 does not create the OPTIONS statement in a utility batch job.

### 2. OFF

When this option is selected, FM/DB2 restores all default options in a utility batch job.

### 3. KEY

When this option is selected, FM/DB2 uses the KEY clause in the OPTIONS statement.

You should only use this option when instructed to do so by IBM Service. Enter the value provided by IBM Service in the **KEY** field.

### 4. Use the below options:

When this option is selected, you can select other keywords for addition to the OPTIONS statement. The relevant keyword is only added to the OPTIONS statement if the option is selected. The options are:

#### PREVIEW

When this option is selected, the generated utility batch

## OPTIONS Options panel

job, when executed, runs in PREVIEW mode. This option corresponds to the PREVIEW keyword in an OPTIONS statement.

### LISTDEFDD

When this option is selected, it specifies the DD name of the LISTDEF definition library. The default DD name for the input field is "SYSLISTD". You can enter a different DD name. The specified DD name appears as a read-only field in the "LISTDEF Options panel" on page 649.

This option corresponds to the LISTDEFDD clause in an OPTIONS statement.

### TEMPLATEDD

When this option is selected, it specifies the DD name of the TEMPLATE definition library. The default DD name for the input field is "SYSTEMPL". You can enter a different DD name. The specified DD name appears as a read-only field in the "TEMPLATE Options (1 of 2) panel" on page 779.

This option corresponds to the TEMPLATEDD clause in an OPTIONS statement.

### EVENT

When this option is selected, the utility batch job includes the specified events or events. Enter the events on the following lines. You must enter at least one. The values you enter are placed immediately after the EVENT keyword in the OPTIONS statement, without further validation by FM/DB2.

This option corresponds to the EVENT clause in an OPTIONS statement.

All fields have installation-defined defaults. You can reset all values back to the installation defaults (site policy) at will by using the RESET command or RESET PF Key. Each subsystem has its own installation-defined defaults.

As an example, the following clauses are added to any generated OPTION statement when the options in the figure are selected:

- LISTDEFDD SYSLISTD
- TEMPLATEDD SYSTEMPL

For the DB2 defaults settings of SYSLISTD for LISTDEFDD and SYSTEMPL for TEMPLATEDD, it is also acceptable to "optimize", which means to not generate these clauses, since they are the DB2 defaults.

## Parent panels

.

## Child panels

None.

## Related tasks

- “RESET primary command” on page 847
- “Setting options for DB2 utilities” on page 282
- “DB2 Utility OPTIONS options (option 3.UO)” on page 50

---

## Package Dependencies panel

FM/DB2 displays the Package Dependencies panel if you use the DEP line command against an item listed on the “Application Packages panel” on page 395.

## Child panels

None.

## Related tasks

---

## Package List panel

FM/DB2 displays the Package List panel if you use the PKL line command against an item listed on:

- The “Application Plans panel” on page 397, or
- The “Application Packages panel” on page 395, or
- The “Collections panel” on page 405

## Related tasks

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## Parents of Table panel

FM/DB2 displays the Parents of Table panel if you use the PAR line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

---

## Partitioned Table Statistics panel

FM/DB2 displays the Partitioned Table Statistics panel if you use the PST line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

---

## Plan Dependencies panel

FM/DB2 displays the Plan Dependencies panel if you use the DEP line command against an item listed on the “Application Plans panel” on page 397.

---

## Plan Enabled/Disabled Connections panel

FM/DB2 displays the Plan Enabled/Disabled Connections panel if you use the EDC line command against an item listed on the “Application Plans panel” on page 397.

## Plan Table Rows panel

FM/DB2 displays the Plan Table Rows panel if you:

- Select option **L** (List plan table rows) on the Explain Utilities panel, or
- Enter the EXPLAIN primary command on the Enter, Execute and Explain SQL Statements with the **Show results** option selected.

Use this panel to display rows from a plan table.

Process		Options		Utilities		Help											
FM/DB2		(DFA2)				Plan Table Rows		Row 1 to 1 of 1									
C	Query Q Number	Q B1	Collect. (COLLID)	Prognome (Packg)	P1 No	M T	Ac Ty	M Co	I 0	T No	Table Owner	+	Table Name	+			
		*	*	*	*	*	*	*	*	*	*	*	*	*			
	42	1	FMN2APR4	FMN2D2IO	1	0	R	0	N	1	SYSIBM		SYSTABLES				
***** END OF DB2 DATA *****																	

Command ==>										Scroll PAGE				
F1=Help		F2=Split		F3=Exit		F4=Expand		F7=Backward		F8=Forward				
F9=Swap		F10=Left		F11=Right		F12=Cancel								

Figure 112. Plan Table Rows panel (collection ID format)

The Plan Table Rows panel shows you rows from a plan table:

<b>C</b>	Input field where you can enter one of the following line commands:
<b>D</b>	Delete row
<b>DK</b>	Delete rows for package
<b>DP</b>	Delete rows for plan
<b>DQ</b>	Delete rows for query number
<b>FR</b>	Show function table rows. FM/DB2 displays the Function Table Rows panel (not shown).
<b>I</b>	Interpret EXPLAIN data
<b>IH</b>	Insert optimizer hint
<b>K</b>	Show package
<b>M</b>	Show DBRM
<b>P</b>	Show plan
<b>SR</b>	Show statement table rows. FM/DB2 displays the Statement Table Rows panel (see "Statement Table Rows panel" on page 750).
<b>T</b>	Show table
<b>UH</b>	Update optimizer hint
<b>X</b>	Show index

### Query Number

A number that identifies the SQL statement.

### Q B1

Query block number: the number reflects the query's order of appearance in the EXPLAIN statement.

<b>Collect.</b>	Collection ID or blank for dynamic EXPLAIN. This information only is displayed for the COL format of the panel.
<b>Applname</b>	PLAN name or blank for dynamic EXPLAIN. This information only is displayed for the PLAN format of the panel.
<b>Hint ID</b>	Optimization hint ID or blank for dynamic EXPLAIN. This information only is displayed for the HINT format of the panel.
<b>Progrname</b>	DBRM/package name. This information only is displayed for the COL and PLAN formats of the panel.
<b>Hint Used</b>	The optimization hint used or blank for dynamic EXPLAIN. This information only is displayed for the HINT format of the panel.
<b>Pl No</b>	Plan number. Indicates order in which the statement is run.
<b>M T</b>	Method: Join method that is used.
<b>Ac Ty</b>	Access type. Method of accessing the table.
<b>M Co</b>	Matching columns. Number of index keys used in an index scan.
<b>I O</b>	Index only. Whether only the index is accessed in this step.
<b>T No</b>	Table number. Position of the table in the statement.
<b>Table Owner</b>	Owner of the table being accessed.
<b>Table Name</b>	Name of the table being accessed.

## Parent panels

- “Explain Utilities panel” on page 600

## Child panels

To display this panel...	Use/do this
“EXPLAIN Interpretation panel” on page 599	Line command I
“Set Optimizer Hint panel” on page 730	Line commands IH, UH
“Application Packages panel” on page 395	Line command K
“Statement Table Rows panel” on page 750	Line command SR
“Tables, Views and Aliases panel” on page 776	Line command T

## Related tasks

- “Explaining SQL” on page 356
- “Managing tables used by SQL explain” on page 358

## Related references

- “COL primary command” on page 812
- “PLAN primary command” on page 841
- “HINT primary command” on page 833

---

## Primary Key for Table panel

FM/DB2 displays the Primary Key for Table panel if you use the PK line command against an item listed on the “Tables, Views and Aliases panel” on page 776.



## Primary Option Menu panel

You use the Primary Option Menu panel to select the FM/DB2 function you want to perform.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DF72)		Primary Option Menu	
0	Settings	Set processing options	User ID . : FMNUSER
1	View	View DB2 object	System ID : FMD2
2	Edit	Edit DB2 table	App1 ID . : FMN2
3	Utilities	Perform utility functions	Version . : 8.1.0
4	SQL	Prototype, execute and analyze SQL	Terminal . : 3278
5	DB2I	Start DB2 Interactive	Screen . : 1
6	Command	Enter and execute a DB2 Command	Date . . : 2008/07/27
X	Exit	Terminate FM/DB2	Time . . : 11:22
		DB2 SSID .	DF72
		SQL ID .	FMNUSER
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- (z/OS Primary Option Menu)

### Child panels

To display this panel...	Use/do this
"Set Processing Options panel" on page 738	Option 0
"DB2 View panel" on page 559	Option 1
"DB2 Edit panel" on page 544	Option 2
"Utility Functions panel" on page 797	Option 3
"SQL Prototyping, Execution and Analysis panel" on page 749	Option 4
"DB2I Primary Option Menu panel" on page 563	Option 5
"Enter and Execute DB2 Commands panel" on page 597	Option 6
"DB2 Browse panel" on page 540	Enter "B" on command line

### Related tasks

- Chapter 4, "Viewing and changing DB2 data," on page 95

## Print Audit Trail panel

You use the Print Audit Trail panel to specify the name of the Audit Trail data set to be used to generate an Audit Trail report.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Print Audit Trail	
Audit Trail:			
Data set name . . .		_____	
Description . . . .		_____	
Processing Options:			
Enter "/" to select option		Formatted display options	
/ Print only changed columns		2 1. Hex Format	
/ Keep data set after printing		/ 2. Non-display Hex	
/ Browse report		/ Highlight changes	
_ Batch execution			
Command ==> _____			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Data set name** The name of the Audit Trail data set to be used.

**Description** A description for the report. If the descriptions contains blanks, you must enclose it in quotes. This field is optional.

You can select the following options by entering a "/" in the selection field:

#### Print only changed columns

Limits the amount of printed lines.

#### Keep data set after printing

Whether to keep or delete the data set after it is printed.

**Browse report** The audit trail report is displayed using Print Browse (option 3.11).

#### Batch execution

Generates JCL for printing the audit trail report using a batch job. For command syntax, see the AUD function in *File Manager User's Guide and Reference*.

**Hex Format** To produce an UPDOWN hexadecimal display below the standard field display.

#### Non-display Hex

To produce an UPDOWN hexadecimal display below the standard field display only for fields that contain non-displayable \ characters.

#### Highlight changes

Highlight the changed fields. An asterisk is placed to left of the before data to indicate the field has been changed.

## **Print Audit Trail panel**

### **Parent panels**

- “Utility Functions panel” on page 797

### **Child panels**

None.

### **Related tasks**

- “Printing an audit trail report” on page 269

# Print Utility Options panel

You use the Print Utility Options panel to set various options for the Print utility.

## Panel and field definitions

Process
Options
Utilities
Help

FM/DB2 (DFE2)
Print Utility Options

Processing Options:
Print mode
1 1. Table
2 2. Single

Null Column Indicator:
Display . . . . .

Enter "/" to select option
/ Batch execution
/ Use uncommitted read
\_ Print HEX representation

Command ==>
F1=Help
F2=Split
F3=Exit
F7=Backward
F8=Forward
F9=Swap
F12=Cancel

### Print Mode

The format of the print output:

#### 1. Table

In Table print mode (the default mode), the rows of the table are formatted into columns and printed horizontally across the page. Each column has a heading of either the column name or a heading specified by you. Multiple rows are printed on each page. Each column of the table is formatted according to the data type for that column. For example, numeric data types are printed as whole or decimal numbers, and date and time columns are printed as dates or times. Print data might be truncated, depending on the LRECL of the print data set.

#### 2. Single

In Single mode, only one column of the table is printed on each line of the page. The columns of the table are arranged vertically on the page, with the column header on the left of the page, and the data for that column on the right. Each column of the table is formatted according to the data type for that column. For example, numeric data types are printed as whole or decimal numbers, and date and time columns are printed as dates or times.

### Display

Null Column Display Indicator. This option, applying to columns that allow DB2 nulls only, allows you to specify a character to represent the DB2 null value for the FM/DB2 print utility.

### Batch execution

Builds the necessary JCL to perform the Print function in a batch job. The

## Print Utility Options panel

generated JCL is displayed using the ISPF editor, where you can review the JCL and submit the job for batch processing.

### Use uncommitted read

Enables data to be read that has not yet been committed. The default setting is to not read uncommitted data.

**Note:** If FM/DB2 attempts to retrieve data that has a write lock, an SQL error might result.

### Print HEX representation

Prints the hexadecimal representation of the data.

## Parent panels

- “Set Processing Options panel” on page 738
- “Print Utility panel” on page 675

## Child panels

None.

## Related tasks

- “Printing the contents of a DB2 table” on page 263
- “Selecting options on FM/DB2 panels” on page 28

## Print Utility panel

You use the Print Utility panel to print the contents of a table or view.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Print Utility	
DB2 Object:			
Location . . . . .		Database . . . . .	(optional)
Owner . . . . .	SYSIBM	Table space . . . . .	(optional)
Name . . . . .	SYSCOPY +		
Row count . . . . .	20	Number of rows to print	
DB2 Template:			
Data set name . . . . .			
Member . . . . .			
Processing Options:			
Print Mode	Template usage	Enter "/", "A" always to select	
3 1. Above		- Edit options	
2. Previous		- Edit template	
3. Generate from table		- Create audit trail (*)	
4. Generate/Replace			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
F7=Backward	F8=Forward		

#### Location

The location of the DB2 object. Leave this field blank if the table or view that you want to work with is at your current location. This field is optional.

#### database

The name of the database to which you want to restrict your selection. This field is optional.

#### Owner

The authorization ID of the owner of the DB2 object. This field is optional.

#### Table space

The name of the table space to which you want to restrict your selection. This field is optional.

**Name** The name of the DB2 object.

#### Row count

The number of rows of the DB2 object you want to print.

Valid values:

**0** All rows printed

**1–99999999**  
Number of rows printed

**ALL** All rows printed

#### Data set name

The name of the template data set. It can be a fully-qualified data set name

## Print Utility panel

or a pattern. The name may include a member name or name pattern in parenthesis. If the member is specified here, the associated **Member** field must be empty.

### Member

If you specified the name of a partitioned data set (PDS) without including a member name or name pattern in parenthesis in the **Data set name** field, then you can use this field to specify the member name or a member name pattern.

### Processing Options

You can use these options to specify, amongst other things, the format in which you want the data printed, which template you want to use for the print process, and whether you want to edit the template before the print process.

#### Template usage

The Print Utility panel provides four options for template processing:

##### 1. Above

Requires that you enter the name of a template data set (and optionally a member name) in the **Template** section of the panel. If you do not specify a member name, or if you specify a pattern, FM/DB2 displays a member selection list. After you have specified the member containing a template, processing continues using this template in place of the automatically-generated template for the table (for a detailed explanation, see Template Usage option 3).

##### 2. Previous

Uses the last (previously used) template for this table.

##### 3. Generate from table

Generates a template based on the information in the DB2 catalog for the specified table. This is the default setting. If you have specified a member name in the **Template** section of the panel, it is ignored. FM/DB2 generates the required template in memory.

##### 4. Generate/Replace

Generates a template based on the information in the DB2 catalog for the specified table, and saves this information in the member specified in the **Template** section of the panel. If the member already exists, it is replaced. Any prior customization is lost.

You can select the following options by entering a "/" or an "A":

#### Edit options

Use to display the FM/DB2 print utility options, prior to printing the data for the DB2 object.

#### Edit template

Use to edit the template before printing the data.

#### Create audit trail

Controls whether access to DB2 by FM/DB2 is written to the FM/DB2 audit log. This option only appears when SAF-rule controlled auditing is in effect.

FM/DB2 may write audit records to either SMF, or a data set.

When SAF rules are used to control FM/DB2 auditing, the decision to write audit records is based on the DB2 object name being processed, and the current userid (TSO logonid). Therefore auditing may be required when processing one DB2 object, but not another. In addition, it is possible that the auditing requirement cannot be changed for a particular DB2 object; this might be different for another DB2 object, and the requirement may be different for other TSO userids.

If you do not have the authority to change the audit setting when processing a particular DB2 object, FM/DB2 prompts you if you enter the wrong setting. If you do have the authority to set the audit setting for a particular DB2 object, FM/DB2 honors whatever value is specified in this field.

## Parent panels

- “Utility Functions panel” on page 797
- “Tables, Views and Aliases panel” on page 776

## Child panels

To display this panel...	Use/do this
“Print Utility Options panel” on page 673	Select <b>Edit options</b>
“Column Selection/Edit panel” on page 419	Select <b>Edit template</b>

## Related tasks

- “Printing the contents of a DB2 table” on page 263
- “Selecting options on FM/DB2 panels” on page 28
- Chapter 3, “Working with templates,” on page 55
- “SAF-rule controlled auditing” on page 51

## Privilege details panels

These panels are:

- Application Plan Privilege Details panel
- Column Privilege Details panel
- Database Privilege Details panel
- Distinct Type Usage Privilege Details panel
- Function Privilege Details panel
- Package Privilege Details panel
- Schema Privilege Details panel
- Stored Procedure Privilege Details panel
- Table Space Use Privilege Details panel
- Table/View Privilege Details panel

FM/DB2 displays one of these panels when you specify the I line command against an object displayed in a privilege list of DB2 objects.



---

### Privileges panels

These panels are:

- Application Plan Privileges panel
- Collection Privileges panel
- Column Privileges panel
- Database Privileges panel
- Distinct Type Privileges panel
- Function Privileges panel
- Package Privileges panel
- Schema Privileges panel
- Stored Procedure Privileges panel
- Table Privileges panel
- Table Space Use Privileges panel

FM/DB2 displays one of these panels if you use the Privileges utility function (3.5) to display privilege details for an object type, or if you specify the P line command against an object displayed in a list of DB2 objects.

#### Format of privilege display panels

All of the privilege display panels use an ISPF table display of information retrieved from the DB2 catalog. You can scroll through the information in a typical ISPF manner. The information is presented in read-only format.

For each privilege display panel:

- You can use the **Cmd** field to enter a line command. The line commands you can enter vary according to the object type. To display a list of valid line commands for the type of objects you are viewing, enter a “?” in the **Cmd** field.
- Single-character fields show the current status for each privilege that can apply to the object type listed:

**Blank** The grantee does not have the specified privilege.

**Y** The grantee has the specified privilege, but cannot grant this privilege to other users.

**G** The grantee has the specified privilege, and can grant this privilege to other users.

- At the top of each column of data, immediately below the column name, there are input fields. When the panel is initially displayed, all of these input fields contain an asterisk (\*) indicating “all values”. You can use one or more of these input fields to restrict the list of objects listed. For example, by specifying BRA in the entry field below the **Grantor** column name on the Database Privileges panel shown in “Privileges panels,” the list of databases is restricted to those where the name of the grantor starts with “BRA”.

### Related tasks

- “Displaying privileges” on page 275
- Chapter 8, “Working with lists of DB2 objects,” on page 243



## Rebind Application Plan panel

```
Isolation level . . CS      (CS, RR, RS, or UR)
) CACHE(
  Cache size . . . . 3072   (Cache size in bytes for authorization IDs)
) ACQUIRE(
  Acquire at . . . . U      (Use or Allocate, Use preferred)
) RELEASE(
  Release at . . . . C      (Commit or Deallocate, Commit preferred)
) EXPLAIN(
  Explain plan . . . . N     (Yes or No to explain access path)
) CURRENTDATA(
  Inhibit blocking . .      (Yes or No)
) CURRENT SERVER(
  Server name . . . .       (blank=local, else first location)
) ENABLE(
  Enable connects . .       (use to get current values from the catalog) +
) DISABLE(
  Disable connects . .       (use to get current values from the catalog) +
)
  En/disable names . .       (use to get current values from the catalog) +
DEGREE(
  Parallelism . . . . 1     (1 or ANY)
) SQLRULES(
  Connect2 rules . . D      (DB2 or STD)
) DISCONNECT(
  Disconnect . . . . E      (Explicit, Automatic or Conditional)
) DYNAMICRULES(
  Dynamic rules . . . .     (Run or Bind)
) KEEP DYNAMIC(
  Keep dynamic SQL . N      (Yes or No)
) DEFER(PREPARE)/NODEFER(PREPARE)
  Defer prepare . . . .     (Yes or No)
) REOPT(VARS)/NOREOPT(VARS)
  Re-opt at exec . . N      (Yes or No)
) DBPROTOCOL(
  3 part protocol . . D     (DRDA or Private)
) OPTHINT(
  Access path hint . .      (Hint id)
) PATH(
  UDT/UDF/STP path . .      +
)
Command ==>
F1=Help      F2=Split    F3=Exit      F4=Expand    F7=Backward  F8=Forward
F9=Swap      F10=Left     F11=Right    F12=Cancel
```

Figure 114. Rebind Application Plan panel (2 of 2)

## Parent panels

- “Application Plans panel” on page 397

## Child panels

None.

## Related tasks

## Rebind Package panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Rebind Package		More: +
Verify rebind parameters:			
REBIND PACKAGE(			
Location . . . . .			
Collection . . . . .	DSNUTIL		+
Package . . . . .	DSNUGSQL	+	
(			
Version . . . . .			
)) OWNER(			
Package Owner . . .	ARROWSB	+	
) QUALIFIER(			
Qualifier . . . . .	ARROWSB	+	
) VALIDATE(			
Validation time . .	B	(Run or Bind, Bind preferred)	
) ISOLATION(			
Isolation level . .	CS	(CS, RR, RS, or UR)	
) RELEASE(			
Release at . . . . .	-	(Commit, Deallocate or blank)	
) EXPLAIN(			
Explain plan . . . .	N	(Yes or No)	
) CURRENTDATA(			
Inhibit blocking . .	N	(Yes or No)	
) ENABLE(			
Enable connects . .			
) DISABLE(			
Disable connects . .			
) En/disable names .			
DEGREE(			
Parallelism . . . . .	1	(1 or ANY)	
) DYNAMICRULES(			
Dynamic rules . . . .	-	(Run or Bind)	
) KEEP DYNAMIC(			
Keep dynamic SQL . .	N	(Yes or No)	
) DEFER(PREPARE)/NODEFER(PREPARE)			
Defer prepare . . . .	-	(Yes or No)	
) REOPT(VARS)/NOREOPT(VARS)			
Re-opt at exec . . . .	N	(Yes or No)	
) DBPROTOCOL(			
3 part protocol . . .	D	(DRDA or Private)	
) OPTHINT(			
Access path hint . .	(Hint id)		
) PATH(			
UDT/UDF/STP path . .			
)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
		F7=Backward	F8=Forward

### Parent panels

- “Application Packages panel” on page 395

### Child panels

None.

**Rebind Package panel**

## **Related tasks**

## REBUILD (Indexes for Table Spaces) panel

You use the REBUILD (Indexes for Table Spaces) panel to generate utility control statements using the REBUILD INDEX (ALL) TABLESPACE form of REBUILD utility.

### Panel and field definitions

Process		Options		Utilities		Help			
FM/DB2 (DFA2)		REBUILD (Indexes for Table Spaces)		Row 1 to 12 of 133					
S	P								
e	R								
l	C	Database	Table Space	Part'n Number	Reuse	WORKDDN	Sort		
						Template	Device		
							Sort Num		
							Sort Keys		
		DSN8D81A	DSN8S81D	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81E	1	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81E	2	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81E	3	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81E	4	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81E	5	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81P	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81R	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81A	DSN8S81S	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81E	DSN8S81U	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81P	DSN8S81C	0	N	SYSUT1	N	SYSALLDA 4	Y
		DSN8D81P	DSN8S81Q	0	N	SYSUT1	N	SYSALLDA 4	Y
Command ==>								Scroll	PAGE
F1=Help		F2=Split		F3=Exit		F7=Backward		F8=Forward	
F12=Cancel								F9=Swap	

**Sel** Selection column. To select a table space, type S in this column. Selected table spaces show an asterisk (\*) in the **PRC** column.

**PRC** Processing indicator. An asterisk (\*) indicates the item is selected.

**Database** The name of the database in which the table space is defined.

**Table Space** The name of the table space.

#### Part'n Number

The partition number for the table space. This is 0 for a non-partitioned table space. For a partitioned table space, the number represents the partition of the table space. There is one row in the table for each partition of a partitioned table space. This is a display-only field.

**Reuse** Controls whether DB2 deletes and redefines the index space data set as part of the rebuild operation:

**YES** Keeps the existing data set.

**NO** Deletes and redefines the index space data set.

**WORKDDN** The ddname for the optional temporary work file used by the utility job. The value displayed is either SYSUT1, or another value if you have changed the default ddname. You can type a new value.

#### WORKDDN Template

Indicates whether the value of the associated **WORKDDN** field is a template name.

## REBUILD (Indexes for Table Spaces) panel

### Sort Device Type

The device type used by the utility to allocate sort data sets. The value displayed is either SYSALLDA, or another value if you have changed the default device type. You can type a new value.

### Sort Num

The number of sort data sets used by the utility. The value displayed is either 4, or another value if you have changed the default setting. You can type a new value.

### Sort Keys

Controls whether the REBUILD utility rebuilds indexes in parallel:

**YES** Builds the indexes in parallel.

**NO** Does not build the indexes in parallel.

You can type a new value.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “REBUILD utility” on page 296
- “REBUILD utility (indexes for table spaces)” on page 297
- “Loading data described by a copybook or template” on page 293

## REBUILD (Indexes for Table Spaces) with LISTDEF panel

You use the REBUILD (Indexes for Table Spaces) with LISTDEF panel to generate utility control statements using the REBUILD INDEX TABLESPACE form of the REBUILD utility.

### Panel and field definitions

Process	Options	Utilities	Help																		
FM/DB2 (DFA2)	REBUILD (Indexes for Table Spaces)		Row 1 to 1 of 1																		
<p>P</p> <p>R LISTDEF</p> <table> <thead> <tr> <th>Cmd</th> <th>C Name</th> <th>Reuse</th> <th>WORKDDN</th> <th>Template</th> <th>Type</th> <th>Device</th> <th>Sort Num</th> <th>Sort Keys</th> </tr> </thead> <tbody> <tr> <td></td> <td>LDEF1</td> <td>N</td> <td>SYSUT1</td> <td>N</td> <td>SYSALLDA</td> <td>4</td> <td>Y</td> <td></td> </tr> </tbody> </table> <p>***** Bottom of data *****</p>				Cmd	C Name	Reuse	WORKDDN	Template	Type	Device	Sort Num	Sort Keys		LDEF1	N	SYSUT1	N	SYSALLDA	4	Y	
Cmd	C Name	Reuse	WORKDDN	Template	Type	Device	Sort Num	Sort Keys													
	LDEF1	N	SYSUT1	N	SYSALLDA	4	Y														
<p>Command ==&gt;</p> <p>F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap</p> <p>F12=Cancel</p>																					

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.



### Related tasks

- “REBUILD utility” on page 296
- “REBUILD utility (indexes for table spaces)” on page 297

REBUILD Utility (Indexes) panel

You use the REBUILD Utility (Indexes) panel to generate utility control statements using the REBUILD INDEX (index\_name) form of the REBUILD utility.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)REBUILD Utility (Indexes)Row 1 to 1 of 1

P

R LISTDEF

Cmd C Name

Reuse

WORKDDN

Template

Device

Sort

Sort

Num

Keys

LDEFNAME1

N

SYSUT1

N

SYSALLDA

4

Y

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=ForwardF9=SwapF10=LeftF11=RightF12=Cancel

ScrollPAGE

- Cmd

Selection column. To select an index, type S in this column. Selected indexes show an asterisk (\*) in the **PRC** column.
- PRC

Processing indicator. An asterisk (\*) indicates the item is selected.
- Index Owner

The name of the owner of the index.
- Index Name

The name of the index.
- Part'n Number

The partition number for the index. This is 0 for a non-partitioned index. For a partitioned index, the number represents the partition of the index. There is one row in the table for each partition of a partitioned index. This is a display-only field.
- Reuse

Controls whether DB2 deletes and redefines the index data set as part of the rebuild operation:  
**YES** Keeps the existing data set.  
**NO** Deletes and redefines the index data set.
- WORKDDN

The ddname for the optional temporary work file used by the utility job. The value displayed is either SYSUT1, or another value if you have changed the default ddname. You can type a new value.
- WORK DDN Template

Indicates whether the value of the associated **WORKDDN** field is a template name.
- Sort Device Type

The device type used by the utility to allocate sort data sets. The

## REBUILD Utility (Indexes) panel

	value displayed is either SYSALLDA, or another value if you have changed the default device type. You can type a new value.
<b>Sort Num</b>	The number of sort data sets used by the utility. The value displayed is either 4, or another value if you have changed the default setting. You can type a new value.
<b>Sort Keys</b>	Controls whether the utility rebuilds indexes in parallel: <b>YES</b> Builds the indexes in parallel. <b>NO</b> Does not build the indexes in parallel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “REBUILD utility” on page 296
- “REBUILD utility (indexes)” on page 296
- “Loading data described by a copybook or template” on page 293

## REBUILD (Indexes) with LISTDEF panel

You use the REBUILD (Indexes) with LISTDEF panel to generate utility control statements using the REBUILD INDEX TABLESPACE form of the REBUILD utility.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		REBUILD Utility (Indexes)				Row 1 to 2 of 2	
P						Sort	
R LISTDEF				WORKDDN		Device	
Cmd	C Name	Reuse	WORKDDN	Template	Type	Num	Keys
	FRED	N	SYSUT1	N	SYSALLDA	4	Y
	* GEORGE	N	SYSUT1	N	SYSALLDA	4	Y
***** Bottom of data *****							
Command ==>							
F1=Help		F2=Split		F3=Exit		F7=Backward	
F12=Cancel				F8=Forward		F9=Swap	
						Scroll	PAGE

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “REBUILD utility” on page 296
- “REBUILD utility (indexes)” on page 296

## Record Type Selection panel

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
File Manager		Record Type Selection	Line 1 of 2
Cmd SIE	Field Name	Prompt	Offset Length
	**** Top of data ****		
___ IE	REC-TYPE01		0 80
___ SI	REC-TYPE02		0 80
	**** End of data ****		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F12=Cancel
			Scroll PAGE
			F6=RunTemp

### Parent panels

- "LOAD Utility - Using Templates panel" on page 657

### Child panels

None.

### Related tasks

## RECOVER Utility (Index Spaces) panel

You use the RECOVER Utility (Index Spaces) panel to generate utility control statements using the RECOVER INDEXSPACE form of the RECOVER utility. You can only copy and recover indexes that have been created with the COPY YES clause.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		RECOVER Utility (Index Spaces)	Row 1 to 7 of 7

S	P	Index	DS	Re-	Image Copy Data Set Name	
l	C	Database Space	Num	ICDATE	ICTIME	use
—		GKDB1 XDEPT1	0	010914	072244	N GKELLY.GKDB1.XDEPT1.F00000.D257072
—		GKDB1 XDEPT1	0	010913	145941	N GKELLY.GKDB1.XDEPT1.F00000.D256145
—		GKDB1 XDEPT1	0	010913	145747	N GKELLY.GKDB1.XDEPT1.F00000.D256145
—		GKDB1 XDEPT1	0	010913	144945	N GKELLY.GKDB1.XDEPT1.F00000.D256144
—		UTILBIG1 T14RIX1	0	010701	160346	N OSPEED.ICOPY.UTILBIG1.T14RIX1.D182
—		UTILBIG1 UVBRIX1	0	010701	160524	N OSPEED.ICOPY.UTILBIG1.UVBRIX1.D182
—		UTILDB1 T1RIX1	0	010411	104512	N OSPEED.UTILDB1.T1RIX1.F00000.D1011
***** Bottom of data *****						

Command ==> \_\_\_\_\_ Scroll PAGE

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F12=Cancel

The fields in the ISPF table part of the panel are:

- Sel** Selection column. Type S to select an index.
- PRC** Processing column. An asterisk (\*) indicates the selected index spaces.
- Database** The name of the database in which the index space is defined.
- Index Space** The name of the index space.
- DS Num** The partition number for this table space. Non-partitioned table spaces have a partition number of 0. For a partitioned table space, the number indicates the partition of the table space.
- ICDATE** The date that the image copy was taken. The format is *yymmdd*.
- ICTIME** The time that the image copy was taken. The format is *hhmmss*.
- Reuse** Reuse option:
- Y** The data set for the index space is not deleted and is re-defined as part of the RECOVER utility processing.
  - N** The data set for the index space is deleted and redefined as part of the RECOVER utility processing.
- Image copy data set name**
- The name (which must be cataloged) of the image copy data set. Note that the existence of an entry in the catalog table does not mean that the data set still exists.

## **RECOVER Utility (Index Spaces) panel**

### **Parent panels**

- “DB2 Utilities panel” on page 556

### **Child panels**

None.

### **Related tasks**

- “RECOVER (index spaces)” on page 301

## RECOVER Utility (Index Spaces) with LISTDEF panel

You use the RECOVER Utility (Index Spaces) with LISTDEF panel to generate utility control statements using the RECOVER INDEXSPACE form of the RECOVER utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		RECOVER Utility (Index Spaces)	Row 1 to 1 of 1
P			
R	LISTDEF		
Cmd	C Name	Reuse	
	LDEF1	N	
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			Scroll PAGE

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)  
**R(n)** Repeat the current row (n times)  
**D(n)** Delete (n) row(s)  
**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- "DB2 Utilities panel" on page 556

### Child panels

None.



### Related tasks

- “RECOVER utility” on page 298
- “RECOVER (index spaces)” on page 301

## RECOVER Utility (Table Spaces) panel

You use the RECOVER Utility (Table Spaces) panel to generate utility control statements using the RECOVER TABLESPACE form of the RECOVER utility.

### Panel and field definitions

Process		Options		Utilities		Help	
FM/DB2 (DFA2)		RECOVER Utility (Table Spaces)				Row 1 to 12 of 131	
S	P						
e	R	Table	DS		T	Re-	bld
l	C	Database Space	Num	ICDATE	ICTIME	p	use Idx
							Image Copy Data Set Name
		BILLSDB1 TS1D	0	010524	165000	F	N Y OSPEED.BILLSDB1.TS1D.C00000.
		CJMAODA CJMAOSD	0	010526	060718	F	N Y CJMAON.DB26.SYSCOPY.CJMAODA.
		CJMAODA CJMAOSE	0	010526	060719	F	N Y CJMAON.DB26.SYSCOPY.CJMAODA.
		CJMAODA CJMAOSE	3	010526	074016	F	N Y CJMAON.DB26.CJMAODA.CJMAOSE.
		CJMAODA CJMAOSP	0	010526	060719	F	N Y CJMAON.DB26.SYSCOPY.CJMAODA.
		CJMAODP CJMAOSC	0	010526	060729	F	N Y CJMAON.DB26.COPYDDN.CJMAODP.
		CJMAODP CJMAOSC	0	010526	060719	F	N Y CJMAON.DB26.SYSCOPY.CJMAODP.
		DSNDB01 SCT02	0	001228	150606	F	N Y DB2.V7R1M0.IMAGCOPY.SCT02
		DSNDB01 SPT01	0	001228	150608	F	N Y DB2.V7R1M0.IMAGCOPY.SPT01
		DSNDB01 SYSLGRNX	0	001228	150628	F	N Y DB2.V7R1M0.IMAGCOPY.SYSLGRNX
		DSNDB04 PLANRTAB	0	010419	133458	F	N Y GRAHAMP.DSNDB04.PLANRTAB.F00
		DSNDB04 USERS	0	010419	133500	F	N Y GRAHAMP.DSNDB04.USERS.F00000
Command ==> Scroll PAGE							
F1=Help		F2=Split		F3=Exit		F7=Backward F8=Forward F9=Swap	
F12=Cancel							

The fields in the ISPF table part of the panel are:

<b>Sel</b>	Selection column. Type S to select a table space.
<b>PRC</b>	Processing column. An asterisk (*) indicates the selected table spaces.
<b>Database</b>	The name of the database in which the table space is defined.
<b>Table Space</b>	The name of the table space.
<b>DS Num</b>	The partition number for this table space. Non-partitioned table spaces have a part number of 0. For a partitioned table space, the number indicates the partition of the table space.
<b>ICDATE</b>	The date that the image copy was taken. The format is <i>yymmdd</i> .
<b>ICTIME</b>	The time that the image copy was taken. The format is <i>hhmmss</i> .
<b>Typ</b>	The type of entry found in the SYSIBM.SYSCOPY table: F Full image copy. I Incremental image copy.
<b>Reuse</b>	Reuse option: Y The data set for the table space is not deleted and re-defined as part of the RECOVER utility processing. N The data set for the table space is deleted and redefined as part of the RECOVER utility processing.
<b>Re-bld Idx</b>	Rebuild indexes after recovery: Y A REBUILD INDEX (ALL) TABLE SPACE command is

## RECOVER Utility (Table Spaces) panel

included in the JCL to perform a full rebuild of all of the indexes on all of the tables in the table space. This is the standard method for recovering a table space, and prevents the indexes being left in an unusable rebuild pending (RBDP) state.

N        Indexes not rebuilt.

### Image copy data set name

The name (which must be cataloged) of the image copy data set. Note that the existence of an entry in the catalog table does not mean that the data set (still) exists.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “RECOVER (table spaces)” on page 299

## RECOVER Utility (Table Spaces) with LISTDEF panel

You use the RECOVER Utility (Table Spaces) with LISTDEF panel to generate utility control statements using the RECOVER INDEXSPACE form of the RECOVER utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		RECOVER Utility (Table Spaces)	Row 1 to 2 of 2
P			
R LISTDEF			
Cmd	C Name		Reuse
*	FRED		N
	GEORGE		N
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)  
**R(n)** Repeat the current row (n times)  
**D(n)** Delete (n) row(s)  
**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “RECOVER utility” on page 298
- “RECOVER (table spaces)” on page 299

---

### Recovery Information panel

FM/DB2 displays the Recovery Information panel if you use the ICS line command against an item listed on:

- The “Databases panel” on page 538, or
- The “Table Spaces panel” on page 768, or
- The “Indexes panel” on page 645

## Related tables panel

You use the Related tables panel to display information about the tables related to the table being edited when you issued the REDIT command.

The panel displays a selection list showing all the DB2 objects that are directly related to the object being edited by an RI constraint. This includes tables that are parent tables in a relationship with the table being edited, and tables that are dependent tables in a relationship with the table being edited.

## Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFE2)	Related tables for: DSN8910.EMP		Top of 4
4 rows fetched			Format TABL
	RELATED	RELATED	COUNT
SEL	TABLE	TABLE	RELATIONSHIP
	OWNER	NAME	NAME
	*	*	TYPE
	#1--+-	#2--+-	#3--+-1--
****	Top of data	****	
	DSN8910	DEPT	RDE
	DSN8910	EMPPROJACT	REPAE
	DSN8910	PROJ	RESPEMP
	DSN8910	DEPT	RED
****	End of data	****	
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F6=RChange
			F12=Cancel

The entries shown on the Related tables panel depend on the cursor position when you issued the REDIT command:

- If the cursor was not on the data for a column that is part of a foreign, parent or primary key, all related tables are shown.
- If the cursor was on the data for a column that is part of a foreign, parent or primary key, only the related tables that include that column in a foreign, parent or primary key are shown.

The columns that are displayed include the SEL field, and columns of SYSIBM.SYSRELS.

<b>SEL</b>	Selection column. You can issue any of these line commands against the DB2 objects in the list:
<b>A</b>	Alter table.
<b>ALS</b>	Show aliases.
<b>B</b>	Browse table. (See Note 1)
<b>C</b>	Copy table.
<b>CDI</b>	Show column distribution statistics.
<b>CH</b>	Show child (dependent) tables.
<b>CHR</b>	Show child (dependent) relations.
<b>CK</b>	Show table check constraints.
<b>COL</b>	Show columns.
<b>CON</b>	Show table (unique and primary) constraints.

## Related tables panel

<b>D</b>	Show database.
<b>E</b>	Edit table. (See Note 1)
<b>EE</b>	Edit table - new session. (See Note 3)
<b>FK</b>	Show foreign keys.
<b>I</b>	Details about table or view.
<b>KEY</b>	Show relationship keys. (See Note 2)
<b>P</b>	Show privileges.
<b>PA</b>	Show parent tables.
<b>PAR</b>	Show parent relations.
<b>PK</b>	Show primary key.
<b>PKG</b>	Show packages.
<b>PL</b>	Show plans.
<b>PR</b>	Print table.
<b>PST</b>	Show partition statistics.
<b>ROW</b>	Show all columns for this row.
<b>S</b>	Show table spaces.
<b>SYN</b>	Show synonyms.
<b>V</b>	View table. (See Note 1)
<b>VE</b>	View table - new session. (See Note 3)
<b>VW</b>	Show views.
<b>X</b>	Show indexes.
<b>XC</b>	Show indexes and index columns.

### Notes:

1. The E, B, and V commands edit, browse, or view the object by stacking a new FM/DB2 editor session on top of the existing FM/DB2 editor session. You cannot return to the original FM/DB2 editor session without first ending the new FM/DB2 editor session.
2. For a parent relationship type, the KEY command shows the primary keys for the two tables in the relationship.  
For a dependent relationship type, the KEY command shows the foreign key columns for the two tables in the relationship.
3. The EE and VE commands edit (or view) the object by starting a new ISPF logical session (split screen) and then starting an FM/DB2 editor session in the new logical session.
  - When the REDIT command was issued and the cursor was not located on the data for a column that is part of a parent, primary or foreign key, the new FM/DB2 editor session shows all rows of the table.
  - When the REDIT command was issued with the cursor located on the data for a column that is part of a parent, primary or foreign key, the new FM/DB2 editor session only shows those rows related to the row where the cursor was located.

The FM/DB2 editor session of the related table may have no rows when:

- For a dependent table, there are no rows in the table with a matching foreign key value.
- For a parent table, the foreign key value contains one or more columns with the DB2 null value.

## Parent panels

- "Table Browse panel" on page 758
- "Table Edit panel" on page 761
- "Table View panel" on page 770

## **Child panels**

Various. Depends on which line command entered.

## **Related tasks**

- “Specifying a DB2 object name” on page 29
- “Listing related tables” on page 151
- “Displaying or printing a list of objects” on page 244
- “DB2 Location Selection panel” on page 549



## Remote DB2 Location Selection panel

You use the Remote DB2 Location Selection panel to display all the available remote locations. You can only access remote locations that have been defined to your local DB2 subsystem.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Remote DB2 Location Selection	Row 1 to 4 of 4
Sel Location			
*			
-			
QXPMVS8DB2D			
-			
QXPMVS8DB26			
-			
QXPMVS6DB2D			
-			
QXPMVS8DB62			
***** END OF DB2 DATA *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval
F9=Swap	F12=Cancel	F7=Up	F8=Down

**Sel** Selection column. Type S to select a location.

**Location** The name of the location.

### Parent panels

An asterisk (\*) or pattern entered in the **Location** field on any Object List utility panel.

### Child panels

None.

### Related tasks

- “Specifying a DB2 object name” on page 29
- “Displaying or printing a list of objects” on page 244
- “DB2 Location Selection panel” on page 549

## REORG Utility (Indexes) panel

You use the REORG Utility (Indexes) panel to generate utility control statements using the REORG INDEX form of the REORG utility.

### Panel and field definitions

Process		Options	Utilities	Help
FM/DB2 (DFA2)		REORG Utility (Indexes)		Row 1 to 12 of 344
S P			U C C	Reuse
e R Index	Index	Prt n l l Cls	Leaf Off	Data
l C Owner + Name		+ Num i g d Rat Dist	Pos Set	
— fmdb2	TABLE19_UNIQUE	0 U Y Y ? ?	? ?	N
— fmdb2!	TABLE20_UNIQUE	0 U Y Y ? ?	? ?	N
— thing	ix1	0 U Y N ? 0	? ?	N
— ARROWSB	T1_IX1	0 P Y Y ? ?	? ?	N
— ARROWSB	T3_IX1	0 P Y Y ? ?	? ?	N
— ARROWSB	XDEPT1	0 P N N ? ?	? ?	N
— ARROWSB	XDEPT2	0 D N N ? ?	? ?	N
— ARROWSB	XDEPT3	0 D N N ? ?	? ?	N
— ARROWSB	XEMP1	1 P Y Y ? ?	? ?	N
— ARROWSB	XEMP1	2 P Y Y ? ?	? ?	N
— ARROWSB	XEMP1	3 P Y Y ? ?	? ?	N
— ARROWSB	XEMP1	4 P Y Y ? ?	? ?	N
Command ==>				
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward
F9=Swap	F10=Left	F11=Right	F12=Cancel	F8=Forward

<b>Sel</b>	Selection column. Type S to select an index.
<b>PRC</b>	Processing column. An asterisk (*) indicates the selected index.
<b>Index Creator</b>	The name of the creator of the index.
<b>Index Name</b>	The name of the index.
<b>Part Num</b>	The partition number for the index. For a non-partitioned index, this is 0. Partitioned indexes appear as multiple rows, one row for each partition of the index. This is a display-only field
<b>Uni</b>	The UNIQUE RULE flag for the index, from the SYSINDEXES catalog table
<b>Clg</b>	The CLUSTERING flag for the index, from the SYSINDEXES catalog table.
<b>Cld</b>	The CLUSTERED flag for the index, from the SYSINDEXES catalog table.
<b>Cls Rat</b>	The CLUSTERRATIO flag for the index, from the SYSINDEXES catalog table.
<b>Leaf Dist</b>	The LEAFDIST flag for the index, from the SYSINDEXPART catalog table.
<b>Off Pos</b>	This is a display-only field. This value indicates the number of rows relocated out of their optimal position for the index. If the CARD value for the index is greater than zero, the value is calculated using the expression:  (AVG(NEAROFFPOS + FAROFFPOS) * 100)/CARD

## REORG Utility (Indexes) panel

This value helps you identify indexes that might require organization. For more information, see the *DB2 Utility Guide and Reference*.

### Reuse Data set

Whether DB2 physically deletes and redefines the data sets for the index:

- Y Data set for the index reused.
- N Data set for the index not reused. This is the default setting.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “REORG (indexes)” on page 304

## REORG Utility (Indexes) with LISTDEF panel

You use the REORG Utility (Indexes) with LISTDEF panel to generate utility control statements using the REORG INDEX form of the REORG utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		REORG Utility (Indexes)	Row 1 to 2 of 2
P		Reuse	
R	LISTDEF	Data	
Cmd	C Name	Set	
	FRED	N	
*	JAMES	N	
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			Scroll PAGE

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “REORG utility” on page 302
- “REORG (indexes)” on page 304

## REORG Utility (Table Spaces) panel

You use the REORG Utility (Table Spaces) panel to generate utility control statements using the REORG TABLESPACE form of the REORG utility.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		REORG Utility (Table Spaces)	Row 1 to 12 of 229
S P	Table	Avg Avg Unload	Reuse
e R Database	Space	Prt Ind Off External Log	Data
l C Name	Name	Num Ref Pos (Y/N) (Y/N)	Set
—	BILLSDB1 TS1D	0 ? ? N N N	
—	BILLSDB1 TS1E	1 ? ? N N N	
—	BILLSDB1 TS1E	2 ? ? N N N	
—	BILLSDB1 TS1E	3 ? ? N N N	
—	BILLSDB1 TS1E	4 ? ? N N N	
—	BILLSDB2 UTILTS1	0 ? ? N N N	
—	CJMAODA CJMAOSD	0 0 0 N N N	
—	CJMAODA CJMAOSE	1 0 0 N N N	
—	CJMAODA CJMAOSE	2 ? ? N N N	
—	CJMAODA CJMAOSE	3 0 0 N N N	
—	CJMAODA CJMAOSE	4 ? ? N N N	
—	CJMAODA CJMAOSP	0 0 0 N N N	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Sel** Selection column. Type S to select a table space.

**PRC** Processing column. An asterisk (\*) indicates the selected table space.

#### Database Name

The name of the database in which the table space is defined.

#### Table Space Name

The name of the table space.

#### Prt Num

The partition number for the table space. This is 0 for a non-partitioned table space. Partitioned table spaces appear as multiple rows, one row for each partition of the table space. This is a display-only field.

#### Avg Ind Ref

This is a display-only field. This is an average value for the number of rows relocated out of their original position. If the table space/partition's cardinality is greater than zero, the calculated value is:

$$(\text{AVG}(\text{NEARINDREF} + \text{FARINDREF}) * 100) / \text{CARD}$$

This value helps you identify table spaces that might require organization. For more information about these values, see the *DB2 Utility Guide and Reference*.

#### Avg Off Pos

This is a display-only field. This is an average value for the number of rows relocated out of their optimal position for all indexes within the table space or partition. The average is for all indexes which have a CARD value greater than zero, using the expression:

$(AVG(NEAROFFPOS + FAROFFPOS) * 100) / CARD$

This value helps you identify table spaces that might require organization. For more information, see the *DB2 Utility Guide and Reference*.

### Unload External (Y/N)

Whether the REORG process leaves the data in external format and therefore acts as an *unload utility*:

- Y REORG processing halts at the unload phase and leaves the data in external format in the SYSREC00 data set. Load control cards are produced in the SYSPUNCH data set. The data produced is in a format suitable for loading into any similar table structure, in any DB2 subsystem. The DD names in the job and resultant SYSPUNCH are compatible with the DSNTIAUL sysrec naming (for example, SYSREC00), therefore the FM/DB2 LOAD Utility can accept both formats, without requiring any JCL editing before submission.
- N Full REORG performed.

### Log (Y/N)

LOG option:

- Y Changes written to the DB2 log.
- N Changes not written to the DB2 log. This is the default setting.

For more information, see the *DB2 Utility Guide and Reference*.

### Reuse Data Set

Reuse option:

- Y The data set for the table space is not deleted and re-defined as part of the RECOVER utility processing.
- N The data set for the table space is deleted and redefined as part of the RECOVER utility processing.

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “REORG (table spaces)” on page 302

REORG Utility (Table Spaces) with LISTDEF panel

You use the REORG Utility (Table Spaces) with LISTDEF panel to generate utility control statements using the REORG TABLESPACE form of the REORG utility.

Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		REORG Utility (Table Spaces)	Row 1 to 2 of 2
P		Unload	Reuse
R	LISTDEF	External Log	Data
Cmd	C Name	(Y/N)	(Y/N) Set
*	FRED	N	N
	JAMES	N	N
***** Bottom of data *****			
Command ==>		Scroll PAGE	
F1=Help		F2=Split	F3=Exit
F12=Cancel		F7=Backward	F8=Forward
		F9=Swap	

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

**LISTDEF Name** On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

Parent panels

- “DB2 Utilities panel” on page 556

Child panels

None.

Related tasks

- “REORG utility” on page 302
- “REORG (table spaces)” on page 302

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## Revoke privileges panels

These panels are:

- Revoke Application Plan Privileges panel
- Revoke Buffer Pool Privileges panel
- Revoke Collection Privileges panel
- Revoke Column Privileges panel
- Revoke Database Privileges panel
- Revoke Distinct Type Privileges panel
- Revoke Function Privileges panel
- Revoke Package Privileges panel
- Revoke Schema Privileges panel
- Revoke Sequence Privileges panel
- Revoke Storage Group Privileges panel
- Revoke Stored Procedure Privileges panel
- Revoke System Privileges panel
- Revoke Table Privileges panel
- Revoke Table Space Use Privileges panel

FM/DB2 displays one of these panels if you use the Privileges utility function (3.5) to revoke privileges for an object type, or if you specify the R line command against an object displayed in a list of DB2 objects.

### Format of revoke privilege panels

The revoke privileges panels are similar to the corresponding grant privilege panels. However, in place of the **To** field, the revoke privileges panels contain the following fields:

- A **From** field. Use this field to specify the SQLID of the user for whom the privileges are to be revoked (the revokee).
- A **By** field. Use this field to specify the SQLID of the user who granted the privileges (the grantor), or "ALL" to indicate all grantors.

## Related tasks

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### Routine Parameters panel

FM/DB2 displays the Routine Parameters panel if you use the PARM line command against an item listed on:

- The "Functions panel" on page 632, or
- The "Stored Procedures panel" on page 754



## Row Selection Criteria panel

You use the Row Selection Criteria panel to specify row selection criteria by column.

### Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Row Selection CriteriaLine 1 of 14

Cmd	Con	Column name	Op	Value	
<->	-	<-----1-----+-----2-----3----->	<->	<-----1-----+-----2-----+--	
***	***	Top of data	***		
		EMPNO			
AND		FIRSTNME			
AND		MIDINIT			
AND		LASTNAME			
AND		WORKDEPT			
AND		PHONENO			
AND		HIREDATE			
AND		JOB			
AND		EDLEVEL			
AND		SEX			
AND		BIRTHDATE			
AND		SALARY			
AND		BONUS			
AND		COMM			
Command	==>			Scroll PAGE	
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F5=RFind	F6=RunTemp
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

- Cmd

Prefix command column.
- You can use the following prefix commands when editing row selection criteria by column:
- A

Identifies the line after which data is to be moved or copied.
- B

Identifies the line before which data is to be moved or copied.
- C

Copy one line.
- Cn

Copy *n* rows.
- CC

Copy block of lines. Mark start and end of block.
- D

Delete one line.
- Dn

Delete *n* lines.
- DD

Delete block of lines. Mark start and end of block.
- M

Move one line.
- Mn

Move *n* lines.
- MM

Move block of lines. Mark start and end of the block.
- R

Repeat one line.
- Rn

Repeat *n* lines.

	<b>RR</b>	Repeat block of lines. Mark start and end of the block.				
	<b>RR<i>n</i></b>	Repeat block of lines <i>n</i> times. Mark start and end of block.				
<b>Con</b>	Connector column.  You specify the AND and OR connectors in this column. The default value is AND. You can use abbreviations. For example, if you overtype the existing connector, AND, with 0, FM/DB2 generates an OR connector.  Connectors are only relevant to lines containing expressions (that is, where you have specified an operator in the <b>Op</b> column).  You can overtype the existing connector with one of the following values: <table><tr><td><b>AND</b> or <b>&amp;</b></td><td>FM/DB2 generates an AND connector in the resultant WHERE clause.</td></tr><tr><td><b>OR</b> or <b> </b></td><td>FM/DB2 generates an OR connector in the resultant WHERE clause.</td></tr></table>		<b>AND</b> or <b>&amp;</b>	FM/DB2 generates an AND connector in the resultant WHERE clause.	<b>OR</b> or <b> </b>	FM/DB2 generates an OR connector in the resultant WHERE clause.
<b>AND</b> or <b>&amp;</b>	FM/DB2 generates an AND connector in the resultant WHERE clause.					
<b>OR</b> or <b> </b>	FM/DB2 generates an OR connector in the resultant WHERE clause.					
<b>(</b>	Left parenthesis column.  If you need to define the sequence of evaluation for the resultant WHERE clause by enclosing part of the clause in parentheses, use this column to type a left parenthesis "(" at the appropriate point.  You can only use a parenthesis on a line containing expressions (that is, where you have specified an operator in the <b>Op</b> column). The number of left parentheses must match the number of right parentheses.					
<b>Column name</b>	The name of the column.  On 80-byte screens, FM/DB2 displays either the column name details (the default) or the data type details for the column. To toggle between FM/DB2 displaying the <b>Column name</b> and <b>Data type(length)</b> details, press the PF11 function key.					
<b>Data type(length)</b>	The DB2 data type and, where applicable, length of the column.  On 80-byte screens, FM/DB2 displays either the column name details (the default) or the data type details for the column. To toggle between FM/DB2 displaying the <b>Column name</b> and <b>Data type(length)</b> details, press the PF11 function key.					
<b>Op</b>	Operator column. Operators are used to create expressions. When you type an operator in the <b>Op</b> column, it indicates that you want FM/DB2 to form an expression using the column name on that line of the panel, the operator you have specified and, with the exception of the operators NL, ¬NL, and>NNL, the contents of the <b>Value</b> column.  FM/DB2 supports the following operators: <table><tr><td><b>=</b> or <b>EQ</b></td><td>True if the terms are equal (numerically, or when padded).</td></tr><tr><td><b>¬=</b> or <b>NE</b></td><td>True if the terms are not equal (inverse of =)</td></tr></table>		<b>=</b> or <b>EQ</b>	True if the terms are equal (numerically, or when padded).	<b>¬=</b> or <b>NE</b>	True if the terms are not equal (inverse of =)
<b>=</b> or <b>EQ</b>	True if the terms are equal (numerically, or when padded).					
<b>¬=</b> or <b>NE</b>	True if the terms are not equal (inverse of =)					

## Row Selection Criteria panel

> or <b>GT</b>	Greater than
< or <b>LT</b>	Less than
>= or <b>GE</b>	Greater than or equal to
\= or <b>¬&lt;</b>	Not less than
<= or <b>LE</b>	Less than or equal
\> or <b>¬&gt;</b>	Not greater than
<b>LK</b>	LIKE predicate. Column must not be numeric.
<b>¬LK</b> or <b>NLK</b>	NOT LIKE. Column must not be numeric.
<b>BTW</b>	BETWEEN. <b>Value</b> must be in the form <i>value1,value2</i> .
<b>¬BT</b> or <b>NBT</b>	NOT BETWEEN. <b>Value</b> must be in the form <i>value1,value2</i> .
<b>IN</b>	IN. <b>Value</b> must be in the form <i>value1,value2,...</i>
<b>¬IN</b> or <b>NIN</b>	NOT IN. <b>Value</b> must be in the form <i>value1,value2,...</i>
<b>NL</b>	IS NULL. <b>Value</b> must be blank.
<b>¬NL</b> or <b>NNL</b>	IS NOT NULL. <b>Value</b> must be blank.
<b>RG</b>	Range. <b>Value</b> must be in the form <i>value1,value2</i> .
<b>NR</b>	Not in range. <b>Value</b> must be in the form <i>value1,value2</i> .

### Value

The character or numeric constant to be used with the specified operator and column name to create an expression in the resultant WHERE clause.

When the operator is NL, ¬NL, or NNL, the Value column must be blank. For all other operators, the Value column must not be blank.

For operators that support more than one value (BTW, ¬BT, NBT, IN, ¬IN, NIN, RG, or NR), the values must be separated by commas. For operators IN, ¬IN, or NIN, and the column is alphanumeric, you must enclose each value in quotes.

If the data type of the column is alphanumeric, the value can be:

- A character string not starting or ending with a single quotation mark. and not containing any embedded quotes or commas. The case of the string is ignored.
- A character string enclosed in single quotation marks. The string can contain blanks and commas, but not any embedded quotes. The case of the string is ignored.

If the data type of the column is numeric, the value must be numeric.

For DATE, TIME, and TIMESTAMP columns, if you specify a "=" in the **Value** field, FM/DB2 displays the current date, time, or timestamp values respectively in the required format.

)

Right parenthesis column.

If you need to define the sequence of evaluation for the resultant WHERE clause by enclosing part of the clause in parentheses, use this column to type a right parenthesis (")") at the appropriate point.

You can only use parentheses on lines containing expressions (that is, where you have specified an operator in the **Op** column). The number of left parentheses must match the number of right parentheses.

### Parent panels

- "Column Selection/Edit panel" on page 419

### Child panels

None.

### Related tasks

- "Selecting rows" on page 64

## RUNSTATS Utility (Indexes) panel

You use the RUNSTATS Utility (Indexes) panel to generate utility control statements using the RUNSTATS INDEX form of the RUNSTATS utility.

### Panel and field definitions

Process		Options	Utilities	Help
FM/DB2 (DFA2)		RUNSTATS Utility (Indexes)		Row 1 to 12 of 341
S	P			Report Update
e	R	Index	Index	Part'n Stats Option
l	C	Owner	+ Name	+ Number (Y/N) (A/P/S/N)
		fmdb2	TABLE19_UNIQUE	0 N A
		fmdb2!	TABLE20_UNIQUE	0 N A
		thing	ix1	0 N A
		ARROWSB	T1_IX1	0 N A
		ARROWSB	T3_IX1	0 N A
		ARROWSB	XDEPT1	0 N A
		ARROWSB	XDEPT2	0 N A
		ARROWSB	XDEPT3	0 N A
		ARROWSB	XEMP1	1 N A
		ARROWSB	XEMP1	2 N A
		ARROWSB	XEMP1	3 N A
		ARROWSB	XEMP1	4 N A
Command ==>				
F1=Help	F2=Split	F3=Exit	F4=Expand	F7=Backward
F9=Swap	F10=Left	F11=Right	F12=Cancel	F8=Forward

**Sel** Selection column. Type S to select an index.

**PRC** Processing column. An asterisk (\*) indicates the selected index.

**Index Creator** The name of the creator of the index.

**Index Name** The name of the index.

#### Part'n Number

The partition number for the index. A zero indicates a non-partitioned index. A non-zero value indicates the partition number of a partitioned index.

#### Report Stats (Y/N)

Whether a report outlining the results of the utility is written to the SYSPRINT DDNAME:

**Y** Report written to the SYSPRINT DDNAME.

**N** Report not written to the SYSPRINT DDNAME. This is the default setting.

For more information, see the *DB2 Utility Guide and Reference*.

#### Update Option (A/P/S/N)

Indicates which catalog tables (if any) are updated by the RUNSTATS utility. The available options are:

**A** All. All catalog tables are updated. This is the default setting.

**P** Access path only. Statistics related to access path selection are updated

- |   |  |
|---|--|
| S | Space only. Only statistics related to space information are updated |
| N | None. No catalog tables are updated.                                 |

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “RUNSTATS (indexes)” on page 308

## RUNSTATS Utility (Indexes) with LISTDEF panel

You use the RUNSTATS Utility (Indexes) with LISTDEF panel to generate utility control statements using the RUNSTAT INDEX form of the RUNSTAT utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		RUNSTATS Utility (Indexes)	Row 1 to 2 of 2
P		Report	Update
R LISTDEF		Stats	Option
Cmd C Name		(Y/N)	(A/P/S/N)
* FRED		N	A
JAMES		N	A
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “RUNSTATS utility” on page 306
- “RUNSTATS (indexes)” on page 308

## RUNSTATS Utility (Table Spaces) panel

You use the RUNSTATS Utility (Table Spaces) panel to generate either RUNSTATS TABLESPACE or RUNSTATS INDEX control statements, depending on the value selected for the **Indexes Only** column.

### Panel and field definitions

Process		Options		Utilities		Help		
FM/DB2 (DFA2)		RUNSTATS Utility (Table Spaces)				Row 1 to 12 of 237		
Sel	PRC	Database Name	Table Space Name	Part'n Number	Number Tables	Indexes Only (Y/N)	Report Stats (Y/N)	Update Option (A/P/S/N)
—	—	BILLSDB1	TS1D	0	1	N	N	A
—	—	BILLSDB1	TS1E	1	1	N	N	A
—	—	BILLSDB1	TS1E	2	1	N	N	A
—	—	BILLSDB1	TS1E	3	1	N	N	A
—	—	BILLSDB1	TS1E	4	1	N	N	A
—	—	BILLSDB2	UTILTS1	0	2	N	N	A
—	—	CJMAODA	CJMAOSD	0	1	N	N	A
—	—	CJMAODA	CJMAOSE	1	1	N	N	A
—	—	CJMAODA	CJMAOSE	2	1	N	N	A
—	—	CJMAODA	CJMAOSE	3	1	N	N	A
—	—	CJMAODA	CJMAOSE	4	1	N	N	A
—	—	CJMAODA	CJMAOSP	0	4	N	N	A
Command ==>								Scroll PAGE
F1=Help		F2=Split		F3=Exit		F7=Backward		F8=Forward
F12=Cancel								F9=Swap

**Sel** Selection column. Type S to select a table space.

**PRC** Processing column. An asterisk (\*) indicates the selected table space.

**Database Name**  
The name of the database in which the table space is defined.

**Table Space Name**  
The name of the table space.

**Part'n Number**  
The partition number for the table space. A zero value indicates a non-partitioned table space; a non-zero value indicates the partition number.

**Number Tables**  
The number of tables in the table space.

**Indexes Only (Y/N)**  
Whether RUNSTATS is performed for only the indexes in the table spaces (without gathering statistics for the tables in the table space itself):  
**Y** RUNSTATS performed for indexes only.  
**N** RUNSTATS performed for tables and indexes. This is the default setting.

**Report Stats (Y/N)**  
Whether a report outlining the results of the utility is written to the SYSPRINT DDNAME:



## RUNSTATS Utility (Table Spaces) panel

- |   |   |
|---|---|
| Y | Report written to the SYSPRINT DDNAME.                                  |
| N | Report not written to the SYSPRINT DDNAME. This is the default setting. |

For more information, see the *DB2 Utility Guide and Reference*.

### Update Option (A/P/S/N)

Indicates which catalog tables (if any) are updated by the RUNSTATS utility:

- |   |  |
|---|--|
| A | All. All catalog tables are updated. This is the default setting.          |
| P | Access path only. Statistics related to access path selection are updated. |
| S | Space only. Only statistics related to space information are updated.      |
| N | None. No catalog tables are updated.                                       |

## Parent panels

- “DB2 Utilities panel” on page 556

## Child panels

None.

## Related tasks

- “RUNSTATS (table spaces)” on page 307

RUNSTATS Utility (Table Spaces) with LISTDEF panel

You use the RUNSTATS Utility (Table Spaces) with LISTDEF panel to generate utility control statements using the RUNSTAT TABLESPACE form of the RUNSTAT utility.

Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		RUNSTATS Utility (Table Spaces)	
		Row 1 to 2 of 2	
P		Report	Update
R	LISTDEF	Stats	Option
Cmd	C Name	(Y/N)	(A/P/S/N)
	FRED	N	A
	* GEORGE	N	A
***** Bottom of data *****			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

- I(n)** Insert (n) new row(s)
- R(n)** Repeat the current row (n times)
- D(n)** Delete (n) row(s)
- S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

**LISTDEF Name** On entry to the panel, this field is set to the value in the LISTDEF name field in the DB2 Utilities panel.

Parent panels

- “DB2 Utilities panel” on page 556

Child panels

None.

### Related tasks

- “RUNSTATS utility” on page 306
- “RUNSTATS (table spaces)” on page 307

## Schemas panel

You use the Schemas panel to list information about the schemas you have selected.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of various catalog tables.

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Schemas	
Location:		Format <u>TABL</u>	
SEL	SCHEMA	UDTS	UDFS
	*	*	*
----	#2--+-	-----#3	-----#4
****	Top of data	****	
----	KEISTE2	1	3
----	KEISTEW	1	4
----	SQLJ	0	7
----	SYSPROC	0	10
----	SYSIBM	0	13
****	End of data	****	
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Distinct Types panel” on page 565
- “Functions panel” on page 632
- “Stored Procedures panel” on page 754
- “Triggers panel” on page 785

## Child panels

To display this panel...	Use/do this
"Distinct Types panel" on page 565	Line command DT
"Functions panel" on page 632	Line command F
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Stored Procedures panel" on page 754	Line command O
"Privileges panels" on page 678	Line command P
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Triggers panel" on page 785	Line command TR
"Sort Fields panel" on page 747	Primary command SORT

## Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

## Related references

- "SORT primary command" on page 853

## Scramble Exit Specification panel

The Scramble Exit Specification panel allows you to provide the name of a scramble exit, a constant to be passed to the exit, and to specify whether numeric fields are to be formatted before the value is passed to the exit.

## Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)Scramble Exit Specification

Fixed Attributes:

Column nameCOLCARD

TypeINTEGER

Scramble Exit:

Program name

Optional constant

+

Scramble Exit Processing Options:

Format Option

1. None

2. Format

3. Leading Zeros

Command ==>

F1=Help

F2=Split

F3=Exit

F4=Expand

F7=Backward

F8=Forward

F9=Swap

F10=Left

F11=Right

F12=Cancel

Figure 115. Scramble Exit Specification panel

### Program name

A 1 to 8 character valid load module member name that identifies the

scramble exit invoked during a copy operation for this output column. The exit must be in the form of a load module, in any load library available to FM/DB2 at the time of the copy process, either by a STEPLIB DD statement, or in LINKLIST, or LPALIST.

### Optional constant

A constant value that is passed to the exit for each call type. To enter a hexadecimal value, press F4 or enter the EXPAND command with the cursor positioned in this field and use the command HEX ON from the expand window.

### Format Option

This option is only displayed for numeric columns and allows you to request FM/DB2 to pass the value specified in **Optional constant** to the exit in one of the following forms:

#### 1. None

Field value passed to the exit in the internal format.

#### 2. Format

Field value passed to the exit as displayed numeric with leading zeros suppressed.

#### 3. Leading Zeros

Field value passed to the exit as displayed numeric with leading zeros.

## Parent panels

- “Column Attributes panel (alphanumeric)” on page 407
- “Column Attributes panel (numeric)” on page 412

## Related tasks

- “Scrambling data” on page 234

### Select Statement Browse panel

FM/DB2 displays the Select Statement Browse panel if the **Use edit (instead of browse) to display results** option is not selected, and you press Enter when one of these panels is displayed:

- “Basic SELECT Prototyping panel” on page 399
- “Advanced SELECT Prototyping panel” on page 375

#### Related tasks

- “FM/DB2 Systems Options (1 of 4) panel” on page 623

### Select Statement Edit panel

FM/DB2 displays the Select Statement Edit panel if the **Use edit (instead of browse) to display results** option is selected, and you press Enter when one of these panels is displayed:

- “Basic SELECT Prototyping panel” on page 399
- “Advanced SELECT Prototyping panel” on page 375

#### Related tasks

- “FM/DB2 Systems Options (1 of 4) panel” on page 623

## Sequences panel

You use the Sequences panel to display information about the sequences you have selected.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSSEQUENCES.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)			Sequences
1 rows fetched			0 of 1
			Format <u>TABL</u>
SEL	SCHEMA	OWNER	NAME
	*	*	*
----	#1--+-	#2--+-	#3--+-
****	Top of data	****	
	KEISTEW	KEISTEW	SEQUENCE1
****	End of data	****	
			Sequence object
			256 KEISTEW
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetrie
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel
			Scroll PAGE
			F6=RChange

Figure 116. Sequences panel

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

## Parent panels

- “Object List Utility panel” on page 663

## Child panels

To display this panel...	Use/do this
Create Sequence panel	Line command CR
Sequence Dependencies panel	Line command DEP
Drop Sequence panel	Line command DR
Grant Sequence Privileges panel	Line command G
“Display Row panel” on page 564	Line command ROW

## Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

## Related references

- “SORT primary command” on page 853

## Related tasks

- “Managing tables used by SQL explain” on page 358



### Set Batch Job Card Information panel

You use the Set Batch Job Card Information panel to specify a JCL jobcard that FM/DB2 is to use whenever it generates a batch job. You can also specify a JOBLIB or other statements.

These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp		
FM/DB2 (DFA2)	Set Batch Job Card Information				
Set processing options as required and enter EXIT (F3) to save your changes.					
Batch Submission Job Statement Information:					
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>					
Command ==>					
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F6=Reset	F7=Backward
F8=Forward	F9=Swap	F10=Actions	F12=Cancel		

#### Batch Submission Job Statement Information

The JCL job card information that is used for any batch job that is created.

### Parent panels

.

### Child panels

None.

### Related tasks

- “Job card specifications (option 0.3)” on page 46

## Set COBOL Processing Options panel

You use the Set COBOL Processing Options panel to customize how FM/DB2 compiles COBOL copybooks to generate FM/DB2 templates.

These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Set COBOL Processing Options	
Additional SYSLIB data sets:			
1.	<input type="text"/>		
2.	<input type="text"/>		
3.	<input type="text"/>		
4.	<input type="text"/>		
5.	<input type="text"/>		
6.	<input type="text"/>		
7.	<input type="text"/>		
8.	<input type="text"/>		
9.	<input type="text"/>		
10.	<input type="text"/>		
COBOL REPLACE Options:			
	From string		To string
1.	<input type="text"/>	by	<input type="text"/>
2.	<input type="text"/>	by	<input type="text"/>
3.	<input type="text"/>	by	<input type="text"/>
4.	<input type="text"/>	by	<input type="text"/>
5.	<input type="text"/>	by	<input type="text"/>
COBOL Compiler Options:			
Enter "/" to select option			
<input type="checkbox"/> DBCS			
<input type="checkbox"/> Decimal-point is comma			
<input type="checkbox"/> Arith(extend)			
<input type="checkbox"/> Mixed case field names			
Maximum Return Code to be accepted from compiler <u>04</u> (0-99)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

#### Additional SYSLIB data sets

When you use one of the preceding FM/DB2 functions, if the COBOL copybook that you specify uses COPY compiler-directing statements to include other members that do not belong to the same PDSs as the copybooks, then you need to specify those other PDSs here.

Here's why: members included by COPY compiler-directing statements must be found in the SYSLIB concatenation. When you specify a copybook on an FM/DB2 panel, the SYSLIB concatenation consists of the PDS of the copybook, plus up to ten additional PDSs that you can specify on this panel. These PDSs are searched in order (PDS of the copybook, followed by these additional PDSs, 1-10.)

#### COBOL REPLACE options

"From" and "To" pseudo-text character strings for the REPLACE compiler-directing statement.

## Set COBOL Processing Options panel

If the COBOL copybook contains characters that you want to replace with other characters before compiling the copybook into a template, then use these replacing options.

For example, if the copybook contains colon characters (:) that you want to remove before compiling, then specify ==:== as a “From” string and ==== as the matching “To” string.

For details on specifying “From” and “To” strings for REPLACE, see the *IBM COBOL Language Reference*.

### COBOL Compiler Options

Compiler options to be used when compiling a COBOL copybook into a template:

**DBCS** Instructs File Manager to use the DBCS compiler option.

#### Decimal-point is comma

Uses the "Decimal-point is comma" SPECIAL-NAMES paragraph when compiling COBOL copybooks.

#### Arith(extend)

Uses the Arith(extend) COBOL compile option when compiling COBOL copybooks.

### Mixed case field names

Retains the original case of the field name as coded in the COBOL copybook.

### Maximum Return Code

Sets the maximum warning/error code accepted from the compiler, when compiling a copybook. Any code higher than specified causes FM/DB2 to display a pop-up panel, in which you can review the compilation and decide about future processing.

## Parent panels

•

## Child panels

None.

## Related tasks

- “COBOL compiler specifications (option 0.5)” on page 46

## Set HLASM Processing Options panel

The HLASM Processing Options panel controls various options used by the HLASM compiler to generate templates from your HLASM copybooks.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>H</u> elp
File Manager                      Set HLASM Processing Options		
Additional SYSLIB data sets:		
1.	_____	
2.	_____	
3.	_____	
4.	_____	
5.	_____	
6.	_____	
7.	_____	
8.	_____	
9.	_____	
10.	_____	
HLASM Compiler Options:		
Enter "/" to select option		
-	DBCS	
-	NOALIGN	
Maximum Return Code to be accepted from compiler    04    (0-99)		
Command ==> _____		
F1=Help	F2=Split	F3=Exit      F7=Backward    F8=Forward    F9=Swap
F10=Actions	F12=Cancel	

#### Additional SYSLIB data sets

A concatenation of up to 10 SYSLIB data sets may be entered, these data sets are searched in the order specified for COPY or INCLUDE members for the compilation.

#### HLASM Compiler Options for Copybooks

Compiler options to be used when compiling a HLASM copybook into a template:

**DBCS** If selected, use the DBCS compiler option.

**NOALIGN**

If selected, use the NOALIGN compiler option.

### Parent panels

- "Set System Processing Options panel" on page 740
- "Set Processing Options panel" on page 738

### Child panels

- None.

### Comments

- "HLASM compiler specifications (option 0.6)" on page 47

## Set Optimizer Hint panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Set Optimizer Hint	
Insert a hint for the optimizer into FMNUSER.PLAN_TABLE.			
Columns Considered by the Optimizer:			
Query number . . .	1		
Query block number	1		
Application plan .			(blank for packages)
DBRM/package . . .	ADBMAN		
Collection . . . .	FMN2PLP3		(blank for plans)
Version . . . . .			
Access method . .	0		(0, 1, 2, 3, or 4)
Access type . . .			(I, I1, N, R, M, MX, MI, MU)
Table owner . . .	SYSIBM		
Table name . . . .	SYSTABLES		
Correlation name .			
Table number . . .	1		
Index owner . . .			
Index name . . . .			(required for access type I, I1, or N)
Sort new table . .	N		
Sort composite . .	N		
Prefetch . . . . .	S		(' ', S, or L)
Parallelism . . . .	?		(?, I, C, or X)
Access degree . . .	?		(? lets DB2 decide)
Join degree . . . .	?		(? lets DB2 decide)
Hint ID . . . . .			(required hint ID)
Comment . . . . .			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

### Parent panels

- “Plan Table Rows panel” on page 668

### Child panels

None.

## Related tasks

### Set Output Data Set Allocation Options panel

#### Panel and field definitions

Process	Options	Help					
File Manager	Set Output Data Set Allocation Options						
Set processing options as desired and enter EXIT (F3) to save your changes. Enter RESET to restore installation defaults.							
Data set	Space Units	Primary Quantity	Secondary Quantity	Management Class	Storage Class	Data Class	Device Type
Audit Log	CYL	16	8				SYSALLDA
Print	CYL	64	32				SYSALLDA
SHOWSQL	TRK	20	20				SYSALLDA
Command ==>							
F1=Help	F2=Split	F3=Exit	F4=CRetrie	F6=Reset	F7=Backward		
F8=Forward	F9=Swap	F10=Actions	F12=Cancel				

Figure 117. Set Output Data Set Allocation Options panel

#### Space Units

Defines the unit of primary and secondary space to be allocated.

**BLK** Block of average size.

**KB** Kilobyte, a kilobyte is 1024 bytes.

**MB** Megabyte, a megabyte is 1048576 bytes.

**TRK** Track of a direct access storage device (DASD).

**CYL** Cylinder of a DASD.

#### Primary Quantity

Amount of DASD space to be used for primary space allocation. The range depends on the space unit specified and the DASD device type.

#### Secondary Quantity

Amount of DASD space to be used for secondary space allocation. The range depends on the space unit specified and the DASD device type.

#### Management Class

Name of a management class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

#### Storage Class

Name of a storage class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

#### Data Class

Name of a data class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

## Set Output Data Set Allocation Options panel

### Device Type

Specifies the device type of the volume to contain the data set. Enter an IBM device type or a generic device name that is supported by your system.

### Parent panels

- “Set Processing Options panel” on page 738

### Child panels

- None.

### Comments

- None.

## Set PL/I Processing Options panel

You use the Set PL/I Processing Options panel to customize how FM/DB2 compiles PL/I copybooks to generate FM/DB2 templates.

These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Set PL/I Processing Options	
Additional SYSLIB data sets:			
1.	<input type="text"/>		
2.	<input type="text"/>		
3.	<input type="text"/>		
4.	<input type="text"/>		
5.	<input type="text"/>		
6.	<input type="text"/>		
7.	<input type="text"/>		
8.	<input type="text"/>		
9.	<input type="text"/>		
10.	<input type="text"/>		
PL/I Compiler Options for Copybooks:			
Enter "/" to select option			
<input type="checkbox"/> GRAPHIC	<input type="checkbox"/> UNALIGNED		
<input type="checkbox"/> 63 bit binary	<input type="checkbox"/> 31 digit decimal		
Maximum Return Code to be accepted from compiler <u>04</u> (0-99)			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

#### Additional SYSLIB data sets

Any additional SYSLIB data sets to be used in the compilation of PL/I copybooks.

#### PL/I Compiler Options

These options determine how FM/DB2 compiles PL/I copybooks to generate FM/DB2 templates.

##### Additional SYSLIB data sets

The names of data sets to be searched if your copybooks contain references to other PL/I copybooks.

##### GRAPHIC

Select this option if the copybook contains DBCS or mixed data.

##### UNALIGNED

Select this option if fields are not aligned on full-word boundaries.

##### 63 bit binary

Select this option if you require support for 63 bit binary numbers. The PL/I compiler option LIMITS(FIXEDBIN(63)) is used when you select this option.

##### 31 digit decimal

Select this option if you require support for 31 digit decimal numbers. The PL/I compiler option LIMITS(FIXEDDEC(31)) is used when you select this option.



## Set PL/I Processing Options panel

For details on the effects of using these options, see the *IBM VisualAge PL/I for OS/390 Programming Guide*.

### Maximum Return Code

Sets the maximum warning/error code accepted from the compiler, when compiling a copybook. Any code higher than specified causes FM/DB2 to display a pop-up panel, in which you can review the compilation and decide about future processing.

## Parent panels

- 

## Child panels

None.

## Related tasks

- “Setting default processing options” on page 43

## Set Print Processing Options panel

You use the Set Print Processing Options panel to control processing of the current FM/DB2 session.

These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>H</u> elp
FM/DB2 (DFE2) Set Print Processing Options		
Print Options:		
Output destination	Record length	Enter "/" to select option
<u>1</u> 1. SYSPRINT	<u>2</u> 1. 80	Page skip
2. Terminal	2. 132	/ Wide print
3. Data set		/ Translate non-printable chars
4. REXX		- Uppercase message text
Data set DISP	Dump format	
<u>2</u> 1. OLD	<u>1</u> 1. Updown	
2. MOD	2. Across	
Data set name . .	FMNUSER.FMN.LIST	
Output class . . .	A	
Lines per page . .	50	
Record limits . .	(1,*) (n,m) n=begin column, m=end column	
Command ===>		
F1=Help	F2=Split	F3=Exit
F8=Forward	F9=Swap	F10=Actions
		F12=Cancel
	F4=CRetriev	F6=Reset
		F7=Backward

#### Output destination

Specifies where print output is sent, except for batch execution.

##### **SYSPRINT**

Send print output to the current SYSPRINT allocation.

##### **Terminal**

Send print output to the TSO terminal.

##### **Data set**

Output is accumulated in the print data set specified in the **Data set name** field. This data set can be browsed using the PB command, or sent for printing to the JES spool queue with class specified in the **Output class** field using the PRINT command while browsing.

**REXX** Send output to a REXX stem variable. Each line corresponds to a variable named FILEM.*nnn*. FILEM.0 contains the line count.

When you use the PRINT primary command in Print Browse (option 3.9), or if you specify batch execution in an FM/DB2 panel, then print output is always sent to a SYSOUT class.

#### Record length

Specifies the line length of print output.

**80** The line length of print output is 80 characters, suitable for a terminal.

**132** The line length of print output is 132 characters, suitable for a printer.

## Set Print Processing Options panel

**Note:** Record length is not applicable when:

- The data is printed in TABL format, or
- You specify the wide format for the compare output listing

In either of the above cases, when data is printed the line length is determined from the number and size of fields printed. If this length is greater than the record length specified for the data set, the print line is truncated. The maximum print line length is 32760.

### Data set DISP

Specifies the disposition of a print data set.

**OLD** The print data set is cleared before each print operation, and print output is written from the beginning of the data set.

**MOD** Default setting. Print output is appended to the existing print data set.

### Dump format

Specifies the format of hexadecimal print output (for example, when you use Tape Print with **Print format** set to HEX). For an example of each format, see "Selecting a display format" on page 118.

#### Updown

The two digits making up the hexadecimal representation of each EBCDIC character are displayed vertically directly under that character.

#### Across

The hexadecimal digits are displayed as 2 groups of 4 full words resulting in 32 hexadecimal digits followed by the EBCDIC character display to the right of the hexadecimal display.

### Page skip

If selected, print output from each function begins on a new page.

### Wide print

If selected, for to-be-allocated (new) print output datasets (online) or for SYSPRINT allocation (in batch), FM/DB2 uses the maximum record length/blocksize of 32756/32760 and record format of VBA.

If not selected, for to-be-allocated (new) print output datasets (online) or for SYSPRINT allocation (in batch), FM/DB2 uses the record length/blocksize of 133/137 and record format of VBA.

**Note:** This setting only applies when the output dataset is newly-allocated during execution. It is ignored for pre-allocated print output datasets.

### Translate non-printable chars

Specifies how FM/DB2 should translate non-printable characters.

If selected, non-printable characters are translated to blanks using a translate table.

If not selected, no translation is performed. Use PRTTRANS=OFF to support special print chains. This may make printing faster.

For instructions on altering the print translate table, see the *File Manager Customization Guide*.

### Uppercase message text

All message text is translated to uppercase.

### Data set name

If you specified the **Output destination** as 3 (Data set), then after you enter the PRINT command while executing the Print Browse (PB) function, FM/DB2 sends print output to this temporary data set.

The default is *userid.FMN.LIST*, unless changed in your FM/DB2 installation.

### Output class

The class of the JES spool queue to be used when the PRINT command is issued while browsing the temporary print data set.

### Lines per page

Specifies the number of lines printed on each page of print output. You can specify a value from 1 to 999. The default is 60.

### Record limits

When data is printed in CHAR or LHEX print format, limits print output for each record (or OAM object).

(1,\*) The entire record (or block) is printed.

(*n,m*) Print output is limited to the data from columns (bytes) *n* through *m*. An asterisk (\*) specified for *m* indicates the end of the record.

## Parent panels

- "Set System Processing Options panel" on page 740

## Child panels

None.

## Related tasks

- "Print settings (option 0.1)" on page 46
- "PRINT primary command" on page 843
- "Looking at the print output from your FM/DB2 session" on page 268

## Set Processing Options panel

You use the Set Processing Options panel to navigate to other panels from which you can set various types of options that affect the behavior of FM/DB2 panels. These options are saved in your ISPF profile and persist from one FM/DB2 session to the next.

### Panel and field definitions

Process		Help
FM/DB2 (DFA2)		Set Processing Options
0	System	System Options
1	View	View options
2	Edit	Edit options
3	Utilities	
3.1	Print	Print utility options
3.3	Copy	Copy utility options
3.4	Object List	Object list utility options
3.6	Import	Import utility options
3.7	Export	Export utility options
3.L	Load	DB2 LOAD utility options
3.UL	LISTDEF	DB2 Utility LISTDEF options
3.UO	OPTIONS	DB2 Utility OPTIONS options
3.UT	TEMPLATE	DB2 Utility TEMPLATE options
3.UU	Unload	DB2 Unload utility options
Command ==>		
F1=Help		F2=Split F3=Exit F7=Backward F8=Forward F9=Swap
F12=Cancel		

#### 0 System Options

Displays the Set System Processing Options panel

#### 1 View

Displays the first Editor Options panel

#### 2 Edit

Displays the first Editor Options panel

#### 3 Utilities

Displays the Set Utilities Processing Options panel

#### 3.1 Print

Displays the Print Utility Options panel

#### 3.3 Copy

Displays the Copy Options panel

#### 3.4 Object List

Displays the FM/DB2 Object List Options (1 of 2) panel

#### 3.6 Import

Displays the Import Options panel

#### 3.7 Export

Displays the first Export Options panel

#### 3.L LOAD

Displays the Load Utility Options panel

#### 3.UL LISTDEF

Displays the LISTDEF Options panel

#### 3.UO OPTIONS

Displays the OPTIONS Options panel

#### 3.UT TEMPLATE

Displays the TEMPLATE Options (1 of 2) panel

**3.UU Unload** Displays the UNLOAD Options panel

## Parent panels

- “Primary Option Menu panel” on page 670

## Child panels

To display this panel...	Use/do this
“Set System Processing Options panel” on page 740	Option 0
“Set Print Processing Options panel” on page 735	Option 0.1
“FM/DB2 Systems Options (1 of 4) panel” on page 623	Option 0.2
“Set Batch Job Card Information panel” on page 726	Option 0.3
“Compiler Language Selection panel” on page 425	Option 0.4
“Set COBOL Processing Options panel” on page 727	Option 0.5
“Set HLASM Processing Options panel” on page 729	Option 0.6
“Set PL/I Processing Options panel” on page 733	Option 0.7
“Set Temporary Data Set Allocation Options panel” on page 743	Option 0.8
“Set Output Data Set Allocation Options panel” on page 731	Option 0.9
“ISPF Settings panel” on page 647	Option 0.10
“Editor Options (1 of 7) panel” on page 571	Option 1 or 2
“Set Utility Options panel” on page 742	Option 3
“Print Utility Options panel” on page 673	Option 3.1
“Copy Options panel” on page 427	Option 3.3
“FM/DB2 Object List Options (1 of 2) panel” on page 618	Option 3.4
“Import Options panel” on page 637	Option 3.6
“Export Options (1 of 3) panel” on page 602	Option 3.7
“LOAD Utility Options panel” on page 659	Option 3.L
“LISTDEF Options panel” on page 649	Option 3.UL
“OPTIONS Options panel” on page 665	Option 3.UO
“TEMPLATE Options (1 of 2) panel” on page 779	Option 3.UT
“UNLOAD Options panel” on page 787	Option 3.UU

## Related tasks

- “Setting default processing options” on page 43

Set System Processing Options panel

You use the Set System Processing Options panel to navigate to other options panels.

Panel and field definitions

Process

Help

FM/DB2 (DFA2)

Set System Processing Options

1

Print

Print settings

2

System

FM/DB2 system options

3

Batch

Job card specifications

4

LANG

Compiler language selection

5

COBOL

COBOL compiler specifications

6

HLASM

HLASM compiler specifications

7

PL/I

PL/I compiler specifications

8

Temporary

Temporary Data Set Allocations

9

Output

Output Data Set Allocations

10

Trace

Trace options

11

ISPF

ISPF settings

Command ==>

F1=Help

F2=Split

F3=Exit

F7=Backward

F8=Forward

F9=Swap

F12=Cancel

- 1

Print

Displays the Set Print Processing Options panel
- 2

System

Displays the first FM/DB2 System Options panel
- 3

Batch

Displays the Set Batch Job Card Information panel
- 4

LANG

Displays the Compiler Language Selection panel
- 5

COBOL

Displays the Set COBOL Processing Options panel
- 6

HLASM

Displays the Set HLASM Processing Options panel
- 7

PL/I

Displays the Set PL/I Processing Options panel
- 8

Temporary

Displays the Set Temporary Data Set Allocation Options panel
- 9

Output

Displays the Set Output Data Set Allocation Options panel
- 10

Trace

Displays the Set Trace options panel
- 11

ISPF

Displays the ISPF Settings panel
- For a description of the fields on the ISPF Settings panel, see the relevant z/OS ISPF User's Guide Vol II.

Parent panels

- “Set Processing Options panel” on page 738

Child panels

To display this panel...	Use/do this
“Set Print Processing Options panel” on page 735	Option 1

To display this panel...	Use/do this
"FM/DB2 Systems Options (1 of 4) panel" on page 623	Option 2
"Set Batch Job Card Information panel" on page 726	Option 3
"Compiler Language Selection panel" on page 425	Option 4
"Set COBOL Processing Options panel" on page 727	Option 5
"Set HLASM Processing Options panel" on page 729	Option 6
"Set PL/I Processing Options panel" on page 733	Option 7
"Set Temporary Data Set Allocation Options panel" on page 743	Option 8
"Set Output Data Set Allocation Options panel" on page 731	Option 9
"Set Trace options panel" on page 744	Option 10
"ISPF Settings panel" on page 647	Option 11

## Related tasks

- "Setting default processing options" on page 43



### Set Utility Options panel

You use the Set Utility Processing Options panel to navigate to other options panels.

#### Panel and field definitions

Process	Help
FM/DB2 (DFA2)	Set Utility Processing Options
1 Print	Print utility options
3 Copy	Copy utility options
4 Object list	Object list utility options
6 Import	Import utility options
7 Export	Export utility options
L LOAD	DB2 LOAD utility options
UL LISTDEF	DB2 Utility LISTDEF options
UO OPTIONS	DB2 Utility OPTIONS options
UT TEMPLATE	DB2 Utility TEMPLATE options
UU Unload	DB2 Unload utility options

Command ==>	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F1=Help					
F12=Cancel					

- |                      |  |
|----------------------|--|
| <b>1 Print</b>       | Displays the Copy Options panel                        |
| <b>3 Copy</b>        | Displays the Copy Options panel                        |
| <b>4 Object list</b> | Displays the FM/DB2 Object List Options (1 of 2) panel |
| <b>6 Import</b>      | Displays the Import Options panel                      |
| <b>7 Export</b>      | Displays the first Export Options panel                |
| <b>L LOAD</b>        | Displays the Load Utility Options panel                |
| <b>UL LISTDEF</b>    | Displays the LISTDEF Options panel                     |
| <b>UO OPTIONS</b>    | Displays the OPTIONS Options panel                     |
| <b>UT TEMPLATE</b>   | Displays the TEMPLATE Options (1 of 2) panel           |
| <b>UU Unload</b>     | Displays the UNLOAD Options panel                      |

#### Parent panels

- “Set Processing Options panel” on page 738

#### Child panels

To display this panel...	Use/do this
“Copy Options panel” on page 427	Option 3
“FM/DB2 Object List Options (1 of 2) panel” on page 618	Option 4

To display this panel...	Use/do this
"Import Options panel" on page 637	Option 6
"Export Options (1 of 3) panel" on page 602	Option 7
"LOAD Utility Options panel" on page 659	Option L
"LISTDEF Options panel" on page 649	Option UL
"OPTIONS Options panel" on page 665	Option UO
"TEMPLATE Options (1 of 2) panel" on page 779	Option UT
"UNLOAD Options panel" on page 787	Option UU

## Related tasks

- "Setting default processing options" on page 43

## Set Temporary Data Set Allocation Options panel

### Panel and field definitions

```

Process  Options  Help
-----
FM/DB2 (DFA2)      Set Temporary Data Set Allocation Options

Set processing options as desired and enter EXIT (F3) to save your changes.
Enter RESET to restore installation defaults.

Temporary data set allocation defaults:
Unit . . . . . SYSALLDA                leave blank for default
Data class . . . . .                  leave blank for default
Storage class . . . . .                leave blank for default
Management class . . . . .            leave blank for default

Default High Level Qualifiers:
Temporary Data Sets _____ HLQ (opt. &USER/&PREFIX)

Command ==>
F1=Help      F2=Split    F3=Exit      F4=CRetrieve  F6=Reset      F7=Backward
F8=Forward   F9=Swap      F10=Actions  F12=Cancel

```

Figure 118. Set Temporary Data Set Allocation Options panel

### Temporary data set allocation defaults

**Unit** Can be one of these:

- A 3-digit hexadecimal device number.
- A 4-digit hexadecimal device number prefixed with a slash (/).
- Device type (generic name).
- Group name (installation-defined symbolic name).

**Data class**

Name of a data class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

**Storage class**

Name of a storage class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

## Set Temporary Data Set Allocation Options panel

### Management class

Name of a management class defined in your Storage Management System (SMS) installation. Do not enter a value on a system without SMS.

### Default High Level Qualifiers

#### Temporary Data Sets

Can be any multi-level qualifier, which is used by File Manager as the high-level qualifier (HLQ) in names of created datasets. You can use these symbols as part of the HLQ:

#### &USER

Represents the user ID.

#### &PREFIX

Represents the TSO prefix.

The default is none (unless changed in your File Manager installation).

## Parent panels

- "Set Processing Options panel" on page 738

## Child panels

- None.

## Comments

- None.

---

## Set Trace options panel

The Set Trace options panel allows you to view and modify parameters that control the Trace output produced by FM/DB2 when it is run in debug mode.

## Panel and field definitions

Process	Options	Help
FM/DB2 (DFE2)	Set Trace options	
Trace Options:		
Trace destination		
3	1. FMNTRC	
	2. Terminal	
	3. Data set	
Data set name	JOHNLEV.FMN.TRACE	
Output class	. A	
Trace limit	. 500	
Command ===>		
F1=Help	F2=Split	F3=Exit
F4=CRetriev	F6=Reset	F7=Backward
F8=Forward	F9=Swap	F10=Actions
F12=Cancel		

Figure 119. Set Trace options panel

### Trace destination

Specifies where debug trace FM/DB2 output is to be sent:

#### FMNTRC

Send trace output to the current FMNTRC allocation.

#### Terminal

Send trace output to the terminal.

#### Data set

Send trace output to the temporary data set specified by the **Data set name** field.

### Data set name

The temporary trace data set where FM/DB2 trace output is directed when the Data set trace destination is specified.

### Output class

The class of the JES spool queue to be used when the PRINT command is issued when browsing the temporary trace data set.

### Trace limit

When run in debug mode, FM/DB2 writes the Trace output to a buffer (as for normal debug mode), but the buffer is only written to the Trace destination, if FM/DB2 abnormally terminates.

This field specifies the number of Trace statements that are retained in the buffer. If you specify a value of zero, background debug mode is turned off.

## Parent panels

“Set System Processing Options panel” on page 740

**Set Trace options panel**

### **Child panels**

None.

### **Related tasks**

Sort Fields panel

You use the Sort Fields panel to sort multiple columns within the current object list.

Panel and field definitions

<u>P</u> rocess		<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Sort Fields		Row 1 to 11 of 43
Sort				DB2
Column	Asc/		Column	Column
Number	Desc	Column Name	Type	Number
		*	*	*
0	ASC	NAME	VARCHAR	1
0	ASC	CREATOR	CHAR	2
0	ASC	TYPE	CHAR	3
0	ASC	DBNAME	CHAR	4
0	ASC	TSNAME	CHAR	5
0	ASC	DBID	SMALLINT	6
0	ASC	OBID	SMALLINT	7
0	ASC	COLCOUNT	SMALLINT	8
0	ASC	EDPROC	CHAR	9
0	ASC	VALPROC	CHAR	10
0	ASC	CLUSTERTYPE	CHAR	11
Command ==>				
F1=Help	F2=Split	F3=Exit	F4=CRetriev	F7=Backward
F9=Swap	F10=Actions	F12=Cancel	F8=Forward	

Sort Column Number

The relative position of this column in the sort sequence. Specify 1 for the most significant column, 2 for the next significant, and so on.

Asc/Desc

Indicates if you want FM/DB2 to sort the column in ascending or descending sequence:

- ASC Ascending. To change from DESC, overwrite with ASC or A.
- DESC Descending. To change from ASC, overwrite with DESC or D.

Column Name

The name of the column as held in the DB2 catalog table.

Column Type

The data type of the column.

DB2 Column Number

The number of the column as held in the DB2 catalog table.

Parent panels

The Sort Fields panel is displayed when you enter SORT on the command line from any object list and the cursor is *not* positioned within any column.

Child panels

To display this panel...	Use/do this
"Databases panel" on page 538	Object Type 1

## Sort Fields panel

To display this panel...	Use/do this
"Table Spaces panel" on page 768	Object Type 2
"Tables, Views and Aliases panel" on page 776	Object Type 3
"Indexes panel" on page 645	Object Type 4
"Columns panel" on page 423	Object Type 5
"Synonyms panel" on page 756	Object Type 6
"Application Plans panel" on page 397	Object Type 7
"Application Packages panel" on page 395	Object Type 8
"Collections panel" on page 405	Object Type 9
"Database Request Modules panel" on page 536	Object Type 10
"Schemas panel" on page 721	Object Type 11
"Distinct Types panel" on page 565	Object Type 12
"Functions panel" on page 632	Object Type 13
"Stored Procedures panel" on page 754	Object Type 14
"Triggers panel" on page 785	Object Type 15

## Related tasks

- "Sorting the displayed data" on page 259

## SQL Prototyping, Execution and Analysis panel

You use the SQL Prototyping, Execution and Analysis panel to select the FM/DB2 SQL function you want to use.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	SQL Prototyping, Execution and Analysis		
1 Basic	Prototype SELECT statements (basic)		
2 Advanced	Prototype SELECT statements (advanced)		
3 Enter	Enter, execute and explain SQL statements		
4 Edit	Edit and execute SQL statements from a data set		
5 Utility	Manage tables used by SQL explain		
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

- 1 (Basic)** Use this option to build and execute a basic SELECT statement.
- 2 (Advanced)** Use this option to build and execute a complex SELECT statement.
- 3 (Enter)** Use this option to enter, execute, and explain SQL statements.
- 4 (Edit)** Use this option to edit and execute SQL statements from a data set.
- 5 (Utility)** Use this option to select utilities to support the use of the DB2 EXPLAIN statement.

### Parent panels

- “Primary Option Menu panel” on page 670

### Child panels

To display this panel...	Use/do this
“Basic SELECT Prototyping panel” on page 399	Option 1
“Advanced SELECT Prototyping panel” on page 375	Option 2
“Enter, Execute and Explain SQL Statements panel” on page 598	Option 3
“Edit/Execute SQL (Data Set) panel” on page 568	Option 4
“Explain Utilities panel” on page 600	Option 5

### Related tasks

- “Using basic SQL prototyping” on page 321
- “Using advanced SQL prototyping” on page 328



### SQL Prototyping, Execution and Analysis panel

- “Entering, executing, and explaining SQL statements” on page 354
- “Editing and executing SQL statements from a data set” on page 357
- “Managing tables used by SQL explain” on page 358

## Statement Table Rows panel

FM/DB2 displays the Statement Table Rows panel if you use the SR line command against an item listed on the “Plan Table Rows panel” on page 668.

Use this panel to display the rows from a table.

```

Process   Options   Utilities   Help
-----
FM/DB2 (DFA2)                Statement Table Rows                Row 1 to 1 of 1

      Query COLLECT. Progname Stmt  C  Estimated   Estimated
      Number (COLLID) (PACKG)  Type  C Serv. Units   Proc. ms Reason
      * *                *      * *                *      *
-----
__  2001071003 FMN2TEST ADBMAIN  SELECT A                13                3
***** END OF DB2 DATA *****

```

Figure 120. Statement Table Rows panel (collection ID format)

The Statement Table Rows panel shows you rows from a statement table:

**C** Input field where you can enter one of the following line commands:

<b>DK</b>	Delete rows for package
<b>DP</b>	Delete rows for plan
<b>DQ</b>	Delete rows for query number
<b>I</b>	Interpret EXPLAIN data
<b>K</b>	Show package
<b>M</b>	Show DBRM
<b>P</b>	Show plan

**Query Num** A number that identifies the SQL statement.

<b>Applname</b>	PLAN name or blank for dynamic EXPLAIN. This information only is displayed for the PLAN format of the panel.
-----------------	--

**Collect.** Collection name. This information only is displayed for the COL format of the panel.

<b>Prognose</b>	DBRM/package name.
-----------------	--------------------

<b>Stmt Type</b>	Statement type.
------------------	-----------------

C C	Cost category: A Not using default values. B Using default values when calculating costs.
Est. SU	Estimated processor cost in service units.
Est. P ms.	Estimated processor cost in milliseconds.
Reason	A string indicating the reason for putting an estimate into cost category B (see C C).

Parent panels

- “Plan Table Rows panel” on page 668

Child panels

To display this panel...	Use/do this
“EXPLAIN Interpretation panel” on page 599	Line command I
“Application Packages panel” on page 395	Line command K

Related tasks

- “Managing tables used by SQL explain” on page 358

Storage Group(s) panel

You use the Stored Group(s) panel to display information about the storage groups you have selected.

Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSTOGROUP.

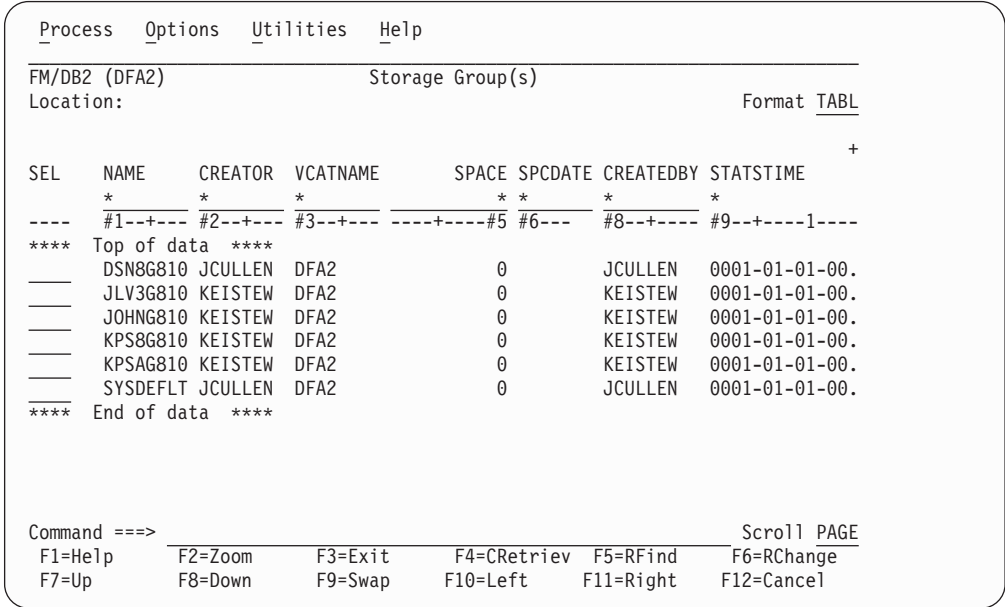


Figure 121. Storage Group(s) panel

## Storage Group(s) panel

### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

## Parent panels

- “Object List Utility panel” on page 663

## Child panels

To display this panel...	Use/do this
“Databases panel” on page 538	Line command D
“Storage Group Usage Privileges panel” on page 753	Line command P
“Table Space Parts panel” on page 767	Line command PT
“Display Row panel” on page 564	Line command ROW
“Table Spaces panel” on page 768	Line command S
“Volumes panel” on page 800	Line command VOL
“Indexes panel” on page 645	Line command X
“Index Parts panel” on page 644	Primary command XPT

## Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

## Related references

- “SORT primary command” on page 853

## Related tasks

- “Managing tables used by SQL explain” on page 358

## Storage Group Usage Privileges panel

Process Options Utilities Help

FM/DB2 (DFA2) Storage Group Usage Privileges for DSN8G810
Format TABL

SEL	GRANTOR	GRANTEE	QUALIFIER	NAME	AUTHHOEX	OBTYPEEX	USEAUTEX
----	*-----*	*-----*	*-----*	*-----*	*-----*	*-----*	*-----*
#1--+---	#2--+---	#3--+---	#4--+---	#15--+---	#16--+---	#17--+---	
****	Top of data	****					
	JCULLEN	JCULLEN		DSN8G810	SYSADM	Storage Group	Grant
	JCULLEN	PUBLIC		DSN8G810	SYSADM	Storage Group	Yes
	KEISTE2	ID1		DSN8G810	SYSADM	Storage Group	Yes
****	End of data	****					

Command ==>

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

Scroll PAGE

Figure 122. Storage Group Usage Privileges panel

**Note:** To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Storage Group(s) panel” on page 751

### Child panels

To display this panel...	Use/do this
Grant Storage Group Privileges panel	Line command G
Storage Group Use Privilege Details panel	Line command I
Revoke Storage Group Privileges panel	Line command R
“Display Row panel” on page 564	Line command ROW

### Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

### Related tasks

- “Managing tables used by SQL explain” on page 358

## Stored Procedures panel

You use the Stored Procedures panel to display information about the stored procedures you have selected.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSROUTINES.

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Stored Procedures		
Location:	Format <u>TABL</u>		
SEL	SCHEMA	NAME	ORIGINEX OWNER ROUTINEX CREATEDB
----	*-----*	*-----*	*-----*
----	#1-+-----	#3-+-----1-----	#90-+-----#2-+-----#89-+-----1-----#5-+-----
****	Top of data ****		
----	SYSPROC	DSNWZP	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNWSPM	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNUTILS	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNUTILU	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNTPSMP	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	WLM_REFRESH	External JCULLEN Stored procedure JCULLEN
----	SQLJ	INSTALL_JAR	External JCULLEN Stored procedure JCULLEN
----	SQLJ	REPLACE_JAR	External JCULLEN Stored procedure JCULLEN
----	SQLJ	REMOVE_JAR	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNACICS	External JCULLEN Stored procedure JCULLEN
----	SYSPROC	DSNACCOR	External JCULLEN Stored procedure JCULLEN
Command ==>	Scroll PAGE		
F1=Help	F2=Split	F3=Exit	F4=Expand
F9=Swap	F10=Left	F11=Right	F12=Cancel
	F7=Backward	F8=Forward	

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Schemas panel” on page 721

### Child panels

To display this panel...	Use/do this
“Alter Stored Procedure panel” on page 381	Line command A
See “Comment panels” on page 424	Line command COM

To display this panel...	Use/do this
"Create Procedure panel" on page 476	Line command CR
See "Drop panels" on page 566	Line command DR
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Privileges panels" on page 678	Line command P
"Routine Parameters panel" on page 709	Line command PARM
"Application Packages panel" on page 395	Line command PKG
Line command PS	
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Schemas panel" on page 721	Line command SCH
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Synonym Dependencies panel

FM/DB2 displays the Synonym Dependencies panel if you use the SYN line command against an item listed on:

- The "Application Plans panel" on page 397, or
- The "Application Packages panel" on page 395

## Synonyms panel

You use the Synonyms panel to list synonyms in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSSYNONYMS.

<u>Process</u>	<u>Options</u>	<u>Utilities</u>	<u>Help</u>		
FM/DB2 (DFA2)			Synonyms		
Location:			Format <u>TABL</u>		
SEL	CREATOR	NAME	TBCREATOR	TBNAME	CREATEDBY
	*	*	*	*	*
----	#2--+-	#1--+-1--+-	#4--+-1--	#3--+-1--+-	#6--+-
****	Top of data ****				
----	JCULLEN	ACT	DSN8810	ACT	JCULLEN
----	JCULLEN	DEPT	DSN8810	DEPT	JCULLEN
----	JCULLEN	EMP	DSN8810	EMP	JCULLEN
----	JCULLEN	EMPPROJACT	DSN8810	EMPPROJACT	JCULLEN
----	JCULLEN	PROJ	DSN8810	PROJ	JCULLEN
----	JCULLEN	PROJACT	DSN8810	PROJACT	JCULLEN
----	JCULLEN	TCONA	DSN8810	TCONA	JCULLEN
----	JCULLEN	TDSPTXT	DSN8810	TDSPTXT	JCULLEN
----	JCULLEN	TOPTVAL	DSN8810	TOPTVAL	JCULLEN
----	JCULLEN	VACT	DSN8810	VACT	JCULLEN
----	JCULLEN	VASTRDE1	DSN8810	VASTRDE1	JCULLEN
Command ==>					Scroll <u>PAGE</u>
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Tables, Views and Aliases panel” on page 776

### Child panels

To display this panel...	Use/do this
“Create Synonym panel” on page 485	Line command CR
“Create Alias panel” on page 445	Line command CRA

To display this panel...	Use/do this
See “Drop panels” on page 566	Line command DR
“Details panels” on page 564	Line command I
“Display Row panel” on page 564	Line command ROW
“Tables, Views and Aliases panel” on page 776	Line command T
“Sort Fields panel” on page 747	Primary command SORT

## Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

## Related references

- “SORT primary command” on page 853



## Table Browse panel

### Panel and field definitions

<u>Process</u>	<u>Options</u>	<u>Utilities</u>	<u>Help</u>				
FM/DB2 (DFA2)				Table Browse		3 rows fetched	
TABLE FMNUSER.EMP				Format TABL			
EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE	JOB
#1	#2	#3	#4	#5	#6	#7	#8 +
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)	DATE	CH(8)
PU-->	<---+-----1->	-	<---+-----1----->	<-NF	<-->	<---+----->	<---+>
**** Top of data ****							
000010	CHRISTINE<	I	HAAS<	A00	3978	01/01/1965	PRES
000110	VINCENZO<	G	LUCCHESI<	A00	3490	05/16/1958	SALESR
200010	DIAN<	J	HEMMINGER<	A00	3978	01/01/1965	SALESR
**** End of data ****							
Command ==>				Scroll PAGE			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange		
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel		

Process	Options	Utilities	Help				
FM/DB2 (DFA2)							
Table Browse							
44 rows fetched							
TABLE FMUSER.EMP							
Format TABL							
EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE	JOB
#1	#2	#3	#4	#5	#6	#7	#8 +
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)	CH(3)	CH(4)	DATE	CH(8)
PU-->	<-----1-->	-	<-----1----->	<-NF	<-->	<----->	<----->
**** Top of data ****							
000010	CHRISTINE<	I	HAAS<	A00	3978	01/01/1965	PRES
000020	MICHAEL<	L	THOMPSON<	B01	3476	10/10/1973	MANAGE
000030	SALLY<	A	KWAN<	C01	4738	04/05/1975	MANAGE
000050	JOHN<	B	GEYER<	E01	6789	08/17/1949	MANAGE
000060	IRVING<	F	STERN<	D11	6423	09/14/1973	MANAGE
000070	EVA<	D	PULASKI<	D21	7831	09/30/1980	MANAGE
000090	EILEEN<	W	HENDERSON<	E11	5498	08/15/1970	MANAGE
000100	THEODORE<	Q	SPENSER<	E21	0972	06/19/1980	MANAGE
000110	VINCENZO<	G	LUCCHESE<	A00	3490	05/16/1958	SALESR
000120	SEAN<		O'CONNELL<	A00	2167	12/05/1963	CLERK
000130	DOLORES<	M	QUINTANA<	C01	4578	07/28/1971	ANALYS
000140	HEATHER<	A	NICHOLLS<	C01	1793	12/15/1976	ANALYS
000150	BRUCE<		ADAMSON<	D11	4510	02/12/1972	DESIGN
000160	ELIZABETH<	R	PIANKA<	D11	3782	10/11/1977	DESIGN
000170	MASATOSHI<	J	YOSHIMURA<	D11	2890	09/15/1978	DESIGN
000180	MARILYN<	S	SCOUTTEN<	D11	1682	07/07/1973	DESIGN
000190	JAMES<	H	WALKER<	D11	2986	07/26/1974	DESIGN
000200	DAVID<		BROWN<	D11	4501	03/03/1966	DESIGN
000210	WILLIAM<	T	JONES<	D11	0942	04/11/1979	DESIGN
000220	JENNIFER<	K	LUTZ<	D11	0672	08/29/1968	DESIGN
000230	JAMES<	J	JEFFERSON<	D21	2094	11/21/1966	CLERK
000240	SALVATORE<	M	MARINO<	D21	3780	12/05/1979	CLERK
000250	DANIEL<	S	SMITH<	D21	0961	10/30/1969	CLERK
000260	SYBIL<	V	JOHNSON<	D21	8953	09/11/1975	CLERK
000270	MARIA<	L	PEREZ<	D21	9001	09/30/1980	CLERK
000280	ETHEL<	R	SCHNEIDER<	E11	8997	03/24/1967	OPERAT
000290	JOHN<	R	PARKER<	E11	4502	05/30/1980	OPERAT
000300	PHILIP<	X	SMITH<	E11	2095	06/19/1972	OPERAT
000310	MAUDE<	F	SETRIGHT<	E11	3332	09/12/1964	OPERAT
000320	RAMLAL<	V	MEHTA<	E21	9990	07/07/1965	FIELDR
000330	WING<		LEE<	E21	2103	02/23/1976	FIELDR
000340	JASON<	R	GOUNOT<	E21	5698	05/05/1947	FIELDR
200010	DIAN<	J	HEMMINGER<	A00	3978	01/01/1965	SALESR
200120	GREG<		ORLANDO<	A00	2167	05/05/1972	CLERK
200140	KIM<	N	NATZ<	C01	1793	12/15/1976	ANALYS
200170	KIYOSHI<		YAMAMOTO<	D11	2890	09/15/1978	DESIGN
200220	REBA<	K	JOHN<	D11	0672	08/29/1968	DESIGN
200240	ROBERT<	M	MONTEVERDE<	D21	3780	12/05/1979	CLERK
200280	EILEEN<	R	SCHWARTZ<	E11	8997	03/24/1967	OPERAT
200310	MICHELLE<	F	SPRINGER<	E11	3332	09/12/1964	OPERAT
200330	HELENA<		WONG<	E21	2103	02/23/1976	FIELDR
200340	ROY<	R	ALONZO<	E21	5698	05/05/1947	FIELDR
**** End of data ****							
Command ==>				Scroll PAGE			
F1=Help	F2=Zoom	F3=Exit	F4=CRetrieve	F5=RFind	F6=RChange		
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel		

Figure 123. Sample data

## Parent panels

- “DB2 Browse panel” on page 540
- “Column Selection/Edit panel” on page 419

## Child panels

None.

## Related tasks

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### Table Check Constraint Dependencies panel

FM/DB2 displays the Table Check Constraint Dependencies panel if you use the DEP line command against an item listed on the “Table Check Constraints panel.”

---

### Table Check Constraint Details panel

FM/DB2 displays the Table Check Constraint panel if you use the I line command against an item listed on the “Table Check Constraints panel.”

---

### Table Check Constraints panel

FM/DB2 displays the Table Check Constraints panel if you use the CK line command against an item listed on the “Tables, Views and Aliases panel” on page 776.

## Table Edit panel

## Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Table Edit		42 rows fetched
TABLE FMNUSER.EMP			Format TABL
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU--+>	<---+-----1-->	-	<---+-----1----->
000000	****	Top of data	****
000001	000010	CHRISTINE<	I
000002	000020	MICHAEL<	L
000003	000030	SALLY<	A
000004	000050	JOHN<	B
000005	000060	IRVING<	F
000006	000070	EVA<	D
000007	000090	EILEEN<	W
000008	000100	THEODORE<	Q
000009	000110	VINCENZO<	G
000010	000120	sean<	O'CONNELL<
000011	000130	DOLORES<	M
000012	000140	HEATHER<	A
000013	000150	BRUCE<	A
Command ==>			Scroll PAGE
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F12=Cancel

## Prefix area

In TABL format mode, you can enter the following commands in the prefix area of the data display:

- A** Identifies the row after which data is to be moved or copied.
- B** Identifies the row before which data is to be moved or copied.
- C** Copy one row.
- Cn** Copy *n* rows.
- CC** Copy block of rows. Mark start and end of block.
- D** Delete one row.
- Dn** Delete *n* rows.
- DD** Delete block of rows. Mark start and end of block.
- E** Display a panel containing information about why a change to this row failed. The E command is only valid when a row is marked in error. Rows marked in error have “=ERR”, “ERR R”, or the SQLCODE in the prefix field.
- F** Display the first row of a block of excluded rows.
- Fn** Display the first *n* rows of a block of excluded rows.
- FS** Change the display format to SNGL and display the row.
- G** Get the data stored on the clipboard. Rows saved

on the clipboard with the S, Sn or SS prefix commands can only be retrieved from the clipboard with the G prefix command during the same Edit session. The clipboard is a temporary memory buffer that is cleared when you exit from the DB2 Edit function panel (and FM/DB2 returns you to the Primary Option Menu).

**I** Insert one row. The row is initialized using the row description of the currently displayed row. For each column, if it has a default value (DEFAULT="value", and not just the DEFAULT keyword), then it is initialized to that value. Otherwise, the column is initialized according to its data type:

<b>Character strings</b>	Set to blanks
<b>Numeric</b>	Set to zeros
<b>Row identifier</b>	Set to blanks
<b>DATE</b>	Set to the current date
<b>TIME</b>	Set to the current time
<b>TIMESTAMP</b>	Set to the current date and time

**Note:** If a column of the inserted row can contain a null value, it is set to the null value and the null column display indicator is displayed in the displayed column.

For more information about setting the value of the null column display indicator, see "View and Edit options (options 1 and 2)" on page 48.

#### RELATED TASKS

- "View and Edit options (options 1 and 2)" on page 48

#### RELATED REFERENCES

- Chapter 14, "DB2 data types," on page 367

**In** Insert *n* empty rows.

**IP** Insert a primary key. In an Edit session of a related parent table only, insert a row with the key columns set to the key value that originally caused the error in the dependent table of the relationship.

**IP<sub>n</sub>** Insert *n* primary keys. In an Edit session of a related parent table only, insert *n* rows with the key columns set to the key value that originally caused the error in the dependent table of the relationship. If you attempt to save the data, it

results in duplicate key errors for the second and all subsequent inserted rows, as primary key values must be unique.

<b>L</b>	Display the last row of a block of excluded rows.
<b>Ln</b>	Display the last <i>n</i> rows of a block of excluded rows.
<b>LC</b>	Convert all uppercase characters in a row to lowercase.
	<b>Note:</b> The LC (LC <i>n</i> , LCC) command affects <i>all</i> characters in a row, not just characters in columns with a CHAR or VARCHAR data type. Therefore, numeric data, such as binary data or packed decimal data, can be corrupted when you use these commands.
<b>LCn</b>	Convert all uppercase characters in <i>n</i> rows to lowercase. (See note for <b>LC</b> .)
<b>LCC</b>	Convert all uppercase characters in a block of rows to lowercase. Mark start and end of block. (See note for <b>LC</b> .)
<b>M</b>	Move one row.
<b>Mn</b>	Move <i>n</i> rows.
<b>MM</b>	Move block of rows. Mark start and end of the block.
<b>O</b>	Overlay one row.
<b>On</b>	Overlay <i>n</i> rows.
<b>OO</b>	Overlay block of rows. Mark start and end of the block.
<b>P</b>	Identifies the row preceding which data is to be moved or copied .
<b>R or "</b>	Repeat one row.
<b>Rn or "n</b>	Repeat <i>n</i> rows.
<b>RE</b>	Edit a related table. You can use the RE prefix command to edit the related table when the row is marked with a error caused by a referential constraint.

You can only enter the RE prefix command against a row marked in error, where the rightmost position of the prefix area contains an "R". RE starts another FM/DB2 *dependent* edit session, in a new ISPF logical session. The new (dependent) FM/DB2 Edit session is for the related table in the relationship that caused the referential constraint error. For more details, see "Editing related tables" on page 150.

**Note:** When you use the RE prefix command for a row whose prefix area contains "=ERR R",

take care to avoid the editor interpreting the RE command as an R prefix command instead by ensuring the "RE" is followed by one or more blanks).

The RE command lets you quickly identify and resolve referential constraint errors. After you use the RE command to edit a related table, you cannot save data until you end the dependent Edit session of the related table.

This restriction also applies to tables that are part of a larger referential structure. For example, say A, B and C are related tables and A and B are part of a relationship in which A is the parent table, and B and C are part of a relationship in which B is the parent table. If you edit table A, then use the RE command to edit related table B, then use the RE command in the Edit session of table B to edit table C, it would result in 3 FM/DB2 Edit sessions. The Edit sessions for tables B and C are both dependent edit sessions of the Edit session for table A. You cannot save data in the Edit session for table A until you end the Edit sessions for tables B and C.

<b>RR</b> or <b>""</b>	Repeat block of rows. Mark start and end of the block.
<b>RR<math>n</math></b> or <b>""<math>n</math></b>	Repeat block of rows $n$ times. Mark start and end of block.
<b>S</b>	Save row on clipboard. The clipboard is a temporary memory buffer that is cleared when you exit from the DB2 Edit function panel (and FM/DB2 returns you to the Primary Option Menu).
<b>S<math>n</math></b>	Save $n$ rows on the clipboard.
<b>SS</b>	Save blocks of rows on the clipboard. Mark start and end of block.
<b>UC</b>	Convert all lowercase characters in a row to uppercase.
	<b>Note:</b> The UC (UC $n$ , UCC) command affects <i>all</i> characters in a row, not just characters in columns with a CHAR or VARCHAR data type. Therefore, numeric data, such as binary data or packed decimal data, can be corrupted when you use these commands.
<b>UC<math>n</math></b>	Convert all lowercase characters in $n$ rows to uppercase. (See note for UC.)
<b>UCC</b>	Convert all lowercase characters in a block of rows to uppercase. Mark start and end of block. (See note for UC.)
<b>X</b>	Exclude row from display. If the display of

	excluded row shadow lines is enabled (see “SHADOW primary command” on page 851), a shadow line is shown indicating how many rows are being excluded at this position. To display an excluded row, use the F or LA prefix command.
<i>Xn</i>	Exclude <i>n</i> rows from display. If the display of excluded row shadow lines is enabled (see “SHADOW primary command” on page 851), a shadow line is shown indicating how many rows are being excluded at this position.
<i>XX</i>	Exclude block of rows from display. Mark start and end of block. If the display of excluded row shadow lines is enabled (see “SHADOW primary command” on page 851), a shadow line is shown indicating how many rows are being excluded at this position.
<i>.xxxx</i>	Label a row. The label, <i>xxxx</i> , is a string of 1 to 4 alphabetic characters, that does not start with the character “Z” (labels starting with “Z” are system labels). Labels can be assigned to any row. Labels cannot be assigned to shadow lines.

## Parent panels

- “DB2 Edit panel” on page 544
- “Column Selection/Edit panel” on page 419

## Child panels

None.

## Related tasks



## Table Edit (related) panel

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Table Edit (related)	Parent table
DPDNT FMNUSER.PROJACT		NAME FMNUSER.ACT	Format <u>TABL</u>
	ACTNO ACTKWD ACTDESC		
	#1 #2 #3		
	SMINT CH(6) VARCHAR(20)		
	PU--+K <--+> <--+-----1-----+----->		
000000	**** Top of data ****		
000001	10 MANAGE MANAGE/ADVISE<		
000002	20 ECOST ESTIMATE COST<		
000003	30 DEFINE DEFINE SPECS<		
000004	40 LEADPR LEAD PROGRAM/DESIGN<		
000005	50 SPECS WRITE SPECS<		
000006	60 LOGIC DESCRIBE LOGIC<		
000007	70 CODE CODE PROGRAMS<		
000008	80 TEST TEST PROGRAMS<		
000009	90 ADMQS ADM QUERY SYSTEM<		
000010	100 TEACH TEACH CLASSES<		
000011	110 COURSE DEVELOP COURSES<		
000012	120 STAFF PERS AND STAFFING<		
000013	130 OPERAT OPER COMPUTER SYS<		
000014	140 MAINT MAINT SOFTWARE SYS<		
000015	150 ADMSYS ADM OPERATING SYS<		
000016	160 ADMDB ADM DATA BASES<		
000017	170 ADMDC ADM DATA COMM<		
000018	180 DOC DOCUMENT<		
000019	**** End of data ****		

### Parent panels

This panel appears when you use the REDIT primary command from within an error information panel (providing the error information panel offers REDIT as an option) when a referential integrity error has occurred.

### Child panels

None.

### Related tasks

Table Selection panel

You use the Table Selection panel to select a table from a list of tables produced when you have used an asterisk (\*) or a pattern when specifying a DB2 object name.

Panel and field definitions

Process

Opti

FM/DB2 (DB26)

Specify the DB2

Location .

Owner . . .

Name . . .

Template:

Data set nam

Member . .

Processing Opti

Template usa

3 1. Above

2. Previo

3. Genera

4. Genera

Command ==>

F1=Help

F9=Swap

F

F1

Table Selection

Row 1 to 9 of 9

Select one of the tables from the list.

S	Owner	Name	Database	Space	Type
—	FMDB2	AUX_EMP_RESUME	FMDB2DL	FMDB2SN	AUX TABLE
—	FMDB2	EEMP	FMDB2DA	FMDB2SR	TABLE
—	FMDB2	EMP	FMDB2DA	FMDB2SE	TABLE
—	FMDB2	EMP_PHOTO_RESUME	FMDB2DL	FMDB2SB	TABLE
—	FMDB2	EMPPROJACT	FMDB2DA	FMDB2SP	TABLE
—	FMDB2	VEMP	FMDB2DA	FMDB2SE	VIEW
—	FMDB2	VEMPDPT1	FMDB2DA	FMDB2SE	VIEW
—	FMDB2	VEMPLP	FMDB2DA	FMDB2SE	VIEW
—	FMDB2	VEMPPROJACT	FMDB2DA	FMDB2SP	VIEW

\*\*\*\*\* Bottom of data \*\*\*\*\*

Command ==>

F1=Help

F2=Split

F3=Exit

F7=Backward

F8=Forward

F9=Swap

F12=Cancel

- S

Selection column. To select a table, type S.
- Owner

The name of the owner of the table.
- Name

The name of the table.
- Database

The name of the database containing the table.
- Table Space

The name of the table space containing the table.
- Type

The DB2 object type.

Parent panels

This panel appears when you enter an asterisk (\*) or pattern in one or more of the following fields when specifying a DB2 object name: **Owner**, **Name**, **Database**, **Table space**.

Child panels

None.

Related tasks

- “Specifying a DB2 object name” on page 29

Table Space Parts panel

FM/DB2 displays the Table Space Parts panel if you use the PT line command against an item listed on the “Table Spaces panel” on page 768.

## Table Spaces panel

You use the Table Spaces panel to list table space object types in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSTABLESPACE.

Process	Options	Utilities	Help				
FM/DB2 (DFA2)				Table Spaces			
Location:				Format <u>TABL</u>			
SEL	NAME	CREATOR	DBNAME	DBID	OBID	PSID	BP00L
*	*	*	*	*	*	*	*
----	#1--+-	#2--+-1----	#3--+-	----#4	----#5	----#6	#7--+-
****	Top of data ****						
----	DEPTRV8R	YEH	DSNDB04	4	41	42	BP0
----	DSN32K01	JCULLEN	DSNDB07	7	3	4	BP32K
----	DSN4K01	JCULLEN	DSNDB07	7	1	2	BP0
----	DSN8S81C	JCULLEN	DSN8D81P	260	1	2	BP0
----	DSN8S81D	JCULLEN	DSN8D81A	259	1	2	BP0
----	DSN8S81E	JCULLEN	DSN8D81A	259	3	4	BP0
----	DSN8S81P	JCULLEN	DSN8D81A	259	7	8	BP0
----	DSN8S81Q	JCULLEN	DSN8D81P	260	3	4	BP0
----	DSN8S81R	JCULLEN	DSN8D81A	259	5	6	BP0
----	DSN8S81S	JCULLEN	DSN8D81A	259	9	10	BP0
----	DSNASDMA	JCULLEN	DSNATPDB	257	5	6	BP0
Command ==>				Scroll PAGE			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange		
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel		

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Databases panel” on page 538
- “Tables, Views and Aliases panel” on page 776
- “Application Packages panel” on page 395

### Child panels

To display this panel...	Use/do this
“Alter Table Space panel” on page 394	Line command A

To display this panel...	Use/do this
"Create Table Space panel" on page 489	Line command CR
"Create Table panel" on page 486	Line command CRT
"Databases panel" on page 538	Line command D
See "Drop panels" on page 566	Line command DR
"Database Structure panel" on page 537	Line command DS
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Recovery Information panel" on page 698	Line command ICS
"Privileges panels" on page 678	Line command P
"Table Space Parts panel" on page 767	Line command PT
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Tables, Views and Aliases panel" on page 776	Line command T
"DB2 Utilities panel" on page 556	Line command UTL
"Sort Fields panel" on page 747	Primary command SORT

## Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

## Related references

- "SORT primary command" on page 853

## Table View panel

## Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		Table View	42 rows fetched
TABLE FMNUSER.EMP			Format TABL
EMPNO	FIRSTNME	MIDINIT	LASTNAME
#1	#2	#3	#4
CH(6)	VARCHAR(12)	CH(1)	VARCHAR(15)
PU-->	<---+-----1-->	-	<---+-----1----->
000000	****	Top of data	****
000001	000010	CHRISTINE<	I
000002	000020	MICHAEL<	L
000003	000030	SALLY<	A
000004	000050	JOHN<	B
000005	000060	IRVING<	F
000006	000070	EVA<	D
000007	000090	EILEEN<	W
000008	000100	THEODORE<	Q
000009	000110	VINCENZO<	G
000010	000120	sean<	O'CONNELL<
000011	000130	DOLORES<	M
000012	000140	HEATHER<	A
000013	000150	BRUCE<	A
Command ==>			
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev
F7=Up	F8=Down	F9=Swap	F10=Left
			F11=Right
			F6=RChange
			F12=Cancel

## Prefix area

In TABL format mode, you can enter the following commands in the prefix area of the data display:

- A** Identifies the row after which data is to be moved or copied.
- B** Identifies the row before which data is to be moved or copied.
- C** Copy one row.
- Cn** Copy *n* rows.
- CC** Copy block of rows. Mark start and end of block.
- D** Delete one row.
- Dn** Delete *n* rows.
- DD** Delete block of rows. Mark start and end of block.
- E** Display a panel containing information about why a change to this row failed. The E command is only valid when a row is marked in error. Rows marked in error have “=ERR”, “ERR R”, or the SQLCODE in the prefix field.
- F** Display the first row of a block of excluded rows.
- Fn** Display the first *n* rows of a block of excluded rows.
- FS** Change the display format to SNGL and display the row.
- G** Get the data stored on the clipboard. Rows saved

on the clipboard with the S, Sn or SS prefix commands can only be retrieved from the clipboard with the G prefix command during the same Edit session. The clipboard is a temporary memory buffer that is cleared when you exit from the DB2 Edit function panel (and FM/DB2 returns you to the Primary Option Menu).

**I** Insert one row. The row is initialized using the row description of the currently displayed row. For each column, if it has a default value (DEFAULT="value", and not just the DEFAULT keyword), then it is initialized to that value. Otherwise, the column is initialized according to its data type:

<b>Character strings</b>	Set to blanks
<b>Numeric</b>	Set to zeros
<b>Row identifier</b>	Set to blanks
<b>DATE</b>	Set to the current date
<b>TIME</b>	Set to the current time
<b>TIMESTAMP</b>	Set to the current date and time

**Note:** If a column of the inserted row can contain a null value, it is set to the null value and the null column display indicator is displayed in the displayed column.

For more information about setting the value of the null column display indicator, see "View and Edit options (options 1 and 2)" on page 48.

RELATED TASKS

- "View and Edit options (options 1 and 2)" on page 48

RELATED REFERENCES

- Chapter 14, "DB2 data types," on page 367

**In** Insert *n* empty rows.

**IP** Insert a primary key. In an Edit session of a related parent table only, insert a row with the key columns set to the key value that originally caused the error in the dependent table of the relationship.

**IP<sub>n</sub>** Insert *n* primary keys. In an Edit session of a related parent table only, insert *n* rows with the key columns set to the key value that originally caused the error in the dependent table of the relationship. If you attempt to save the data, it

## Table View panel

results in duplicate key errors for the second and all subsequent inserted rows, as primary key values must be unique.

<b>L</b>	Display the last row of a block of excluded rows.
<b>Ln</b>	Display the last <i>n</i> rows of a block of excluded rows.
<b>LC</b>	Convert all uppercase characters in a row to lowercase.
	<b>Note:</b> The LC (LC <i>n</i> , LCC) command affects <i>all</i> characters in a row, not just characters in columns with a CHAR or VARCHAR data type. Therefore, numeric data, such as binary data or packed decimal data, can be corrupted when you use these commands.
<b>LCn</b>	Convert all uppercase characters in <i>n</i> rows to lowercase. (See note for <b>LC</b> .)
<b>LCC</b>	Convert all uppercase characters in a block of rows to lowercase. Mark start and end of block. (See note for <b>LC</b> .)
<b>M</b>	Move one row.
<b>Mn</b>	Move <i>n</i> rows.
<b>MM</b>	Move block of rows. Mark start and end of the block.
<b>P</b>	Identifies the row preceding which data is to be moved or copied .
<b>R</b> or <b>"</b>	Repeat one row.
<b>Rn</b> or <b>"n</b>	Repeat <i>n</i> rows.
<b>RE</b>	Edit a related table. You can use the RE prefix command to edit the related table when the row is marked with a error caused by a referential constraint.

You can only enter the RE prefix command against a row marked in error, where the rightmost position of the prefix area contains an "R". RE starts another FM/DB2 *dependent* edit session, in a new ISPF logical session. The new (dependent) FM/DB2 Edit session is for the related table in the relationship that caused the referential constraint error. For more details, see "Editing related tables" on page 150.

**Note:** When you use the RE prefix command for a row whose prefix area contains "=ERR R", take care to avoid the editor interpreting the RE command as an R prefix command instead by ensuring the "RE" is followed by one or more blanks).

The RE command lets you quickly identify and resolve referential constraint errors. After you use the RE command to edit a related table, you cannot save data until you end the dependent Edit session of the related table.

This restriction also applies to tables that are part of a larger referential structure. For example, say A, B and C are related tables and A and B are part of a relationship in which A is the parent table, and B and C are part of a relationship in which B is the parent table. If you edit table A, then use the RE command to edit related table B, then use the RE command in the Edit session of table B to edit table C, it would result in 3 FM/DB2 Edit sessions. The Edit sessions for tables B and C are both dependent edit sessions of the Edit session for table A. You cannot save data in the Edit session for table A until you end the Edit sessions for tables B and C.

<b>RR</b> or <b>""</b>	Repeat block of rows. Mark start and end of the block.
<b>RR<math>n</math></b> or <b>""<math>n</math></b>	Repeat block of rows $n$ times. Mark start and end of block.
<b>S</b>	Save row on clipboard. The clipboard is a temporary memory buffer that is cleared when you exit from the DB2 Edit function panel (and FM/DB2 returns you to the Primary Option Menu).
<b>S<math>n</math></b>	Save $n$ rows on the clipboard.
<b>SS</b>	Save blocks of rows on the clipboard. Mark start and end of block.
<b>UC</b>	Convert all lowercase characters in a row to uppercase.
	<b>Note:</b> The UC (UC $n$ , UCC) command affects <i>all</i> characters in a row, not just characters in columns with a CHAR or VARCHAR data type. Therefore, numeric data, such as binary data or packed decimal data, can be corrupted when you use these commands.
<b>UC<math>n</math></b>	Convert all lowercase characters in $n$ rows to uppercase. (See note for <b>UC</b> .)
<b>UCC</b>	Convert all lowercase characters in a block of rows to uppercase. Mark start and end of block. (See note for <b>UC</b> .)
<b>X</b>	Exclude row from display. If the display of excluded row shadow lines is enabled (see "SHADOW primary command" on page 851), a shadow line is shown indicating how many rows are being excluded at this position. To display an excluded row, use the F or LA prefix command.



## Table View panel

<i>Xn</i>	Exclude <i>n</i> rows from display. If the display of excluded row shadow lines is enabled (see “SHADOW primary command” on page 851), a shadow line is shown indicating how many rows are being excluded at this position.
<i>XX</i>	Exclude block of rows from display. Mark start and end of block. If the display of excluded row shadow lines is enabled (see “SHADOW primary command” on page 851), a shadow line is shown indicating how many rows are being excluded at this position.
<i>.xxxx</i>	Label a row. The label, <i>xxxx</i> , is a string of 1 to 4 alphabetic characters, that does not start with the character “Z” (labels starting with “Z” are system labels). Labels can be assigned to any row. Labels cannot be assigned to shadow lines.

### Parent panels

- “DB2 View panel” on page 559
- “Column Selection/Edit panel” on page 419

### Child panels

None.

### Related tasks

## Table/View/Alias Selection panel

You use the Table/View/Alias Selection panel to select a table, view, or alias from a list produced when you have used an asterisk (\*) or a pattern when specifying a DB2 object name.

### Panel and field definitions

Table/View/Alias Selection

Row 1 to 13 of 39

Select one of the tables/views/aliases from the list.

S	Owner	+ Table/View/Alias Name	+ Database	Space	Type
-	FMNUSER	ACT	JOHND81A	JOHNS81P	TABLE
-	FMNUSER	DEPT	JOHND81A	JOHNS81D	TABLE
-	FMNUSER	EACT	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	EDEPT	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	EEMP	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	EEPA	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	EMP	JOHND81A	JOHNS81E	TABLE
-	FMNUSER	EMPPROJACT	JOHND81A	JOHNS81P	TABLE
-	FMNUSER	EPROJ	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	EPROJACT	JOHND81A	JOHNS81R	TABLE
-	FMNUSER	MAP_TBL	JOHND81P	JOHNS81Q	TABLE
-	FMNUSER	PARTS	JOHND81A	JOHNS81S	TABLE
-	FMNUSER	PROJ	JOHND81A	JOHNS81P	TABLE

Command ==>

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

**S** Selection column. To select a table, type S.

**Owner** The name of the owner of the table.

**Table/View/Alias Name**  
The name of the table, view, or alias.

**Database** The name of the database containing the table.

**Table Space** The name of the table space containing the table.

**Type** The DB2 object type.

### Parent panels

This panel appears when you enter an asterisk (\*) or pattern in one or more of the following fields when specifying a DB2 object name: **Owner**, **Name**, **Database**, **Table space**.

### Child panels

None.

### Related tasks

- “Specifying a DB2 object name” on page 29

## Tables, Views and Aliases panel

You use the Tables, Views and Aliases panel to list table, view, and alias object types in the DB2 catalog.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSTABLES.

Process	Options	Utilities	Help
FM/DB2 (DFA2)	Tables, Views and Aliases		
Location:	Format <u>TABL</u>		
SEL	CREATOR	NAME	DBNAME TYPEEX
----	*-----1-----	*-----1-----	*-----1-----2-----
****	Top of data	****	
----	CARLAND	PMR91932	DSNDB04 Table
----	COSTIGN	EMP	DSNDB04 Table
----	DSN8810	ACT	DSN8D81A Table
----	DSN8810	DEPT	DSN8D81A Table
----	DSN8810	EACT	DSN8D81A Table
----	DSN8810	EDEPT	DSN8D81A Table
----	DSN8810	EEMP	DSN8D81A Table
----	DSN8810	EEPA	DSN8D81A Table
----	DSN8810	EMP	DSN8D81A Table
----	DSN8810	EMPPROJACT	DSN8D81A Table
----	DSN8810	EPROJ	DSN8D81A Table
Command ==>	Scroll PAGE		
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev F5=RFind F6=RChange
F7=Up	F8=Down	F9=Swap	F10=Left F11=Right F12=Cancel

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

This panel appears when you specify the T line command against an object displayed in a list of DB2 objects.

### Child panels

To display this panel...	Use/do this
“Alter Table panel” on page 382	Line command A
“Alter Table - ADD CHECK Constraint panel” on page 383	Line command ADD

To display this panel...	Use/do this
"Tables, Views and Aliases panel" on page 776	Line command ALS
"Tables, Views and Aliases panel" on page 776	Line command AT
"DB2 Browse panel" on page 540	Line command B
"Tables, Views and Aliases panel" on page 776	Line command BT
"Copy Utility ("From") panel" on page 430	Line command C
"Column Distribution panel" on page 418	Line command CDI
"Tables, Views and Aliases panel" on page 776	Line command CH
"Children of Table panel" on page 404	Line command CHR
"Table Check Constraints panel" on page 760	Line command CK
"Columns in Table panel" on page 424	Line command COL
See "Comment panels" on page 424	Line command COM
"Create Table panel" on page 486	Line command CR
"Create Alias panel" on page 445	Line command CRA
"Create Index panel" on page 464	Line command CRX
"Columns in Table panel" on page 424	Line command CS
"Databases panel" on page 538	Line command D
See "Drop panels" on page 566	Line command DR
"DB2 Edit panel" on page 544	Line command E
"Foreign Keys for Table panel" on page 630	Line command FK
"Grant privileges panels" on page 635	Line command G
"Generate SQL From DB2 Catalog panel" on page 634	Line command GEN
"Details panels" on page 564	Line command I
"Label Table panel" on page 649	Line command LAB
"Privileges panels" on page 678	Line command P
"Tables, Views and Aliases panel" on page 776	Line command PA
"Parents of Table panel" on page 667	Line command PAR
"Primary Key for Table panel" on page 669	Line command PK
"Application Packages panel" on page 395	Line command PKG
"Application Plans panel" on page 397	Line command PL
"Print Utility panel" on page 675	Line command PR
"Revoke privileges panels" on page 709	Line command R
"Display Row panel" on page 564	Line command ROW
"Table Spaces panel" on page 768	Line command S
"Basic SELECT Prototyping panel" on page 399	Line command SEL
"Synonyms panel" on page 756	Line command SYN
"Tables, Views and Aliases panel" on page 776	Line command T
"DB2 Utilities panel" on page 556	Line command UTL
"DB2 View panel" on page 559	Line command V
"Create View Source Statements panel" on page 532	Line command VS
"Indexes panel" on page 645	Line command X
"Indexes and Columns for panel" on page 646	Line command XC

## Tables, Views and Aliases panel

To display this panel...	Use/do this
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

## TEMPLATE Options (1 of 2) panel

You use the TEMPLATE Options (1 of 2) panel to enter information used by FM/DB2 to generate TEMPLATE statements and the proper JCL statement to access the TEMPLATE library in a utility batch job.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	TEMPLATE Options (1 of 2)	Global Settings More: +	
Enter RESET to restore installation defaults.			
TEMPLATE Library Option:			
JCL DD statement:		No DD stmt is generated if field is blank	
//	SYSTEMPL DD		
//	DD		
//	DD		
//	DD		
Initial Utility Statement Option:			
Utility statement:		No statement is generated if field is blank	
TEMPLATE			
Additional statements:			
Enter "/" to select options			
- Use additional statements			
- Edit additional statements			
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieve
F8=Forward	F9=Swap	F11=NxtPage	F12=Cancel
F6=Reset	F7=Backward		

#### JCL DD statement

The information used to generate the JCL DD statement. This information is:

##### DD name

A read-only field. This holds the value that was specified in the **TEMPLATEDD DD name** field on the OPTIONS Options panel (page 665). If the library field is blank then no DD statement is generated in the utility batch job.

##### Text values

The values entered on these four lines are used directly to generate the DD statement, provided that the **DD name** field is not blank.

#### Utility statement

The field of the Utility statement is used to generate the initial utility statements. If the field is blank, and the **Use additional statements** option is not selected, then no TEMPLATE statement is generated into the utility batch job. If the input field is non-blank, then the specified TEMPLATE is generated with any additional TEMPLATE statements supplied when the **Use additional statements** option is selected.

#### Use additional statements

If this option is set then more than one TEMPLATE statement may be generated into the utility batch job. Select the Edit additional statements option to edit additional statements. Only TEMPLATE specifications that have non-blank input fields are used in the generation.

## TEMPLATE Options (1 of 2) panel

If this option is not selected, then only a non-blank value in the **Utility statement** field is used to generate the TEMPLATE statement.

### Edit additional statements

When you select this option and press Enter, the Additional TEMPLATE Statements panel (page 374) is displayed. After you have entered values on this panel and exited the panel, this option is deselected. The additional statements are used when you select the Use additional statements option.

The TEMPLATE Library Option panel has an installation-defined default. You can restore the default for the library option by entering the RESET command or pressing the RESET PF key. Each subsystem has its own installation-defined defaults. RESET also clears the **Use additional statements** option and any values in the **Utility statement** fields.

For more information, see TEMPLATE and OPTIONS statements in *DB2 Utility Guide and Reference*.

## Parent panels

.

## Child panels

To display this panel...	Use/do this
"Additional LISTDEF Statements panel" on page 374	Select the Edit additional statements option.
"TEMPLATE Options (2 of 2) panel" on page 781	Press F11

## Related tasks

- "RESET primary command" on page 847
- "Setting options for DB2 utilities" on page 282
- "DB2 Utility TEMPLATE options (option 3.UT)" on page 50

## TEMPLATE Options (2 of 2) panel

You use the TEMPLATE Options (2 of 2) panel to enter more information used by FM/DB2 to generate TEMPLATE statements and the proper JCL statement to access the TEMPLATE library in a utility batch job.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	TEMPLATE Options (2 of 2)	Global Settings	
Enter RESET to restore installation defaults.			
Utility DD-Keyword Option:			
COPY Statement:			
	COPYDDN template name .	_____	
LOAD Statement:			
	INDDN template name . .	_____	
REBUILD INDEX Statement:			
	WORKDDN template name .	_____	
REORG TABLESPACE Statement:			
	UNLDDN template name .	_____	
UNLOAD Statement:			
	PUNCHDDN template name	_____	
	UNLDDN template name .	_____	
Command ==>			
F1=Help	F2=Split	F3=Exit	F6=Reset
F9=Swap	F10=PrvPage	F12=Cancel	F7=Backward F8=Forward

#### **COPYDDN template name**

A new FM/DB2 default setting for a COPYDDN clause. The original default is the DD-name SYSCOPY.

#### **INDDN template name**

A new FM/DB2 default setting for a INDDN clause. The original default is the DD-name SYSREC00.

#### **WORKDDN template name**

A new FM/DB2 default setting for a WORKDDN clause. The original default is SYSUT1.

#### **UNLDDN template name**

A new FM/DB2 default setting for a UNLDDN clause.

The UNLDDN clause is only generated if the Unload External option of the REORG Utility (Table Spaces) panel (page 706) is set to "Y".

The original default is either the DD-name SYSREC00 or SYSREC. It depends on a number of factors including what options are chosen.

#### **PUNCHDDN template name**

A new FM/DB2 default setting for the PUNCHDDN clause. The original default is the DD-name SYSPUNCH.

#### **UNLDDN template name**

A new FM/DB2 default setting for the UNLDDN clause. The original default is the DD-name SYREC00.



### Parent panels

- “TEMPLATE Options (1 of 2) panel” on page 779

### Child panels

None.

### Related tasks

- “RESET primary command” on page 847
- “Setting options for DB2 utilities” on page 282
- “COPY utility” on page 287
- “LOAD utility” on page 290
- “Loading data described by a copybook or template” on page 293
- “REBUILD utility (indexes)” on page 296
- “REORG (table spaces)” on page 302
- “UNLOAD utility” on page 310
- “UNLOAD (tables)” on page 310
- “UNLOAD (table spaces)” on page 316
- “DB2 Utility TEMPLATE options (option 3.UT)” on page 50

## Template Mapping panel

You use the Template Mapping panel to specify the columns in the source (the “From” columns) you want transferred to the columns in the target (the “To” columns) when you are moving (copying) data.

### Panel and field definitions

Process		Options		Utilities		Help		
FM/DB2 (DFA2)		Template Mapping				Line 1 of 16		
To	FMUSER.EEMP							
From	FMUSER.EMP							
Cmd	CL#	To Column name	Datatype	NI	CL#	From Column name	Datatype	NI
**** Top of data ****								
---	1	EMPNO	CH(6)	NN	1	EMPNO	CH(6)	NN
---	2	FIRSTNME	VC(12)	NN	2	FIRSTNME	VC(12)	NN
---	3	MIDINIT	CH(1)	NN	3	MIDINIT	CH(1)	NN
---	4	LASTNAME	VC(15)	NN	4	LASTNAME	VC(15)	NN
---	5	WORKDEPT	CH(3)		5	WORKDEPT	CH(3)	
---	6	PHONENO	CH(4)		6	PHONENO	CH(4)	
---	7	HIREDATE	DATE		7	HIREDATE	DATE	
---	8	JOB	CH(8)		8	JOB	CH(8)	
---	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(9,2)	
---	13	BONUS	DEC(9,2)		13	BONUS	DEC(9,2)	
---	14	COMM	DEC(9,2)		14	COMM	DEC(9,2)	
S	15	RID	CH(4)					
---	16	TSTAMP	TIMESTAMP					
**** End of data ****								
Command ==>		Scroll PAGE						
F1=Help	F2=Split	F3=Exit	F4=CRetrieve	F5=RFind	F6=RunTemp			
F7=Up	F8=Down	F9=Swap	F12=Cancel					

**TO** The “To” DB2 object. The DB2 object to which data will be imported.

**FROM** The “From” data set. The name of the import data set.

**Cmd** Prefix command area, used to enter a template editor prefix command. S or E to edit the column mapping.

**CL# (TO)** The “To” column number. The number of the column in the “To” template.

**Column name (TO)**  
The “To” column name. The name of the column in the “To” template.

**Datatype (TO)** The “To” data type. The data type and, optionally, the length of the column in the “To” template.

**NI (TO)** The “To” Null Indicator. The null indicator for the column in the “To” template:

(blank)

The column allows null values

**NN** The column does not allow null values.

**CL# (FROM)** The “From” column number. The number of the column in the “From” template.

## Template Mapping panel

### Column name (FROM)

The "From" column name. The name of the column in the "From" template.

### Datatype (FROM)

The "From" data type. The data type and, optionally, the length of the column in the "From" template.

### NI (FROM)

The "From" Null Indicator. The null indicator for the column in the "From" template:

(blank)

The column allows null values

NN

The column does not allow null values.

## Parent panels

- "Copy Utility ("To") panel" on page 438
- "Import Utility ("To") panel" on page 641
- "Export "To" panel" on page 609
- "LOAD from panel" on page 652

## Child panels

To display this panel...	Use/do this
"From Column Mapping panel" on page 631	Enter "S" in <b>Cmd</b> field

## Related tasks

- "Specifying your own mapping" on page 87
- "Copying data from one DB2 object to another" on page 195
- "Copying data from a VSAM or QSAM file" on page 200
- "Copying data to a VSAM or QSAM file" on page 223
- "LOAD utility" on page 290

---

## Template Save panel

FM/DB2 displays the Template Save panel if you press F3 when the "Column Selection/Edit panel" on page 419 is displayed.

## Triggers panel

You use the Triggers panel to display information about the triggers you have selected.

### Panel and field definitions

The columns that are displayed include the SEL field and columns of SYSIBM.SYSTRIGGERS.

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp					
FM/DB2 (DFA2)				Triggers				
Location:				Format <u>TABL</u>				
SEL	NAME	SCHEMA	SEQNO	DBID	OBID	OWNER	CREATEDBY	TBNAME
----	*#1--+-+-----1--	*#2--+-+-----	*-----#3	*-----#4	*-----#5	*#6--+-+-----	*#7--+-+-----	*#8--+-+-----
****	Top of data	****						
---	NEW_EMPLOYEE	KEISTEW	1	261	7	KEISTEW	KEISTEW	EMPLOYEE_
---	SDAFSDFSAD	KEISTE2	1	259	64	KEISTE2	KEISTE2	DEPT
---	TRIGGER1	KEISTE2	1	259	63	KEISTE2	KEISTE2	EMP
****	End of data	****						
Command ==>				Scroll <u>PAGE</u>				
F1=Help	F2=Zoom	F3=Exit	F4=CRetriev	F5=RFind	F6=RChange			
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel			

#### Notes:

1. The system option, **Show all catalog table columns**, affects which columns FM/DB2 displays when you use the Object List utility.
2. You can also customize which columns FM/DB2 displays when you use the Object List utility. For details, see the *File Manager Customization Guide*.

To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

### Parent panels

- “Object List Utility panel” on page 663
- “Schemas panel” on page 721

### Child panels

To display this panel...	Use/do this
See “Comment panels” on page 424	Line command COM
“Create Trigger panel” on page 524	Line command CR

## Triggers panel

To display this panel...	Use/do this
See "Drop panels" on page 566	Line command DR
"Details panels" on page 564	Line command I
"Application Packages panel" on page 395	Line command PKG
"Privileges panels" on page 678	Line command PS
"Display Row panel" on page 564	Line command ROW
"Schemas panel" on page 721	Line command SCH
(ISPF panel)	Line command SQL
"Tables, Views and Aliases panel" on page 776	Line command T
"Sort Fields panel" on page 747	Primary command SORT

### Related tasks

- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

### Related references

- "SORT primary command" on page 853

## UNLOAD Options panel

You use the UNLOAD Options panel to enter information that is used in generating an UNLOAD statement in a utility batch job.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)	UNLOAD Options		Global Settings
Utility Options:			
Enter "/" to select option			
/	Allow data changes	--YES-->	Isolation Level
/	Use IEEE floating point		2 1. Cursor stability
	Allow substitution chars		2. Uncommitted rows
/	Allow padding		
Number of Records Value:			
	Maximum in Error 2		(0 or negative means no limit)
Character Representation Options:			
Encoding Scheme		CCSID Values	
2	1. Preserve encoding scheme	SBCS data . . .	0
-	2. EBCDIC	Mixed DBCS data	0
	3. ASCII	DBCS data . . .	0
	4. UNICODE		
Command ==>			
F1=Help	F2=Split	F3=Exit	F4=CRetrieval F7=Backward F8=Forward
F9=Swap	F10=Actions	F12=Cancel	

#### Allow data changes

When this option is selected, you must supply a value for the Isolation Level.

If not selected, FM/DB2 adds the SHRLEVEL REFERENCE clause to the UNLOAD utility control statements, meaning that during the unload operation, rows of the tables can be read, but can not be inserted, updated, nor deleted by other DB2 threads.

#### Isolation Level

This parameter comes into effect when the Allow data changes parameter is selected. Valid values are:

##### 1 (Cursor stability)

FM/DB2 omits a SHRLEVEL clause to the UNLOAD utility statement. This is equivalent to adding a SHRLEVEL CHANGE ISOLATION CS clause to the UNLOAD utility control statement, meaning that rows can be read, inserted, updated, and deleted from the table space or partition while the data is being unloaded and that the UNLOAD utility reads rows in cursor stability mode. This is the default value.

##### 2 (Uncommitted rows)

FM/DB2 adds a SHRLEVEL CHANGE ISOLATION UR clause to the UNLOAD utility control statement. This means that rows can be read, inserted, updated, and deleted from the table space or partition while the data is being unloaded and that uncommitted rows, if they exist, are unloaded.

## UNLOAD Options panel

### Use IEEE floating point

When this option is selected, FM/DB2 adds the FLOAT IEEE clause to the UNLOAD utility control statements.

If not selected, no clause is added; this means that the DB2 UNLOAD utility output format of the numeric floating point numbers are produced in S/390<sup>®</sup> hexadecimal Floating Point (HFP) format.

### Allow substitution chars

When this option is not selected, FM/DB2 adds the NOSUBS clause to the UNLOAD utility control statement. The default is not selected. This means that substitution characters are not allowed in strings. If character substitution is attempted while unloading data, it is treated as a conversion error.

A substitution character is sometimes placed in a string when that string is being converted from ASCII to EBCDIC, or converted from one CCSID to another. For example, substitution occurs when a character (sometimes referred to as a code point) that exists in the source CCSID (code page) does not exist in the target CCSID (code page).

### Allow padding

When this option is selected, the NOPAD clause is not added to the UNLOAD utility control statements.

If not selected, FM/DB2 adds the NOPAD clause to the UNLOAD utility control statements.

The DB2 default for UNLOAD processing is to pad variable length columns in the unloaded records to their maximum length, and the unloaded records have the same length for each table. Select the item if you wish to use the DB2 defined default behavior.

When padding is performed:

- The padded data fields are preceded by the length fields that indicate the size of the actual data without the padding.
- When the output records are reloaded using the LOAD utility, padded data fields are treated as varying length data.

### Maximum in Error

This option specifies the value for the maximum number of records in error that are allowed. The unloading process terminates when this value is reached. FM/DB2 adds a MAXERR clause with specified value to the UNLOAD utility statements. The default value is 1.

### Encoding Scheme

This option specifies the encoding scheme used by the generated UNLOAD utility control statement for all output data of the character type. Valid values are:

#### 1 (Preserve encoding scheme)

The encoding scheme of the source data is preserved (default).

- 2 EBCDIC is the encoding scheme for all output data of the character type.
- 3 ASCII is the encoding scheme for all output data of the character type.
- 4 UNICODE is the encoding scheme for all output data of the character type.

**CCSID Values**

This option specifies the values for the coded character set identifiers (CCSIDs) for the data in the output data sets. If you specify one or more non-zero values for the **SBCS data**, **Mixed DBCS data** and **DBCS data** fields, FM/DB2 adds a CCSID clause to the UNLOAD utility control statements. If all are zero, no CCSID clause is added.

**SBCS data**

Specifies the CCSID value for single byte character set (SBCS) data in output records, including data unloaded in the external character formats.

**Mixed DBCS data**

Specifies the CCSID value for mixed double byte character set (DBCS) data in output records, including data unloaded in the external character formats.

**DBCS data**

Specifies the CCSID value for DBCS data in output records, including data unloaded in the external character formats.

Zero is the default value for each of the above fields.

With the example settings shown in the figure, the following clauses are added to any generated UNLOAD:

- SHRLEVEL CHANGE ISOLATION UR
- FLOAT IEEE
- NOSUB
- MAXERR 2
- EBCDIC

**Parent panels**

.

**Child panels**

None.

**Related tasks**

- “Setting options for DB2 utilities” on page 282
- “UNLOAD (tables)” on page 310
- “Null indicator byte processing” on page 315
- “UNLOAD (table spaces)” on page 316
- “DB2 Unload utility options (option 3.UU)” on page 50



## UNLOAD Utility (Table Spaces) panel

You use the UNLOAD Utility (Table Spaces) panel to generate utility control statements using the UNLOAD TABLESPACE form of the UNLOAD utility.

### Panel and field definitions

<u>Process</u>	<u>Options</u>	<u>Utilities</u>	<u>Help</u>			
FM/DB2 (DFA2)		UNLOAD Utility (Table Spaces)		Row 1 to 13 of 157		
S P	Table	Part'n				
e R Database	Space	Range .	Part'n Number	Allocation		
l C Name	Name	One Two	Number Tables	Primary	Secdry Space	
—	DSN8D81A	DSN8S81D	— —	0 1	5 5 48	
—	DSN8D81A	DSN8S81E	— —	1 1	3 3 144	
—	DSN8D81A	DSN8S81E	— —	2 1	5 5 144	
—	DSN8D81A	DSN8S81E	— —	3 1	3 3 48	
—	DSN8D81A	DSN8S81E	— —	4 1	5 5 144	
—	DSN8D81A	DSN8S81E	— —	5 1	5 5 144	
—	DSN8D81A	DSN8S81P	— —	0 4	40 20 192	
—	DSN8D81A	DSN8S81R	— —	0 6	5 5 0	
—	DSN8D81A	DSN8S81S	— —	0 1	5 5 0	
—	DSN8D81E	DSN8S81U	— —	0 1	3 2 0	
—	DSN8D81P	DSN8S81C	— —	0 3	40 20 192	
—	DSN8D81P	DSN8S81Q	— —	0 1	40 20 0	
—	DSNATPDB	DSNATPTS	— —	0 2	4 4 0	
Command ==>				Scroll PAGE		
F1=Help		F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F12=Cancel						

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “UNLOAD utility” on page 310
- “UNLOAD (table spaces)” on page 316
- “Where you can use templates” on page 8

## UNLOAD Utility (Table Spaces) with LISTDEF panel

You use the UNLOAD Utility (Table Spaces) with LISTDEF panel to generate utility control statements using the UNLOAD TABLESPACE form of the UNLOAD utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		UNLOAD Utility (Tables)	Row 1 to 2 of 2
P R LISTDEF Cmd C Name * FRED JAMES ***** Bottom of data *****			
Command ==> _____ Scroll PAGE F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)  
**R(n)** Repeat the current row (n times)  
**D(n)** Delete (n) row(s)  
**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

## UNLOAD Utility (Table Spaces) with LISTDEF panel

### Related tasks

- “UNLOAD utility” on page 310
- “UNLOAD (table spaces) with LISTDEF specified” on page 318
- “Where you can use templates” on page 8

UNLOAD Utility (Tables) "From" panel

You use the UNLOAD Utility (Tables) "From" panel to specify the name of the DB2 object that contains the data to be unloaded, the (optional) name of a template data set, and processing options.

Panel and field definitions

ProcessOptionsUtilitiesHelp

FM/DB2 (DFA2)UNLOAD Utility (Tables)

From DB2 Object:

Location . . . . .Database . . . . . (optional)

Owner . . . . . FMNUSER + Table space . . . . . (optional)

Name . . . . . EMP +

Unload Count . . . ALLNumber of rows to unload

From Template:

Data set name . . . . .

Member . . . . .

Processing Options:

Template usageEnter "/", "A"lways to select option

3 1. Above\_ Edit template

2. Previous

3. Generate from table

4. Generate/Replace

Command ==>

F1=HelpF2=SplitF3=ExitF4=ExpandF7=BackwardF8=Forward

F9=SwapF10=LeftF11=RightF12=Cancel

Parent panels

- "DB2 Utilities panel" on page 556

Child panels

To display this panel...	Use/do this
"UNLOAD Utility (Tables) "To" panel" on page 794	Press Enter

Related tasks

- "UNLOAD utility" on page 310
- "UNLOAD (tables)" on page 310
- "Where you can use templates" on page 8

### UNLOAD Utility (Tables) "To" panel

You use the UNLOAD Utility (Tables) "To" panel to specify the name of the data set that will contain the data to be unloaded, the (optional) name of a template data set, and processing options.

#### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
Unload from FMNUSER.EMP			
Output Data:			
Data set name . . . FRED			
Member . . . . .			
Volume . . . . .			
To Copybook or Template:			
Data set name . . . 'FMNUSER.DATA'			
Member . . . . . FMNCDATA			
Processing Options:			
Template usage			
4	1. Above	2	1. Old or Reuse
-	2. Previous	-	2. Mod
3. Generate from input			
4. Generate and save			
5. None			
Enter "/", "A" always			
View UNLOAD options			
Edit template mapping			
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

#### Parent panels

- "UNLOAD Utility (Tables) "From" panel" on page 793

#### Child panels

None.

#### Related tasks

- "UNLOAD utility" on page 310
- "UNLOAD (tables)" on page 310
- "Specifying a data set and a member name" on page 34
- "Letting FM/DB2 do the mapping" on page 87
- "Specifying your own mapping" on page 87

## UNLOAD Utility (Tables) with LISTDEF panel

You use the UNLOAD Utility (Tables) with LISTDEF panel to generate utility control statements using the UNLOAD TABLESPACE form of the UNLOAD utility.

### Panel and field definitions

Process	Options	Utilities	Help
FM/DB2 (DFA2)		UNLOAD Utility (Tables)	Row 1 to 1 of 1
P R LISTDEF Cmd C Name FRED ***** Bottom of data *****			
Command ==> _____ Scroll PAGE F1=Help    F2=Split    F3=Exit    F7=Backward    F8=Forward    F9=Swap F12=Cancel			

**Cmd** You can enter commands in this field to manipulate the panel rows.

**I(n)** Insert (n) new row(s)  
**R(n)** Repeat the current row (n times)  
**D(n)** Delete (n) row(s)  
**S(n)** Select (n) rows(s)

An asterisk (\*) in the PRC column shows that the LISTDEF in the row is selected. The S command toggles the selection of rows; unselected rows become selected and selected rows become unselected.

#### LISTDEF Name

On entry to the panel, this field is set to the value in the **LISTDEF name** field in the DB2 Utilities panel.

### Parent panels

- “DB2 Utilities panel” on page 556

### Child panels

None.

### Related tasks

- “UNLOAD utility” on page 310
- “UNLOAD (tables) with LISTDEF specified” on page 315

## **UNLOAD Utility (Tables) with LISTDEF panel**

- “Where you can use templates” on page 8

## Utility Functions panel

You use the Utility Functions panel to select the FM/DB2 utility you want to use.

### Panel and field definitions

<u>P</u> rocess	<u>O</u> ptions	<u>U</u> tilities	<u>H</u> elp
FM/DB2 (DFA2)		Utility Functions	
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	
Command ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F12=Cancel			

<b>1 Print</b>	Print DB2 table or view
<b>2 Objects</b>	Create and drop DB2 objects
<b>3 Copy</b>	Copy data within DB2
<b>4 Object List</b>	Display and process DB2 object lists
<b>5 Privileges</b>	Manage DB2 privileges
<b>6 Import</b>	Import sequential or VSAM data into DB2
<b>7 Export</b>	Export DB2 data to a sequential or VSAM data set
<b>8 Create</b>	Create DB2 test data
<b>9 Utilities</b>	DB2 utility job generation
<b>10 Audit trail</b>	Print an audit trail report
<b>11 Print browse</b>	Browse your print output

### Parent panels

- “Primary Option Menu panel” on page 670

### Child panels

To display this panel...	Use/do this
“Print Utility panel” on page 675	Option 1
“DB2 Object Functions panel” on page 550	Option 2
“Copy Utility (“From”) panel” on page 430	Option 3



## Utility Functions panel

To display this panel...	Use/do this
"Object List Utility panel" on page 663	Option 4
"Manage DB2 Privileges panel" on page 661	Option 5
"Import Utility ("From") panel" on page 639	Option 6
"Export Utility panel" on page 612	Option 7
"Data Create Utility panel" on page 533	Option 8
"DB2 Utilities panel" on page 556	Option 9
"Print Audit Trail panel" on page 671	Option 10

## Related tasks

- "Printing the contents of a DB2 table" on page 263
- Chapter 5, "Creating and dropping DB2 objects," on page 165
- "Copying data from one DB2 object to another" on page 195
- Chapter 8, "Working with lists of DB2 objects," on page 243
- Chapter 10, "Managing DB2 privileges," on page 273
- "Copying data from a VSAM or QSAM file" on page 200
- "Copying data to a VSAM or QSAM file" on page 223
- Chapter 6, "Populating a DB2 table with data," on page 193
- Chapter 11, "Generating batch JCL for DB2 utility jobs," on page 281
- "Printing an audit trail report" on page 269
- "Looking at the print output from your FM/DB2 session" on page 268
- "Working with object list panels" on page 246
- "Using the line command area (Cmd)" on page 251

---

## Value List Edit panel

This panel allows you to to create and edit value lists to be used in field scrambling.

Panel and field definitions

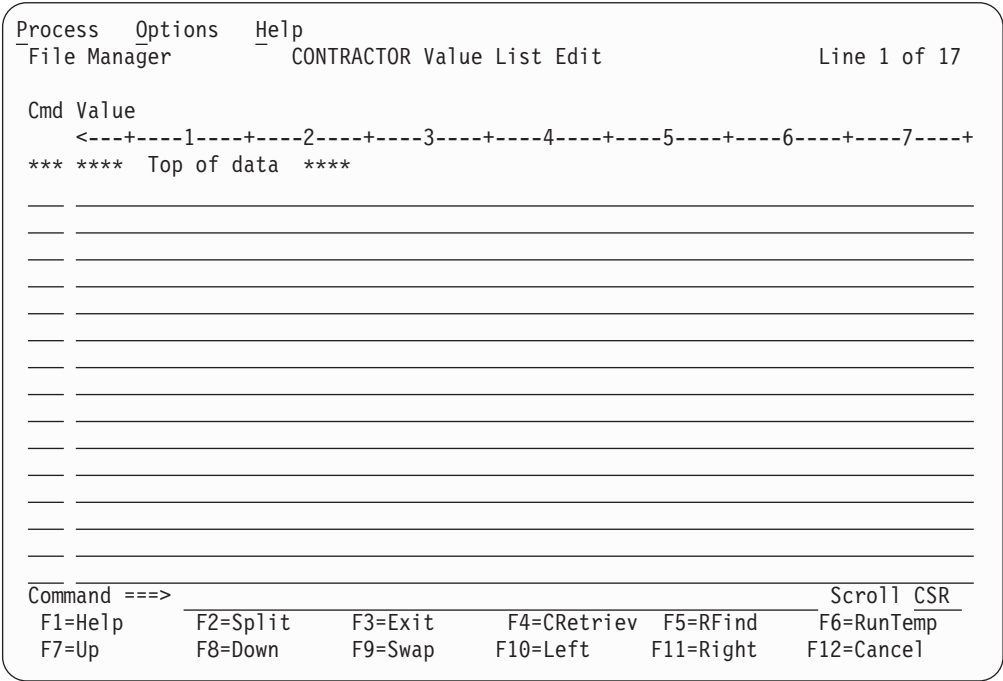


Figure 124. Value List Edit panel

- Cmd** Prefix command field. Allows you to copy, insert, move, repeat or delete lines. Available commands are:
- A** Identifies the line after which data is to be moved or copied.
  - B** Identifies the line before which data is to be moved or copied.
  - C** Copy one line.
  - Cn** Copy *n* lines.
  - CC** Copy block of lines. Marks the start and end of the block.
  - D** Delete one line.
  - Dn** Delete *n* lines.
  - DD** Delete block of lines. Marks the start and end of the block.
  - I** Insert one empty line.
  - In** Insert *n* empty lines.
  - M** Move one line.
  - Mn** Move *n* lines.
  - MM** Move block of lines. Marks the start and end of the block.
  - R** Repeat line once.
  - Rn** Repeat line *n* times.
  - RR** Repeat block of lines. Marks the start and end of the block.
  - RRn** Repeat block of lines *n* times. Marks the start and end of the block.
- Value** A value that can be used when field scrambling is in effect.

Parent panels

- “Column Attributes panel (alphanumeric)” on page 407
- “Column Attributes panel (numeric)” on page 412

Related tasks

- “Specifying and editing a value list” on page 86
- “Scrambling data” on page 234

Volumes panel

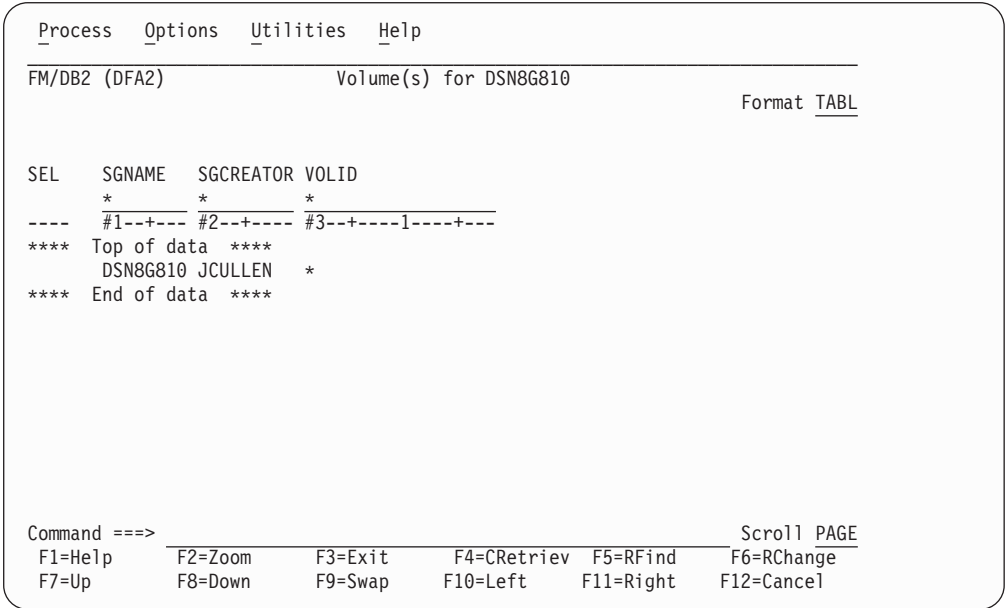


Figure 125. Volumes panel

**Note:** To view other columns on this panel, press the Right function key (F11).

For a complete list of columns, refer to “DB2 catalog tables” in the *DB2 UDB for z/OS SQL Reference* relevant to your version of DB2.

**SEL** Line command area.

For a list of the line commands you can use on this panel, see Table 20 on page 252.

Parent panels

- “Storage Group(s) panel” on page 751

Child panels

To display this panel...	Use/do this
“Display Row panel” on page 564	Line command ROW

Related tasks

- “Working with object list panels” on page 246
- “Using the line command area (Cmd)” on page 251

## Related tasks

- “Managing tables used by SQL explain” on page 358

## Volumes panel

---

## Chapter 16. FM/DB2 commands

This chapter describes the syntax and parameters for the primary commands that you can use in various FM/DB2 panels.

You enter primary commands on the command line of a panel.

Where the syntax allows you to specify more than one operand, you can use either a blank or a comma as a separator between each operand.

For example, both of the following commands are correct:

```
SORT col_num1 col_num2  
SORT col_num1,col_num2
```

---

### ABOUT primary command

The ABOUT command displays the current FM/DB2 version number and the PTF number of the File Manager DB2 component in a window. The popup also shows the copyright information and any notes from IBM that are shipped with the product.

#### Syntax

Syntax
▶▶ ABOUT ▶▶

#### Availability

Available on all panels

#### Related tasks

“Checking your FM/DB2 version” on page 13

---

### ALL primary command

Use the ALL primary command to select all columns from all, or one, of the tables you have specified on the primary Basic SELECT Prototyping panel.

Syntax		
▶▶ ALL <table border="1"><tr><td>*</td></tr><tr><td>#n</td></tr></table> ▶▶	*	#n
*		
#n		

#### Parameters

Asterisk (\*)      Selects all columns from all the specified tables.

## ALL primary command

#n	Selects all columns from the table associated with correlation name #n.
----	---

## Availability

"Basic SELECT Prototyping panel" on page 399

## Related tasks

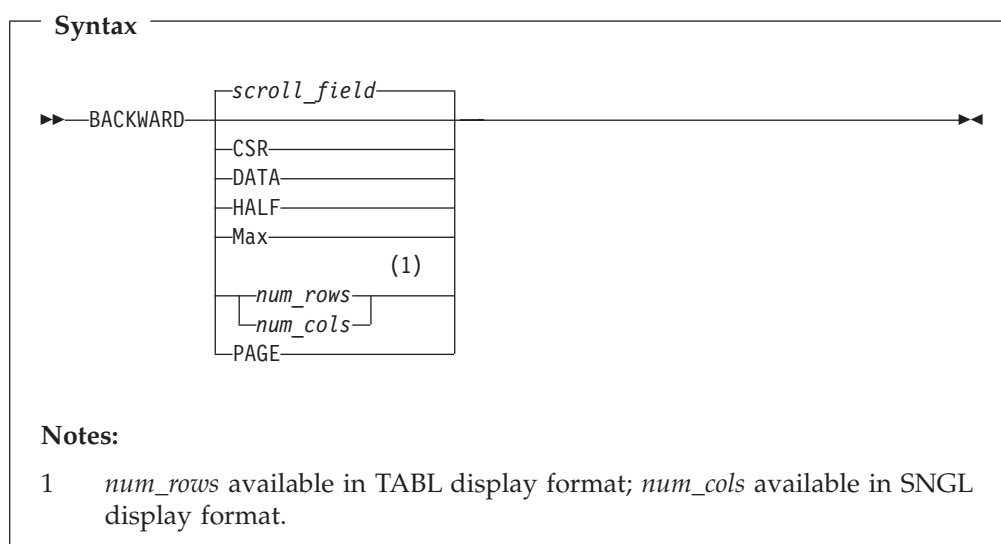
"Using basic SQL prototyping" on page 321

## BACKWARD primary command

The BACKWARD primary command scrolls backwards (up) through your data.

The amount (number of rows or columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the **Scroll** field.

## Syntax



<i>scroll_field</i>	Scroll backwards by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
---------------------	--

CSR	Scroll backwards to the cursor position.
-----	--

DATA	Scroll backwards one row (TABL) or column (SNGL) less than a page of data.
------	--

HALF	Scroll backwards half a page of data.
------	---------------------------------------

Max	Scroll to top of the table. This has the same effect as TOP command.
-----	--

<i>num_rows</i>	Scroll backwards <i>num_rows</i> rows. Valid range: 1–9999. Available in TABL display format.
-----------------	---

<i>num_cols</i>	Scroll backwards <i>num_cols</i> columns. Valid range: 1-9999. Available in SNGL display format.
-----------------	--

PAGE      Scroll backwards one page of data.

**Availability**

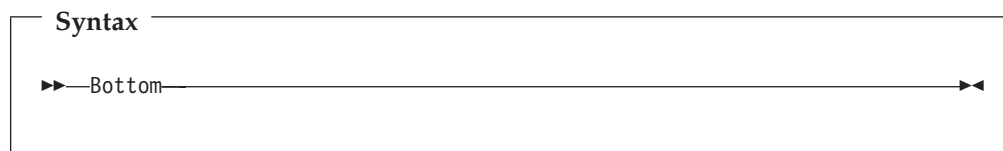
- “Table Browse panel” on page 758
- “Table Edit panel” on page 761

**Related tasks**

- Chapter 4, “Viewing and changing DB2 data,” on page 95

**BOTTOM primary command**

The BOTTOM primary command scrolls to the last page of data.

**Syntax****Availability**

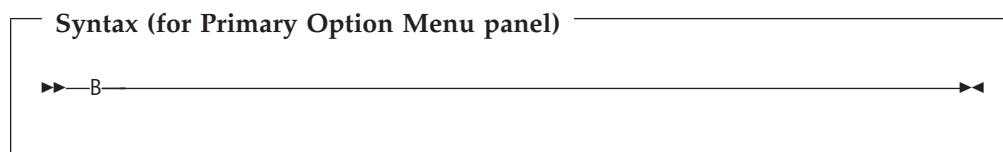
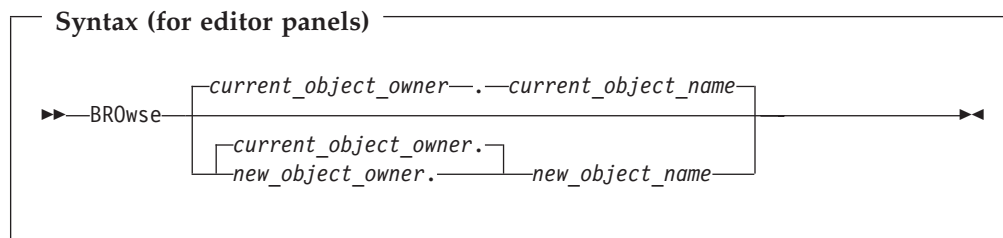
- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

**Related tasks**

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125

**BROWSE primary command**

The BROWSE primary command starts a new FM/DB2 Browse editor session. .

**Syntax**

*current\_object\_owner*

The name of the owner of the object in the current FM/DB2 editor session.



## BROWSE primary command

*current\_object\_name*

The name of the object in the current FM/DB2 editor session.

*new\_object\_owner*

The name of the owner of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

*new\_object\_name*

The name of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Primary Option Menu panel” on page 670

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

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## CANCEL primary command

The CANCEL primary command ends the current FM/DB2 editor session without saving any changes.

In an editor session, the CANCEL primary command ends the current FM/DB2 editor session and any dependent related sessions. In Edit only, if you have made changes to your data, you are asked to confirm that you want to cancel your Edit session. Cancellation of an Edit session causes any uncommitted changes to the data (in the current or in a dependent related session) to be lost.

Note that FM/DB2 may issue DB2 commit points during an Edit session, depending on the current setting of the **Enter Key Processing** and **Commit Options** options (see “Editor Options (6 of 7) panel” on page 590). If commit points have been issued, CANCEL will only discard changes made since the last commit point.

If you have selected the Edit Commit Option **Whenever Enter is pressed**, the DB2 table is updated whenever you press Enter after having made a change. CANCEL in this situation does not reverse any changes made before the last time you pressed Enter.

QUIT is a synonym for CANCEL.

### Syntax

<p><b>Syntax</b></p> <p>►► CANCEL ◀◀</p>
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### Availability

Available on most FM/DB2 panels

## Related tasks

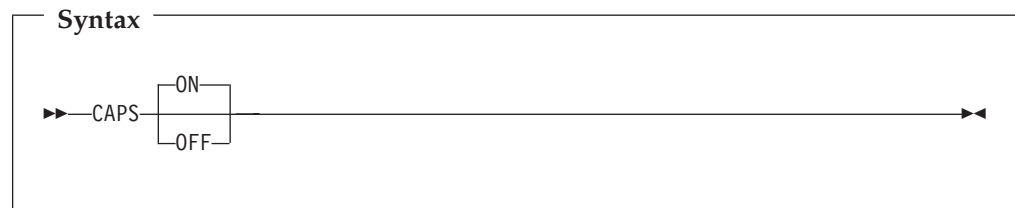
- Chapter 4, “Viewing and changing DB2 data,” on page 95
- Chapter 3, “Working with templates,” on page 55
- Chapter 12, “Working with SQL statements,” on page 321

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## CAPS primary command

The CAPS command determines whether data in the data area is to be translated to uppercase on input (CAPS ON), or whether it is to be left alone (CAPS OFF). The CAPS command overrides any previously issued CASE command. By default, lowercase data is not translated to uppercase.

## Syntax



**CAPS ON** Translates all data in rows that are changed by overtyping from lowercase to uppercase, and translates replacement data specified in the CHANGE command from lowercase to uppercase.

CAPS ON only affects rows changed after the CAPS ON command is entered.

**CAPS OFF** Does not translate changed records to uppercase.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

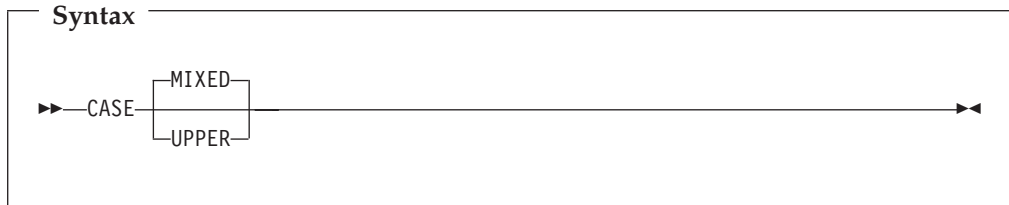
- “Installation settings that affect CAPS” on page 139
- Chapter 4, “Viewing and changing DB2 data,” on page 95

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## CASE primary command

The CASE command determines whether data in the data area is translated to uppercase on input (CASE UPPER), or whether it is left unchanged (CASE MIXED). The CASE command overrides any previously issued CAPS command. By default, lowercase data is not translated to uppercase.

### Syntax



**CASE MIXED** Does not translate changed or new rows to uppercase.

**CASE UPPER** Translates all new rows from lowercase to uppercase, and translates all data in changed rows from lowercase to uppercase, regardless of how the rows are changed.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- “Installation settings that affect CAPS” on page 139
- Chapter 4, “Viewing and changing DB2 data,” on page 95

---

## CHANGE primary command

In an FM/DB2 editor session, use the CHANGE command to locate and replace one or more occurrences of a character string or numeric value in the data being edited.

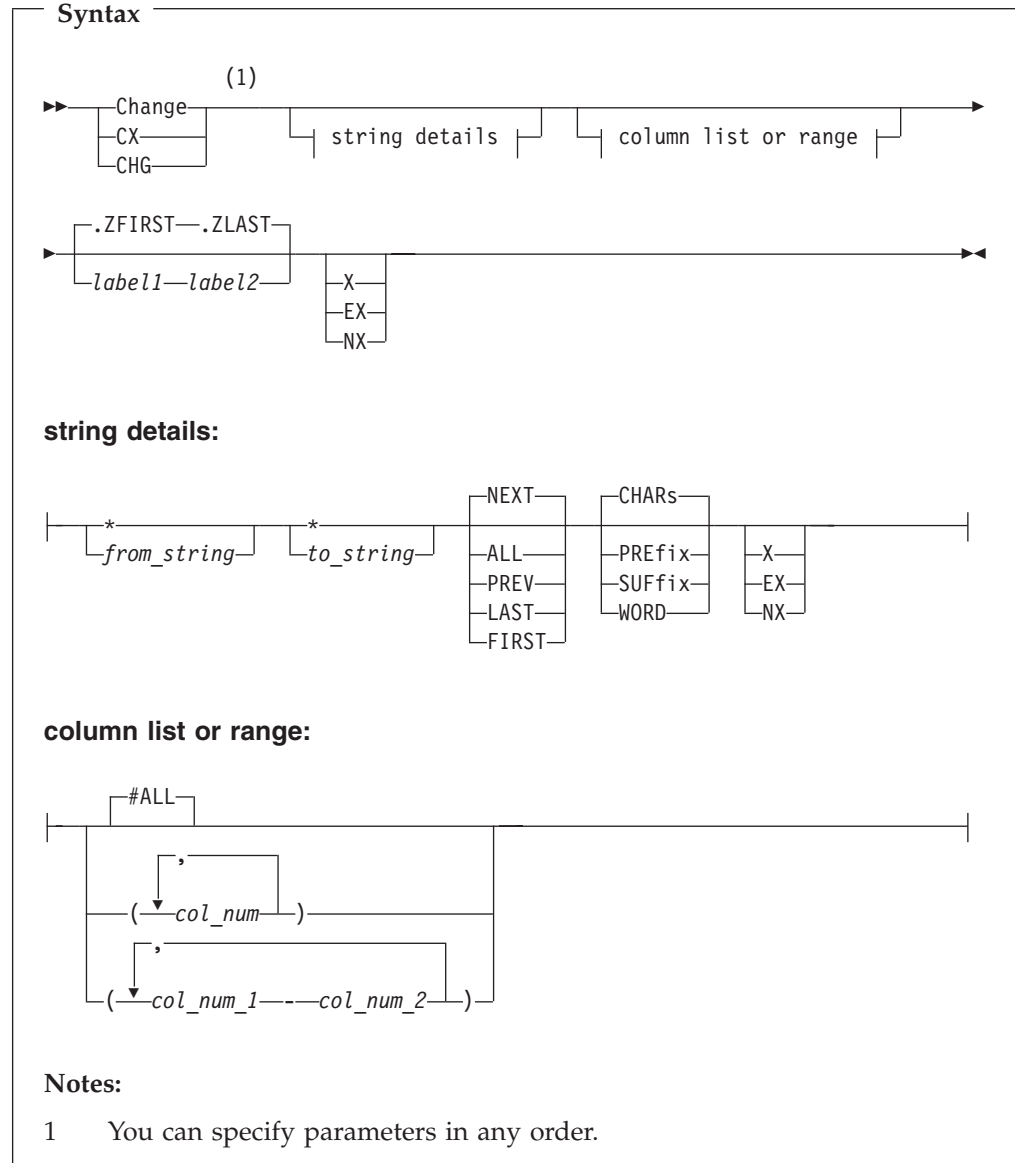
**Note:** If you limit the number of rows loaded into the FM/DB2 editor (by either specifying a row limit or a WHERE clause), the CHANGE command applies only to the data in the FM/DB2 editor session.

To find a string without changing it, use the FIND primary command.

If you have zoomed in on a row, the CHANGE command affects only that row.

If the CHANGE command changes data, FM/DB2 places the cursor at the end (when scanning forward), or start (when scanning backwards), of the changed string or numeric data type column. If necessary, FM/DB2 scrolls to bring the string into view. If the changed data is in an excluded row, the excluded row is displayed.

## Syntax



\* (asterisk) When used in place of the search string, uses the search string specified on the previous CHANGE command as the search string.

When used in place of the replacement string, uses the replacement string specified on the previous CHANGE command as the replacement string.

The position of the \* is important for CHANGE. If it is positioned before a string, it indicates the previous search argument; that is, it is treated as the first string. If a string is found prior to the \*, then it is treated as the second string (the change argument), taking the change argument from the previous CHANGE command. To use both the previous search string and the previous change string, specify CHANGE \* \*.

*from\_string* The string you want to search for. The string, which can be up to 100 characters in length, can be:

## CHANGE primary command

- A character string not starting or ending with a single quotation mark and not containing any embedded blanks or commas. The case of the string is ignored. Uppercase and lowercase representations of the same character match. For example, the following command changes the strings black, Black, and BLACK:  
CHANGE black white
- A character string enclosed in single quotation marks. The string can contain blanks and commas. The case of the string is ignored. For example, 'Exact string' matches 'exact string'.
- C followed by a character string enclosed in quotation marks (C'Frog'), or a character string enclosed in quotation marks followed by C ('Frog'C). The string can contain blanks and commas. The string must match exactly (including case). For example, C'Exact string' does not match C'exact string'.
- P preceded or followed by a picture string enclosed in single or double quotation marks to describe a type of string to be found rather than the exact characters. It can contain blanks, alphabetic and numeric characters which represent themselves, or any of the special characters listed here, each of which represents a class of characters:

=	Any character.
@	Alphabetic characters.
#	Numeric characters.
\$	Special characters.
& notsym;	Non-blank characters.
.	Invalid characters.
-	Non-numeric characters.
<	Lowercase alphabetic.
>	Uppercase alphabetic.
- X followed by a hexadecimal string enclosed in single quotation marks (X'C1C2').
- A numeric value (only when you limit the search by specifying column numbers, and only when the column being searched is a numeric column).

*to\_string*

The string you want to replace *from\_string*. The string, which can be up to 100 characters in length, can be:

- A character string not starting or ending with a single quotation mark and not containing any embedded blanks or commas. If CAPS ON or CASE UPPER is in effect, then *to\_string* is converted to uppercase.
- A character string enclosed in single quotation marks. The string can contain blanks and commas. If CAPS ON or CASE UPPER is in effect, then *to\_string* is converted to uppercase. The string can be a null string ('').
- C followed by a character string enclosed in quotation marks (C'Frog'), or a character string enclosed in quotation marks followed by C ('Frog'C). The string can contain blanks and commas. Case is respected and retained. The string can be a null string (C'').
- P preceded or followed by a picture string enclosed in single or double quotation marks to describe the change to be made. You

can change characters from uppercase to lowercase or from lowercase to uppercase, or leave the field the same using these string special characters.

= Any character.  
 < Lowercase alphabets.  
 > Uppercase alphabets.

### Examples of picture strings used with the CHANGE command:

c p'<' p'>' #3 Uppercase characters in column 3.  
 c p'>' '↯' #2 Change any uppercase to "not sign" column 2 (note: "not sign" has no special meaning in a "to" string).  
 c p'<#' p'>=' #1 Change any lowercase, any number to uppercase, the number found in column 1.

When this notation is used, numeric, bit and unicode fields (for SNGL and TABL display formats) are excluded from the search process. .

- X followed by a hexadecimal string enclosed in single quotation marks (X'C1C2'). Case is respected and retained (the hexadecimal values are used exactly as specified).
- A numeric value.

NEXT	This is the default setting. Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches ahead to find the next occurrence of the string. If the next occurrence of the string is in an excluded row and you do not limit the search to non-excluded rows, only the first excluded row containing the string is shown.
ALL	Causes the search to begin at the top of the data and find and replace all occurrences of the string. If you do not limit the search to non-excluded rows, the string is replaced in all rows (excluded and non-excluded). Any excluded rows affected by the change are redisplayed.
FIRST	Causes the search to begin at the beginning of the table and search ahead.
LAST	Causes the search to begin at the end of the table and search backwards.
PREV	Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches backwards to find the string.
CHARS	Matches the search string anywhere in the data.
PREFIX	Matches the search string wherever it appears as a prefix in the data. To be a prefix, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by an alphanumeric character.
SUFFIX	Matches the search string wherever it appears as a suffix in the data. To be a suffix, the matched text must be preceded by an

## CHANGE primary command

	alphanumeric character, and must be followed by a non-alphanumeric character or be the end of a line or field.
WORD	Matches the search string wherever it appears as a word in the data. To be a word, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by a non-alphanumeric character or be the end of a line or field.
#ALL	Each column is searched according to its template attributes.
<i>col_num</i>	The DB2 column number (specified as # <i>n</i> ) of a column to be included in the data search. Multiple column numbers must be separated by a comma or, if enclosed in brackets, separated by a blank or comma.
<i>col_num_1</i>	The first field reference of a range of fields. It cannot be subscripted. If the <i>col_num_1</i> field reference value is less than the lowest displayed field reference value, the lowest displayed field reference value is used.
<i>col_num_2</i>	<p>The last field reference of a range of fields. It cannot be subscripted. If the <i>col_num_2</i> field reference value is greater than the highest displayed field reference value, the highest displayed field reference value is used.</p> <p>The <i>col_num_1</i> and <i>col_num_2</i> field reference values must be separated by a hyphen (-). Spaces are permitted between the hyphen and the field reference values.</p> <p>If <i>col_num_1</i> is a higher value than <i>col_num_2</i>, the search process reverses the operands.</p>
<i>label1</i>	Label identifying the start of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
<i>label2</i>	Label identifying the end of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
EX	Excluded rows only.
NX	Non-excluded rows only.
X	Same as EX.

### Availability

- "Table Edit panel" on page 761

### Related tasks

- "Changing data with the CHANGE command" on page 141

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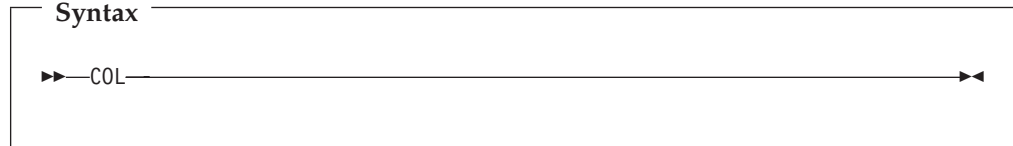
## COL primary command

When you use the SQL prototyping, execution and analysis option (4), you can use the COL primary command:

- On the Plan Table Rows panel to switch panel format to show the collection ID.

- On the Statement Table Rows panel to switch panel format to show the collection ID.

## Syntax



## Availability

Available on all panels “Plan Table Rows panel” on page 668

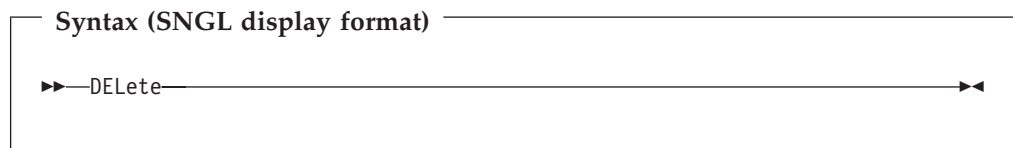
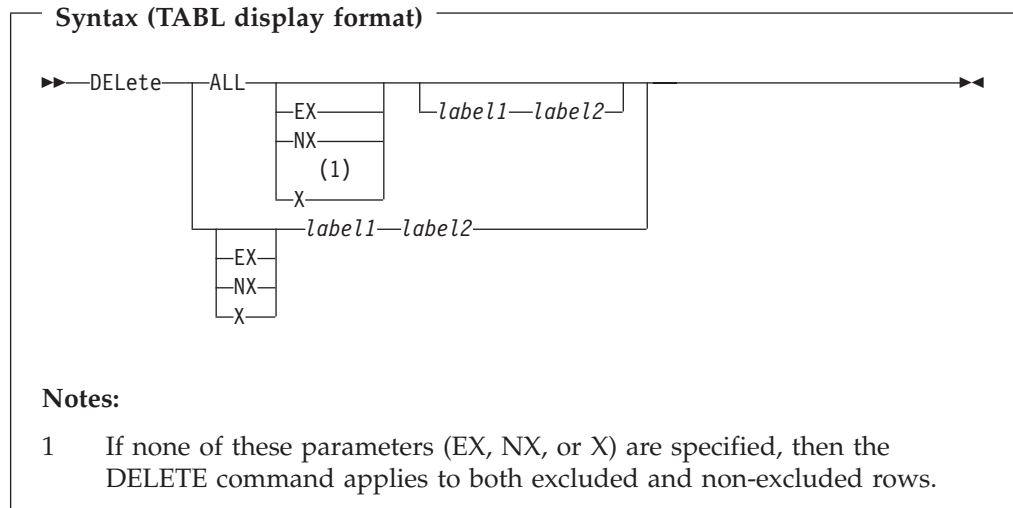
## Related tasks

Chapter 12, “Working with SQL statements,” on page 321

## DELETE primary command

The DELETE primary command deletes rows from the data being edited.

## Syntax





## DELETE primary command

ALL	Causes the DELETE command to delete all rows (or all excluded or non-excluded rows) within the specified range of rows (or within the entire table, if you do not specify a range).  If you do not specify the ALL parameter, then the DELETE command deletes only the first row (or only the first excluded or non-excluded row) within the specified range.
EX	Excluded rows only.
NX	Non-excluded rows only.
X	Same as EX.
label1	Label identifying the start of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
label2	Label identifying the end of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.

### Availability

- "Table Edit panel" on page 761

### Related tasks

- "Deleting rows" on page 149

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## DESCRIBE primary command

The DESCRIBE primary command displays the DB2 Template Description panel where you can enter the required description for the template.

### Syntax

```
Syntax
  >> DESCRIBE <<
```

### Availability

- "Column Selection/Edit panel" on page 419

### Related tasks

- "Editing a template" on page 63

---

## DESELECT primary command

In advanced SELECT prototyping, if you enter the Deselect primary command and the cursor is not currently placed on an element in the currently displayed fragment, the currently displayed fragment and its dependent fragments are removed from the syntax, and control returns to the parent of the currently displayed fragment. If the currently displayed fragment is the top fragment, this has the same effect as CANCEL or END.

If you enter the Deselect primary command with the cursor placed on a fragment field in the currently displayed fragment, the selected fragment and its dependent fragments are removed from the syntax, and control remains in the currently displayed fragment.

If the deselected fragment is the last selected (or only) item in a repeat instance, the entire instance is deleted.

Syntax



Availability

“Advanced SELECT Prototyping panel” on page 375

Related tasks

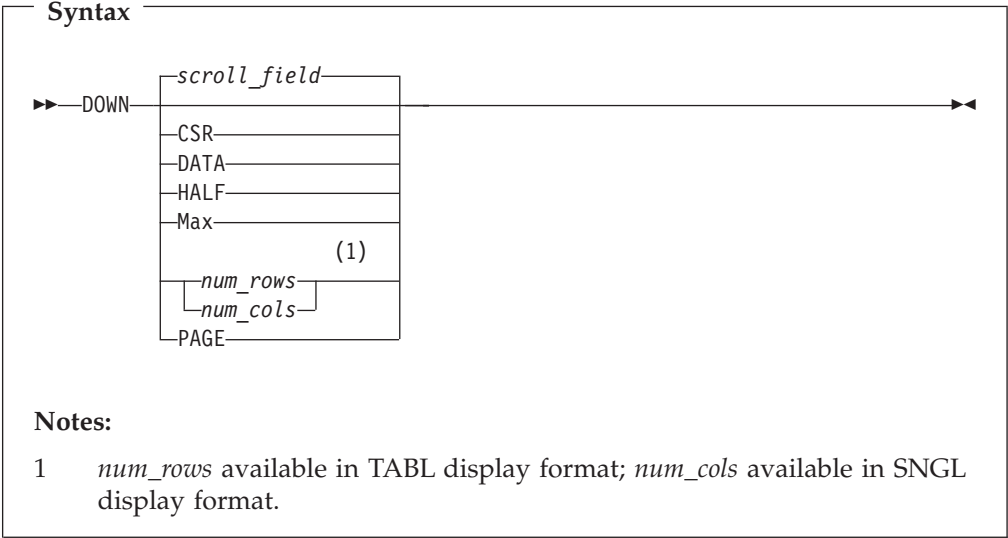
“Using advanced SQL prototyping” on page 328

DOWN primary command

The DOWN primary command scrolls down (forward) through your data.

The amount (number of rows or columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the Scroll field.

Syntax



## DOWN primary command

<i>scroll_field</i>	Scroll down by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
CSR	Scroll down to the cursor position.
DATA	Scroll down one row (TABL) or column (SNGL) less than a page of data.
HALF	Scroll down half a page of data.
Max	Scroll to bottom of table. This has the same effect as the BOTTOM command.
<i>num_rows</i>	Scroll down <i>num_rows</i> rows. Valid range: 1–9999. Available in TABL display format.
<i>num_cols</i>	Scroll down <i>num_cols</i> columns. Valid range: 1–9999. Available in SNGL display format.
PAGE	Scroll down one page of data.

## Examples

DOWN 8	Scrolls down 8 lines.
DOWN	Scrolls down the number of lines indicated by the <b>Scroll</b> field.
DOWN M	Scrolls down to the last page of data.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Enter, Execute and Explain SQL Statements panel” on page 598

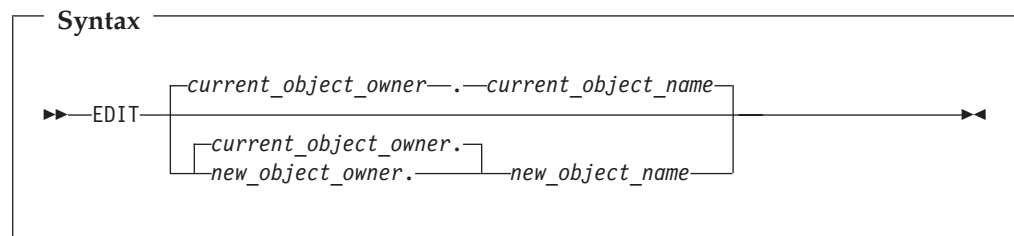
## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125
- “Entering, executing, and explaining SQL statements” on page 354

## EDIT primary command

The EDIT primary command starts a new FM/DB2 Edit editor session. .

## Syntax



*current\_object\_owner*

The name of the owner of the object in the current FM/DB2 editor session.

*current\_object\_name*

The name of the object in the current FM/DB2 editor session.

*new\_object\_owner*

The name of the owner of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

*new\_object\_name*

The name of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

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## END primary command

END is a pseudonym for FILE.

- In View or Browse, the END primary command:
  - Ends the View or Browse editor session.
- In Edit, the END primary command:
  - Saves any uncommitted changes and ends the Edit session.
  - Fails if DB2 reports errors when FM/DB2 attempts to save changes made in the Edit session, or there are dependent edit sessions of related tables.
- When you edit a template, the END primary command:
  - Displays the save panel where you can save the template as another name.

### Syntax

Syntax
<pre> ▶▶—END—◀◀           </pre>

### Availability

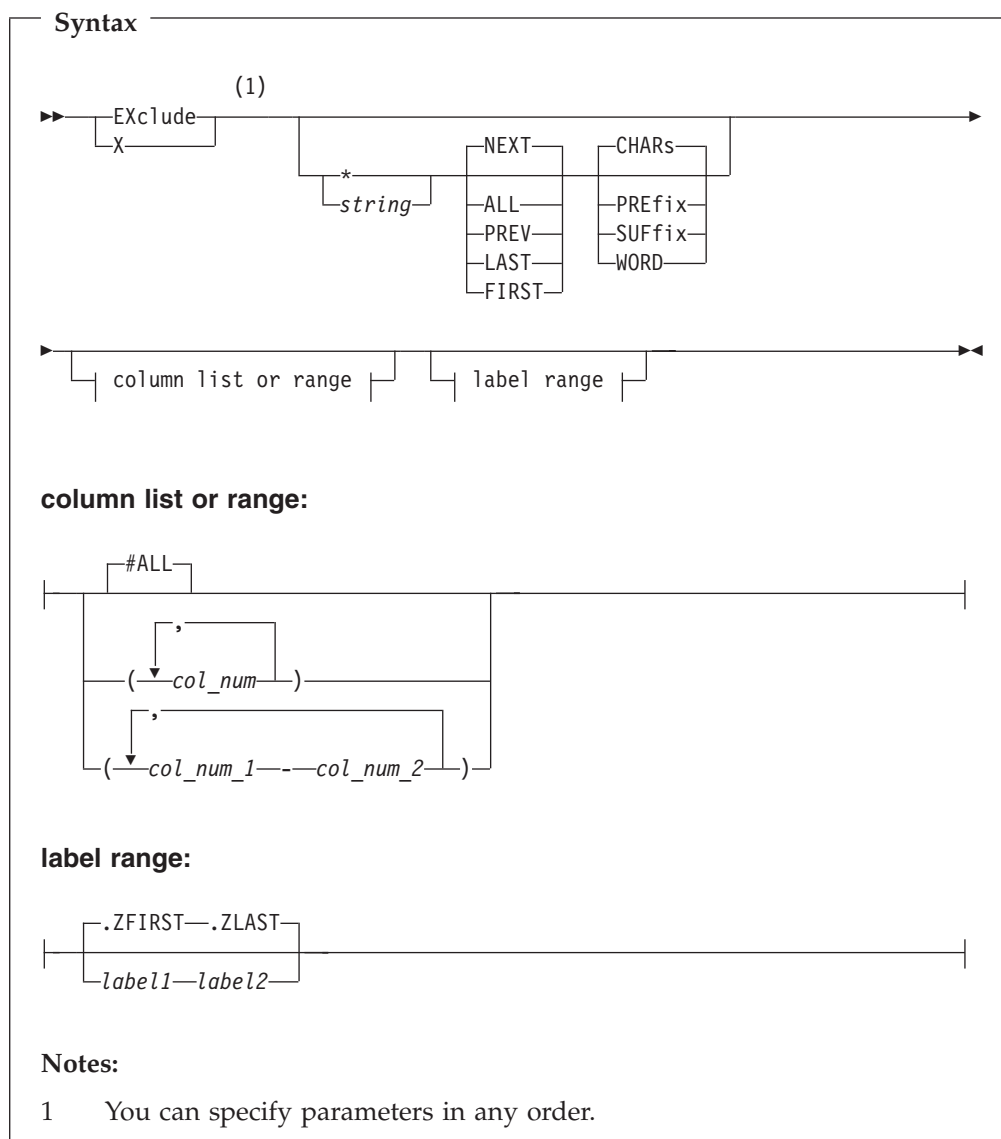
- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Column Selection/Edit panel” on page 419

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- Chapter 3, “Working with templates,” on page 55

RESET

## Syntax



- \* (asterisk) Uses the search string specified on the previous EXCLUDE command as the search string.
- string* The search string you want to search for. Rows containing this string, within the limits imposed by the other EXCLUDE command parameters, are excluded. The string can be:
- A character string not starting or ending with a single quotation mark and not containing any embedded blanks or commas. The case of the string is ignored. Uppercase and lowercase representations of the same character match. For example, "Mixed string" matches "MIXED string".
  - A character string enclosed in single quotation marks. The string can contain blanks and commas. The case of the string is ignored. For example, "Exact string" matches "exact string".
  - C followed by a character string enclosed in quotation marks (C'Frog'), or a character string enclosed in quotation marks followed by C ('Frog'C). The string can contain blanks and commas. The string must match exactly (including case). For example, "Exact string" does not match "exact string".
  - P preceded or followed by a picture string enclosed in single or double quotation marks to describe a type of string to be found rather than the exact characters. It can contain blanks, alphabetic and numeric characters which represent themselves, or any of the special characters listed here, each of which represents a class of characters:
 

=	Any character.
@	Alphabetic characters.
#	Numeric characters.
\$	Special characters.
& notsym;	Non-blank characters.
.	Invalid characters.
-	Non-numeric characters.
<	Lowercase alphabetic.
>	Uppercase alphabetic.

**Examples of picture strings used with the EXCLUDE command:**

- |             |  |
|-------------|--|
| ex p'.' #4  | Exclude invalid character in column 4.           |
| ex p'###'   | Exclude 3-digit number.                          |
| ex '@1'p #1 | Exclude label a1,b1,c1, (and so on) in column 1. |
| ex p'<'     | Exclude the next lowercase alphabetic character. |
| ex p'¬' #2  | Exclude the next non-blank in column 2.          |

When this notation is used, numeric, bit and unicode fields (for SNGL and TABL display formats) are excluded from the search process.

- X followed by a hexadecimal string enclosed in single quotation marks For example, X'C1C2'.

## EXCLUDE primary command

- A numeric value (only when you limit the search by specifying column numbers, and only when the column being searched is a numeric column).

NEXT	This is the default setting. Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches ahead to find the next occurrence of <i>string</i> in a row that is not already excluded.
ALL	Causes the search to begin at the top of the data and find all occurrences of <i>string</i> . If not specified, the search begins at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches ahead to find the next occurrence of <i>string</i> in a row that is not already excluded.  The command EXCLUDE ALL excludes all displayed rows.
FIRST	Causes the search to begin at the beginning of the table and search ahead.
LAST	Causes the search to begin at the end of the table and search backwards.
PREV	Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches backwards to find the string.
CHARS	Matches the search string anywhere in the data.
PREFIX	Matches the search string wherever it appears as a prefix in the data. To be a prefix, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by an alphanumeric character.
SUFFIX	Matches the search string wherever it appears as a suffix in the data. To be a suffix, the matched text must be preceded by an alphanumeric character, and must be followed by a non-alphanumeric character or be the end of a line or field.
WORD	Matches the search string wherever it appears as a word in the data. To be a word, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by a non-alphanumeric character or be the end of a line or field.
#ALL	Each column is searched according to its template attributes.
<i>col_num</i>	The DB2 column number (specified as # <i>n</i> ) of a column to be included in the data search. Multiple column numbers must be separated by a comma or, if enclosed in brackets, separated by a blank or comma.
<i>col_num_1</i>	The first field reference of a range of fields. It cannot be subscripted. If the <i>col_num_1</i> field reference value is less than the lowest displayed field reference value, the lowest displayed field reference value is used.
<i>col_num_2</i>	The last field reference of a range of fields. It cannot be subscripted. If the <i>col_num_2</i> field reference value is greater than the highest displayed field reference value, the highest displayed field reference value is used.

The *col\_num\_1* and *col\_num\_2* field reference values must be separated by a hyphen (-). Spaces are permitted between the hyphen and the field reference values.

If *col\_num\_1* is a higher value than *col\_num\_2*, the search process reverses the operands.

*label1* Label identifying the start of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter “Z” indicate an editor-assigned label.

*label2* Label identifying the end of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter “Z” indicate an editor-assigned label.

## Availability

- “Table Browse panel” on page 758
- “Table View panel” on page 770
- “Table Edit panel” on page 761

## Related tasks

- “Excluding rows” on page 127

**EXECUTE** primary command

You use the EXECUTE primary when you are working with SQL statements.

For basic SELECT prototyping, the EXECUTE command executes the SELECT statement.

**Note:** Before you use the EXECUTE primary command, you must have selected at least one column.

For advanced SELECT prototyping, the EXECUTE primary command executes the prototyped command if it is syntactically complete. FM/DB2 displays a result table similar to the Select Statement Browse panel.

When you use the Enter, Execute and Explain SQL Statements panel, the EXECUTE primary command executes the SQL statements in the statement entry area. The EXECUTE primary command is executed by default when you press Enter and the command line is blank.

## Syntax

**Syntax**

►► EXECUTE ◄◄

## Availability

- “Basic SELECT Prototyping panel” on page 399
- “Advanced SELECT Prototyping panel” on page 375



## EXECUTE primary command

- “Enter, Execute and Explain SQL Statements panel” on page 598

### Related tasks

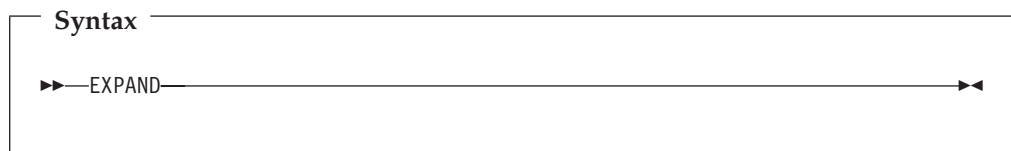
- “Using basic SQL prototyping” on page 321
- “Using advanced SQL prototyping” on page 328
- “Entering, executing, and explaining SQL statements” on page 354

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## EXPAND primary command

The EXPAND primary command displays a panel for inputting or editing long row selection criteria. You use this command from the Column Selection/Edit panel (you must position the cursor on the **Row Selection Criteria** input field).

### Syntax



### Availability

- “Column Selection/Edit panel” on page 419

### Related tasks

- “Selecting rows” on page 64

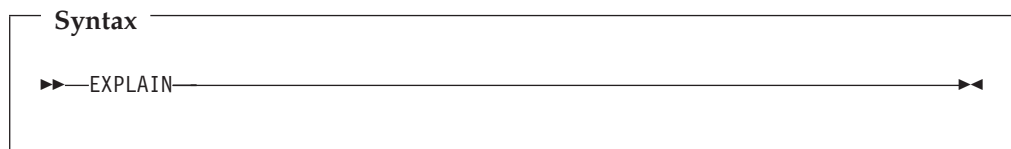
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## EXPLAIN primary command

The EXPLAIN primary command explains the SQL statements in the statement entry area. FM/DB2 builds an SQL EXPLAIN statement using the contents of the statement entry area to build the FOR clause. If applicable, FM/DB2 also builds a SET QUERYNO clause using the contents of the **Query number** option or a generated value.

When you use the EXPLAIN primary command, FM/DB2 shows the information obtained by the generated SQL EXPLAIN statement in the Plan Table Rows panel.

### Syntax



### Availability

- “Enter, Execute and Explain SQL Statements panel” on page 598

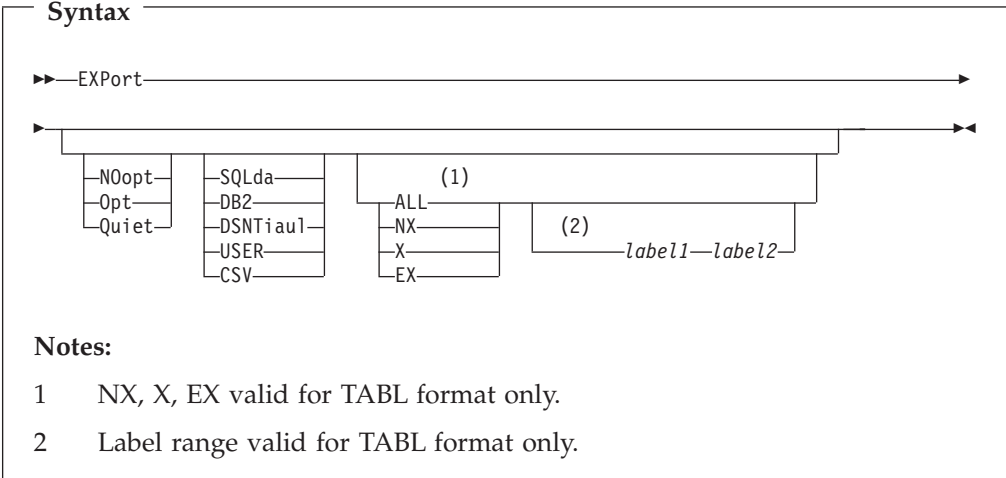
### Related tasks

- “Entering, executing, and explaining SQL statements” on page 354

## EXPORT primary command

The EXPORT primary command starts a dialog that allows either the result table currently shown in the FM/DB2 editor session, or rows in the current FM/DB2 editor session, to be exported to a data set.

### Syntax



**NOOPT** Overrides the current setting for the **Show export options** option on the Editor Options (4 of 7) panel. The Export Options panel is not displayed.

The data format for the export is determined as follows: The current value for the export data format is used, unless a data format parameter is specified in the EXPORT command. In the latter case, the parameter specified in the EXPORT command overrides the current export data format value.

**OPT** Overrides the current setting for the **Show export options** option on the Editor Options (4 of 7) panel. The Export Options panel is displayed.

**QUIET** Overrides the current setting for the **Show export options** option on the Editor Options (4 of 7) panel. The Export Options panel is not displayed. This option also suppresses the display of the Export "To" panel. The current values specified on the Export "To" panel are used to process the EXPORT command.

**SQLDA** Data is exported in FM/DB2 internal (SQLDA) format. This is equivalent to specifying 1 for the **Data Format** option on the Export Options (1 of 3) panel.

**DB2** Data is exported in DB2 unload format. This is equivalent to specifying 2 for the **Data Format** option on the Export Options (1 of 3) panel.

**DSNTIAUL** Data is exported in same format as that used by the DSNTIAUL sample program. This is equivalent to specifying 3 for the **Data Format** option on the Export Options (1 of 3) panel.

## EXPORT primary command

USER	Data is exported in a user-defined data format. This is equivalent to specifying 4 for the <b>Data Format</b> option on the Export Options (1 of 3) panel.
CSV	Data is exported in a comma-separated variables (delimited) format. This is equivalent to specifying 5 for the <b>Data Format</b> option on the Export Options (1 of 3) panel.
ALL	Copies all rows in the current FM/DB2 editor session to the target data set.
NX	Copies all non-excluded rows in the current FM/DB2 editor session to the target data set.
X	Copies all excluded rows in the current FM/DB2 editor session to the target data set.
EX	Same as X.
<i>label1</i>	Label identifying the start of a range of rows to be processed. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
<i>label2</i>	Label identifying the end of a range of rows to be processed. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.

### Availability

- "Table Browse panel" on page 758
- "Table Edit panel" on page 761
- "Table View panel" on page 770

### Related tasks

- "Excluding rows" on page 127

---

## FILE primary command

FILE is a pseudonym for END.

- In View or Browse, the FILE primary command:
  - Ends the View or Browse session.
- In Edit, the FILE primary command:
  - Saves any uncommitted changes and ends the Edit session.
  - Fails if DB2 reports errors when FM/DB2 attempts to save changes made in the Edit session, or there are dependent edit sessions of related tables.
- When you edit a template, the FILE primary command:
  - Displays the save panel where you can save the template as another name.

### Syntax

Syntax	
►►FILE◄◄	

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Column Selection/Edit panel” on page 419

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- Chapter 3, “Working with templates,” on page 55

---

## FIND primary command

The FIND primary command searches the data for a character string or a numeric field with a particular numeric value.

In an FM/DB2 editor session, or the Object List utility:

- If the string or numeric value is found, then the FIND command positions the cursor at the beginning of the string or numeric field and, if necessary, automatically scrolls the found data into view.
- The FIND command highlights all occurrences of the search string or numeric value (even when you specify FIRST, LAST, PREV, NEXT, EX, NX, or X). To turn off the highlighting, enter the RESET FIND command.

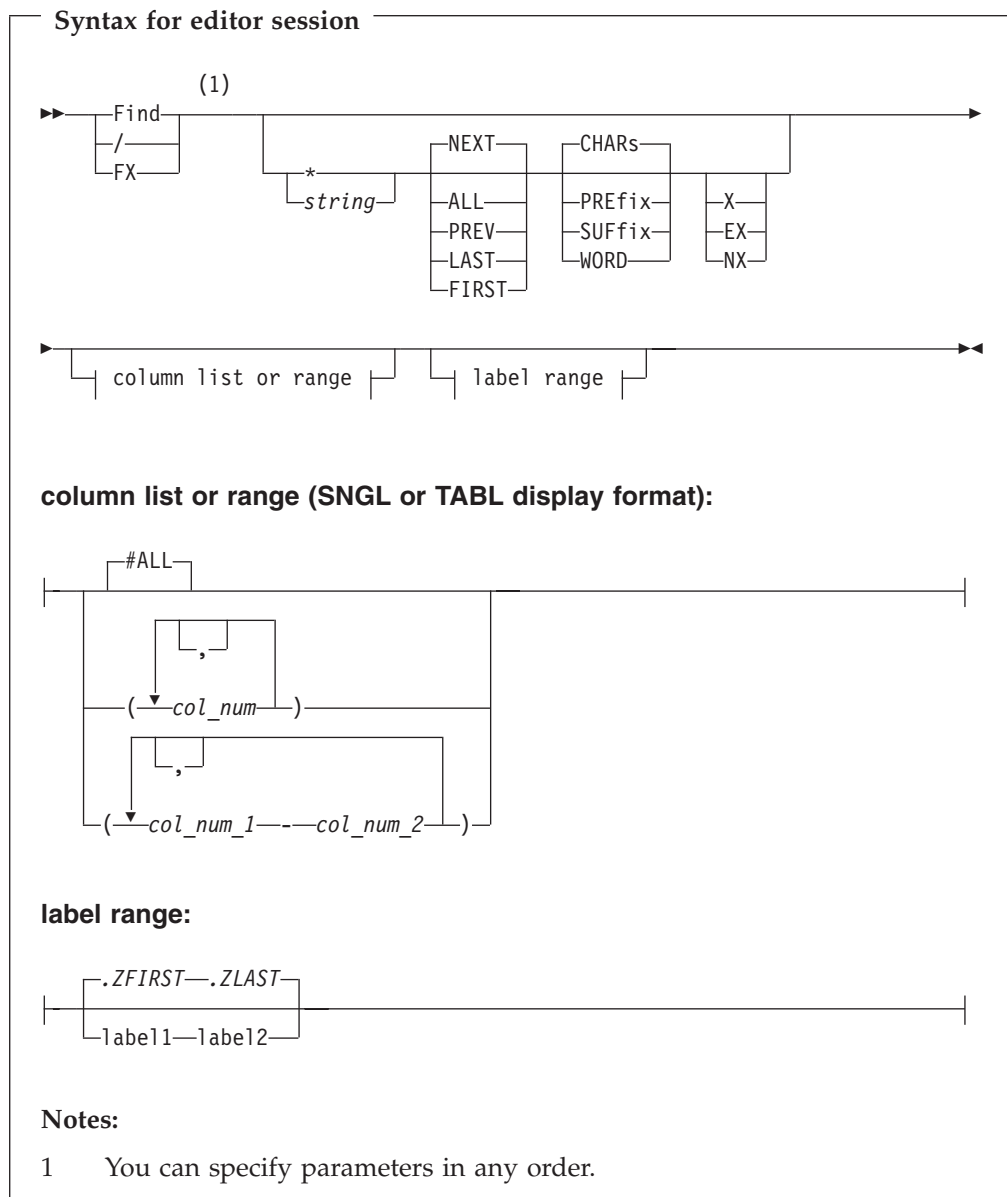
In Print Browse:

- If the character string is found, the record containing the string is displayed at the top position.

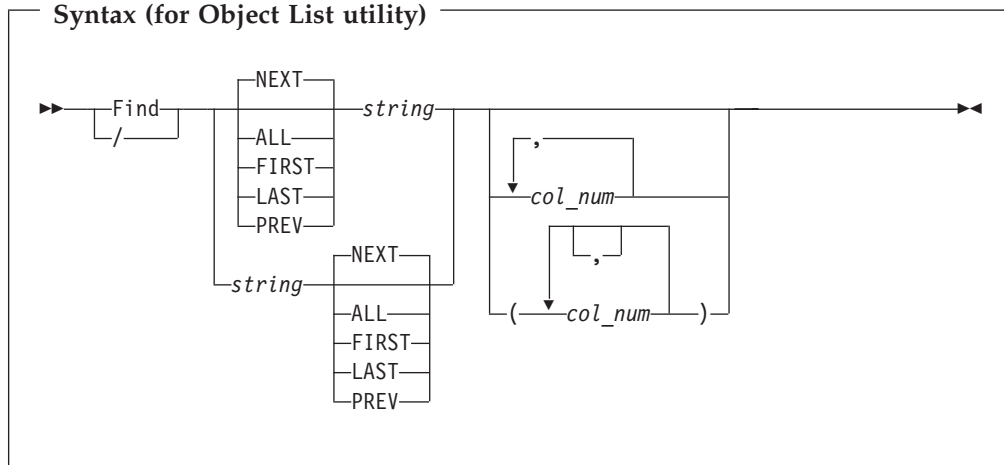
To find the next occurrence of the same string, press the RFind function key (F5), enter FIND \*, or enter the FIND command with no parameters. A message is displayed if the string cannot be found.

**Note:** FIND \* does *not* repeat the previous FIND command with the same parameters. FIND \* repeats the previous FIND command with the same string argument, but all other parameters revert to their default values unless specified.

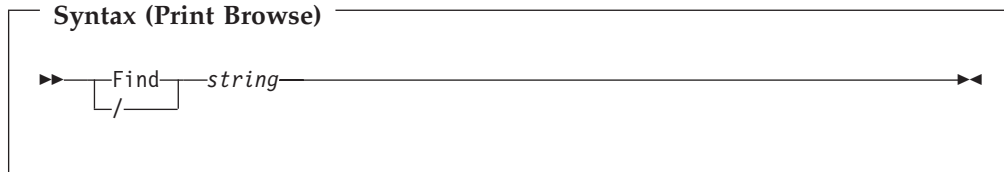
## Syntax



### Syntax (for Object List utility)



### Syntax (Print Browse)



\* (asterisk)

Uses the search string specified on the previous FIND command as the search string.

*string*

The string you want to search for. The string, that can be up to 100 characters in length, can be:

- A character string not starting or ending with a single quotation mark and not containing any embedded blanks or commas. The case of the string is ignored. Uppercase and lowercase representations of the same character match. For example, the following command finds the strings black, Black, and BLACK:  
`FIND black`
- A character string enclosed in single quotation marks. The string can contain blanks and commas. The case of the string is ignored. For example, 'Exact string' matches 'exact string'.
- C followed by a character string enclosed in quotation marks (C'Frog'), or a character string enclosed in quotation marks followed by C ('Frog'C). The string can contain blanks and commas. The string must match exactly (including case). For example, C'Exact string' does not match C'exact string'.
- P preceded or followed by a picture string enclosed in single or double quotation marks to describe a type of string to be found rather than the exact characters. It can contain blanks, alphabetic and numeric characters which represent themselves, or any of the special characters listed here, each of which represents a class of characters:

=	Any character.
@	Alphabetic characters.
#	Numeric characters.
\$	Special characters.
& notsym;	Non-blank characters.

## FIND primary command

.	Invalid characters.
-	Non-numeric characters.
<	Lowercase alphabets.
>	Uppercase alphabets.

### Examples of picture strings used with the FIND command:

find p'.' #3	Find invalid character in columns 3.
find p'###'	Find 3 digit number (for example, 101 but not 99).
find '@1'p #1	Find label a1,b1,c1, (and so on) in column 1.
find p'<'	Find lowercase alphabetic character.
find p'¬' #2	Find non-blank character in column 2.

When this notation is used, numeric, bit and unicode fields (for SNGL and TABL display formats) are excluded from the search process.

- X followed by a hexadecimal string enclosed in single quotation marks. For example, X'C1C2'.
- (FM/DB2 editor session only.) A numeric value (only when you limit the search by specifying column numbers, and only when the column being searched is a numeric column).

NEXT	This is the default setting. Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches ahead to find the next occurrence of <i>string</i> .
ALL	Causes the search to begin at the top of the data and find all occurrences of the string.  <b>Note:</b> Not-selected rows that are hidden from display or represented by shadow lines are not processed by the FIND command, even when the ALL parameter is specified.
FIRST	Causes the search to begin at the beginning of the table and search ahead.
LAST	Causes the search to begin at the end of the table and search backwards.
PREV	Causes the search to begin at the cursor location (if the cursor is within the data portion of the display) or the beginning of the first row displayed, and searches backwards to find the string.
CHARS	Matches the search string anywhere in the data.
PREFIX	Matches the search string wherever it appears as a prefix in the data. To be a prefix, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by an alphanumeric character.
SUFFIX	Matches the search string wherever it appears as a suffix in the data. To be a suffix, the matched text must be preceded by an

	alphanumeric character, and must be followed by a non-alphanumeric character or be the end of a line or field.
WORD	Matches the search string wherever it appears as a word in the data. To be a word, the matched text must be preceded by a non-alphanumeric character or be the start of a line or field, and must be followed by a non-alphanumeric character or be the end of a line or field.
#ALL	Each column is searched according to its template attributes.
col_num	The DB2 column number (specified as # <i>n</i> ) of a column to be included in the data search. Multiple column numbers must be separated by a comma or, if enclosed in brackets, separated by a blank or comma.
col_num_1	The first field reference of a range of fields. It cannot be subscripted. If the <i>col_num_1</i> field reference value is less than the lowest displayed field reference value, the lowest displayed field reference value is used.
col_num_2	The last field reference of a range of fields. It cannot be subscripted. If the <i>col_num_2</i> field reference value is greater than the highest displayed field reference value, the highest displayed field reference value is used.  The <i>col_num_1</i> and <i>col_num_2</i> field reference values must be separated by a hyphen (-). Spaces are permitted between the hyphen and the field reference values.  If <i>col_num_1</i> is a higher value than <i>col_num_2</i> , the search process reverses the operands.
label1	(FM/DB2 editor session only.) Label identifying the start of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
label2	(FM/DB2 editor session only.) Label identifying the end of a range of rows. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label.
EX	Excluded rows only.
NX	Non-excluded rows only.
X	Same as EX.

## Availability

- "Table Browse panel" on page 758
- "Table Edit panel" on page 761
- "Table View panel" on page 770
- Any Print Browse display panel
- "Collections panel" on page 405
- "Columns panel" on page 423
- "Databases panel" on page 538
- "Database Request Modules panel" on page 536
- "Distinct Types panel" on page 565
- "Functions panel" on page 632
- "Indexes panel" on page 645
- "Application Packages panel" on page 395



## FIND primary command

- “Application Plans panel” on page 397
- “Schemas panel” on page 721
- “Stored Procedures panel” on page 754
- “Synonyms panel” on page 756
- “Tables, Views and Aliases panel” on page 776
- “Table Spaces panel” on page 768
- “Triggers panel” on page 785
- “Storage Group(s) panel” on page 751

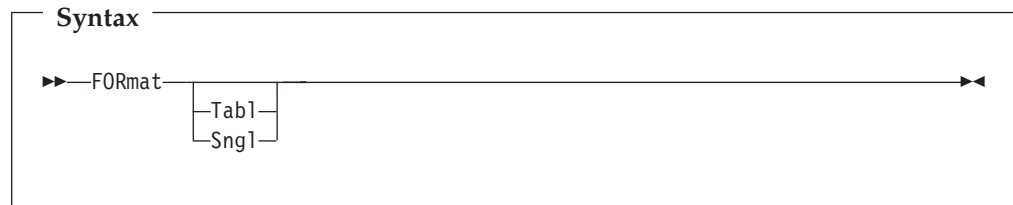
## Related tasks

- “Viewing data in an FM/DB2 editor session” on page 109
- “Looking at the print output from your FM/DB2 session” on page 268
- “Finding a string in a list of DB2 objects” on page 251
- “Locating a row or column in a list of DB2 objects” on page 251

## FORMAT primary command

The **FORMAT** primary command toggles between tabular display format (**TABL**) and single-row display format (**SNGL**). It has the same effect as changing the **Format** field (in the upper right corner of the panel).

## Syntax



Tabl	In SNGL display format, changes to TABL display format and positions the current row at the top of the panel. This parameter is optional.
------	---

Sngl	In TABL display format, changes to SNGL display format and displays the row previously shown at the top of the panel. This parameter is optional.
------	---

**Notes:**

1. You can also use the FS and FT primary commands to toggle between TABL and SNGL display formats.
2. In View and Edit, when in TABL display format, you can use the FS *prefix* command against a row to change to SNGL display format and display that row.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

## FORWARD primary command

The FORWARD primary command scrolls forward (down) through your data.

The amount (number of rows or columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the **Scroll** field.

### Syntax

Syntax

▶▶ FORWARD

scroll\_field

CSR

DATA

HALF

Max

(1)

num\_rows

num\_cols

PAGE

◀◀

Notes:

1 num\_rows available in TABL display format; num\_cols available in SNGL display format.

<i>scroll_field</i>	Scroll forward by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
CSR	Scroll forward to the cursor position.
DATA	Scroll forward one row (TABL) or column (SNGL) less than a page of data.
HALF	Scroll forward half a page of data.
Max	Scroll to bottom of table. This has the same effect as the BOTTOM command.
<i>num_rows</i>	Scroll forward <i>num_rows</i> rows. Valid range: 1–9999. Available in TABL display format.
<i>num_cols</i>	Scroll forward <i>num_cols</i> columns. Valid range: 1–9999. Available in SNGL display format.
PAGE	Scroll forward one page of data.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

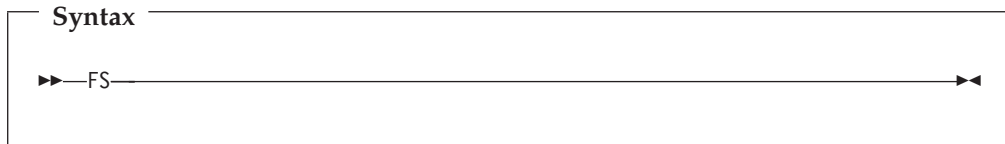
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### FS primary command

In TABL display format, you can use the FS primary command to change to SNGL display format. The row currently displayed at the top of the panel in TABL display format is shown in SNGL display format.

The FS primary command has the same effect as changing the **Format** field (in the upper right corner of the panel) from “TABL” to “SNGL”.

#### Syntax



#### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

#### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

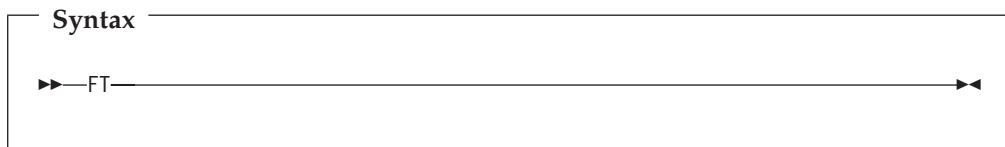
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### FT primary command

In SNGL display format, you can use the FT primary command to change to TABL display format. The row currently displayed in SNGL display format is shown at the top of the panel in TABL display format.

The FT primary command has the same effect as changing the **Format** field (in the upper right corner of the panel) from “SNGL” to “TABL”.

#### Syntax



#### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

#### Related tasks

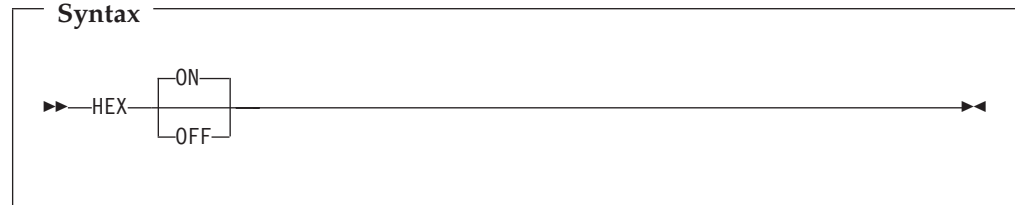
- Chapter 4, “Viewing and changing DB2 data,” on page 95

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### HEX primary command

The HEX primary command sets or resets the hexadecimal display format.

## Syntax



(no parameter)

Toggles the correct hexadecimal-display status. That is, it turns hexadecimal display ON if currently OFF, and turns hexadecimal display OFF if currently ON.

OFF

Display the data in character format.

ON

Display the hexadecimal representation of the data vertically (three lines for each byte).

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

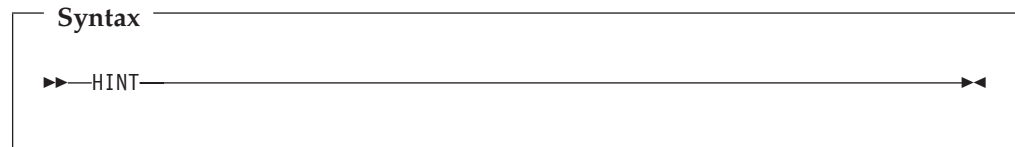
- “Displaying data in hexadecimal format” on page 129

## HINT primary command

When you use the SQL prototyping, execution and analysis option (4), you can use the HINT primary command:

- On the Plan Table Rows panel to switch panel format to show hint IDs and hints used
- On the Statement Table Rows panel to switch panel format to show hint IDs and hints used

## Syntax



## Availability

- “Plan Table Rows panel” on page 668
- “Statement Table Rows panel” on page 750

## Related tasks

Chapter 12, “Working with SQL statements,” on page 321

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### INDEXINF primary command

The INDEXINF primary command shows or hides index information about each column when displayed in SNGL display format.

In SNGL display format, FM/DB2 displays an additional column (to the left of the column containing the column name) showing information about primary keys, foreign keys, unique indexes. (If you enter the INDEXINF primary command in TABL display format, the display is unaltered. However, if you change to SNGL display format, the display status of the additional column is reversed.)

If the index information is already displayed, the INDEXINF primary command removes it from display.

#### Notes:

1. Information about primary keys, foreign keys, and unique indexes is only shown for tables (but not for views).
2. Foreign key information can only be displayed if the **Retrieve foreign key information when building templates** option is selected when the template is created.
3. The INDEXINF primary command has the same effect as selecting (or deselecting) the **Show keys, indexes** option.

### Syntax

<b>Syntax</b>
▶▶—INDEXINF—▶▶

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

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### INSRPT primary command

Insert repeat. In advanced SELECT prototyping, if the cursor is positioned on a repeatable item, FM/DB2 creates a new repeat instance and selects the element on which the cursor was placed.

### Syntax

<b>Syntax</b>
▶▶—INSRPT—▶▶

Availability

“Advanced SELECT Prototyping panel” on page 375

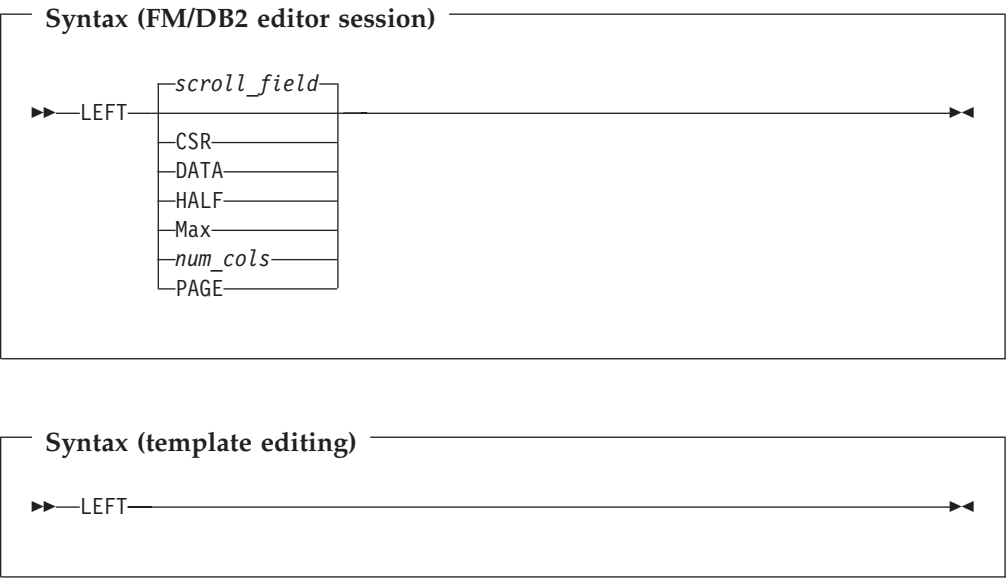
Related tasks

“Using advanced SQL prototyping” on page 328

LEFT primary command

- In View or Edit:  
In TABL display format, the LEFT primary command scrolls to the left of your data. (You cannot use LEFT in SNGL display format.)  
The amount (number of panel columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the **Scroll** field.
- When editing a template:  
When you are editing a template, the LEFT primary command:
  - Scrolls the **Row Selection Criteria** field on the Column Selection/Edit panel (the cursor must be positioned on the field at the time you issue the LEFT primary command)
  - Toggles the display (on an 80-character screen) on the Row Selection Criteria panel between the **Column name** and **Data type(length)** details appearing (the cursor must not be positioned on a **Value** field at the time you issue the LEFT primary command)

Syntax



<i>scroll_field</i>	Scroll left by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
CSR	Scroll left to the cursor position.
DATA	Scroll left one panel column less than a page of data.
HALF	Scroll left half a page of data.
Max	Scroll to the beginning of the row.

## LEFT primary command

<i>num_cols</i>	Scroll left <i>num_cols</i> panel columns. Valid range: 1–9999.
PAGE	Scroll left one page of data.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Column Selection/Edit panel” on page 419
- “Row Selection Criteria panel” on page 710

## Related tasks

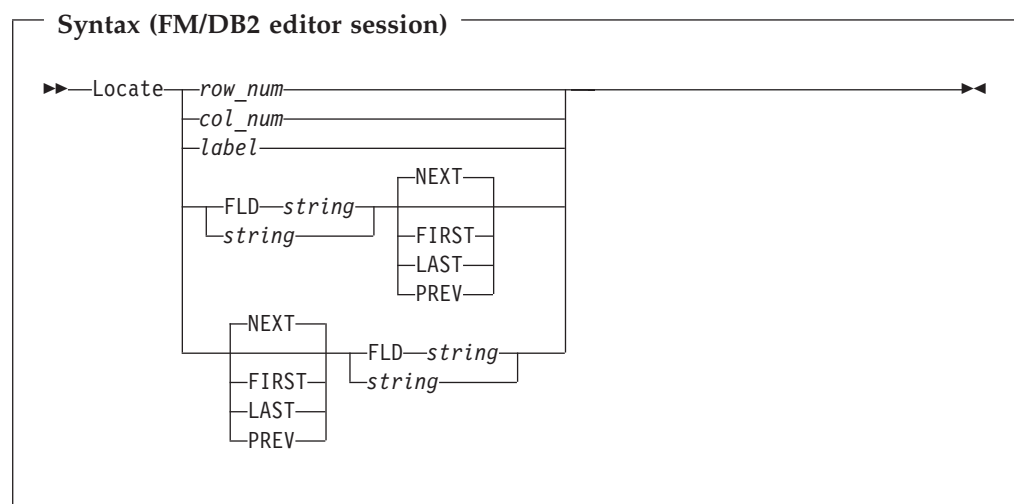
- “Scrolling” on page 125
- “Scrolling the Row Selection Criteria field” on page 70
- “Toggling the display (80-character screens only)” on page 67

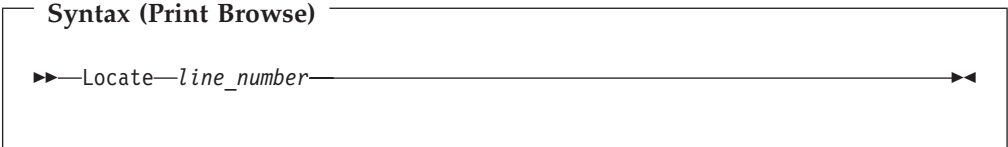
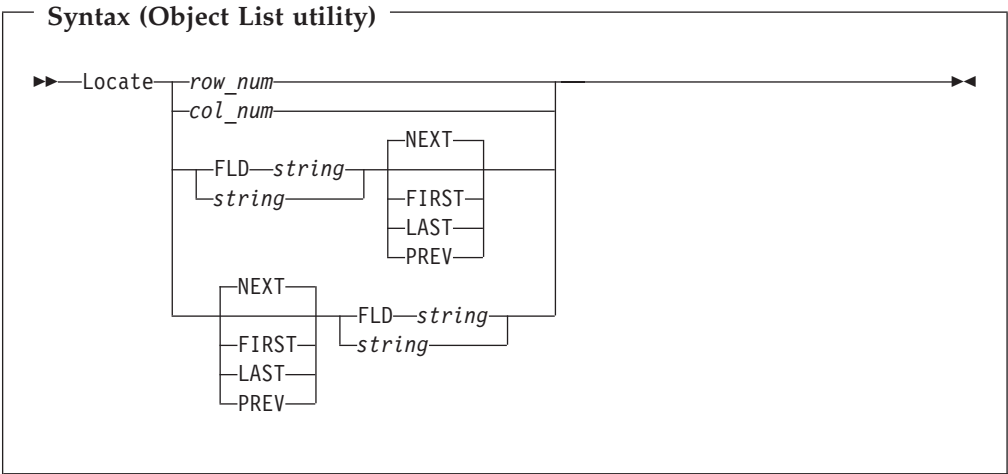
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## LOCATE primary command

- When you use the LOCATE primary command in an editor session or the Object List utility:
  - FM/DB2 moves the display to the row, or first column, that matches the search criteria.
  - To move to a particular row, specify the row number. You can specify a label to move to a row to which that label has previously been assigned.
  - To search for a particular column, specify either the column number (for example, #4), or part or all of a column name (for example, SAL). When you search for part or all of a column name, you can use one of the optional parameters to nominate the direction and starting point for the search. Where there may be ambiguity, use the FLD parameter to differentiate between a column name and a DB2 column number.
- When you use the LOCATE primary command in Print Browse (3.11):
  - Positions a specified line number at the top of the display.

## Syntax





<i>row_num</i>	<p>The number of the row you want to locate. The row number is shown in the prefix area (TABL display mode), or in the top right-hand part of the screen (SNGL display mode). For example:</p> <p>LOCATE 23</p> <p>locates row number 23.</p> <p><b>Note:</b> The row number is not shown when data is displayed with the Object List utility.</p>
<i>col_num</i>	<p>The DB2 column number (specified as #<i>n</i>) of the column you want to locate. For example:</p> <p>L #12</p> <p>locates column #12.</p>
<i>label</i>	<p>An existing user-assigned or editor-assigned label, identifying the row that you want to locate. The label must start with a period (.) followed by one to four alphabetic characters (no numeric or special characters). Labels starting with the letter "Z" indicate an editor-assigned label. For example:</p> <p>LOCATE .HERE</p> <p>locates a row marked with an existing label (.HERE), and</p> <p>L .ZLST</p> <p>locates the last row.</p>
FLD	<p>Indicates to FM/DB2 that the string (<i>string</i>) following the FLD keyword is the name or part of the name of the column you want to locate. For example:</p> <p>L FLD #ITEMS</p>



## LOCATE primary command

	locates the column named #ITEMS. (In this case, if you omit the FLD parameter, the command L #ITEMS results in an error as FM/DB2 expects the # symbol to be followed by a numeric DB2 column number.)
<i>string</i>	<p>The name (or part of a name) of the column you want to locate. The string can occur anywhere in the column name. For example:</p> <p>L SAL</p> <p>or</p> <p>L ARY</p>
	locates a column named "SALARY".
NEXT	<p>This is the default setting. In TABL display format, the search for <i>string</i> starts at (but excludes) the column currently displayed on the left of the screen and scans right. In SNGL display format, the search for <i>string</i> starts at (but excludes) the column currently displayed at the top of the screen and scans down. For example:</p> <p>L NEXT SAL</p> <p>or</p> <p>L SAL NEXT</p>
FIRST	<p>locates the next column whose name contains the string "SAL".</p> <p>In TABL display format, the search for <i>string</i> starts at (but excludes) the first column for the DB2 object and scans right. In SNGL display format, the search for <i>string</i> starts at (but excludes) the first column for the DB2 object and scans down. For example:</p> <p>L FIRST SAL</p> <p>or</p> <p>L SAL FIRST</p>
LAST	<p>locates the first column whose name contains the string "SAL".</p> <p>In TABL display format, the search for <i>string</i> starts at the last column for the DB2 object and scans left. In SNGL display format, the search for <i>string</i> starts at the last column for the DB2 object and scans up. For example:</p> <p>L LAST SAL</p> <p>or</p> <p>L SAL LAST</p>
PREV	<p>locates the last column whose name contains the string "SAL".</p> <p>In TABL display format, the search for <i>string</i> starts at the column currently displayed on the left of the screen and scans left. In SNGL display format, the search for <i>string</i> starts at the column currently displayed at the top of the screen and scans up. For example:</p> <p>L PREV SAL</p> <p>or</p> <p>L SAL PREV</p>

locates the previous column whose name contains the string "SAL".

*line\_num*      The line number you want positioned at the top of the display.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Collections panel” on page 405
- “Columns panel” on page 423
- “Databases panel” on page 538
- “Database Request Modules panel” on page 536
- “Distinct Types panel” on page 565
- “Functions panel” on page 632
- “Indexes panel” on page 645
- “Application Packages panel” on page 395
- “Application Plans panel” on page 397
- “Schemas panel” on page 721
- “Stored Procedures panel” on page 754
- “Synonyms panel” on page 756
- “Tables, Views and Aliases panel” on page 776
- “Table Spaces panel” on page 768
- “Triggers panel” on page 785
- “Storage Group(s) panel” on page 751

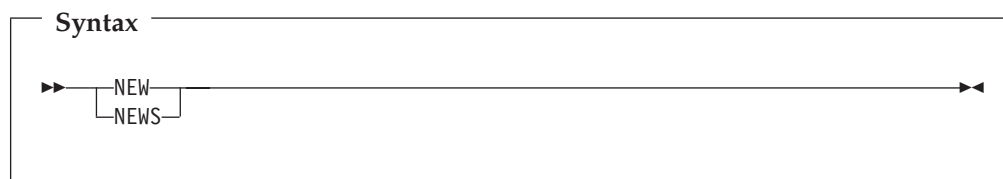
## Related tasks

- “Locating a row” on page 109
- “Locating a column” on page 110
- “Finding a string in a list of DB2 objects” on page 251
- “Locating a row or column in a list of DB2 objects” on page 251

## NEW, NEWS primary command

The NEW (or NEWS) primary command displays a panel providing general information about the current FM/DB2 version and release.

## Syntax



## Availability

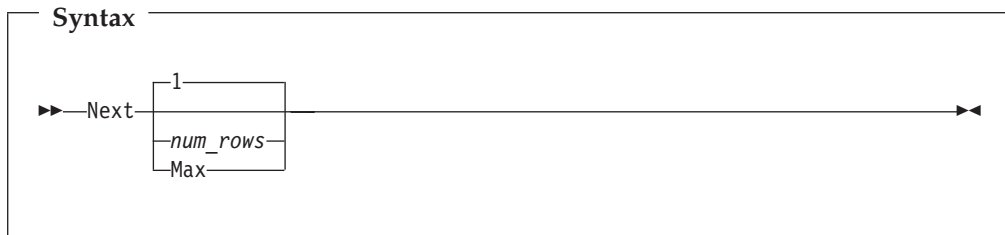
- All panels

**NEXT** primary command

Scrolls forward the number of rows specified.

## NEXT primary command

### Syntax



*num\_rows* Scroll forward *num\_rows* rows. Valid range: 1–999999999.

Max Scroll forward to make the last row visible.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

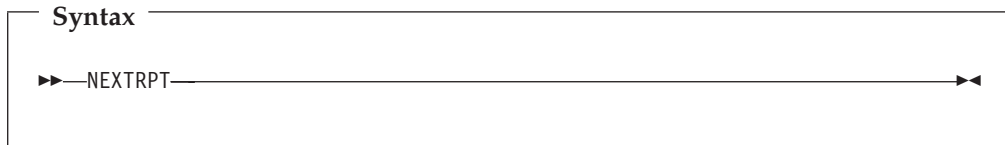
- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125

---

## NEXTRPT primary command

In advanced SELECT prototyping, if the cursor is positioned on a repeatable item within the syntax, the NEXTRPT primary command makes the next repeatable item current.

### Syntax



### Availability

“Advanced SELECT Prototyping panel” on page 375

### Related tasks

“Using advanced SQL prototyping” on page 328

---

## PB primary command

The PB primary command lets you browse, and optionally purge, the print output from your current FM/DB2 editor session held in the print data set.

If you enter the PB primary command when you have not created any print output, FM/DB2 displays the message Empty print data set.

## Syntax

```
Syntax
  >> PB <<
```

## Availability

Available on all panels

## Related tasks

- “Looking at the print output from your FM/DB2 session” on page 268

---

## PLAN primary command

When you use the SQL prototyping, execution and analysis option (4), you can use the PLAN primary command:

- On the Plan Table Rows panel to switch panel format to show the plan name.
- On the Statement Table Rows panel to switch panel format to show the plan name.

## Syntax

```
Syntax
  >> PLAN <<
```

## Availability

“Plan Table Rows panel” on page 668

## Related tasks

Chapter 12, “Working with SQL statements,” on page 321

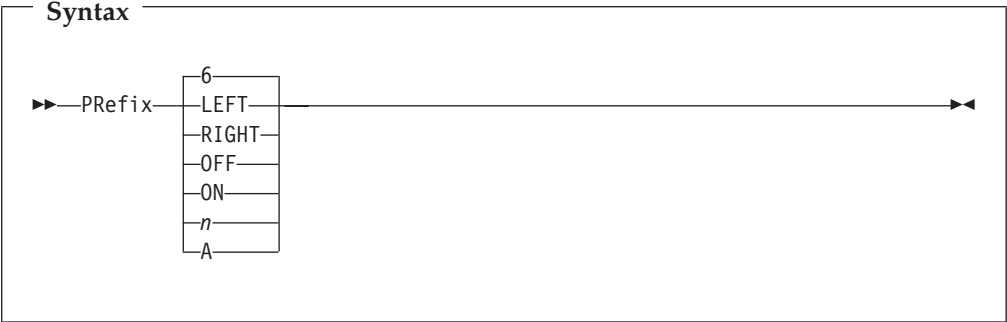
---

## PREFIX primary command

For TABL display format only, the PREFIX primary command sets the position and display state of the prefix area.

**PREFIX primary command**

**Syntax**



- LEFT** Displays the prefix area on the left side.
- RIGHT** Displays the prefix area on the right side.
- OFF** Does not display the prefix area.
- ON** Displays the prefix area at the position last set, with the display width last set.
- n*** Displays the prefix area at the position last set, with a display width of *n* digits. *n* must be in the range: 6–9.
- A** Displays the prefix area at the position last set, with a display width of 6 digits or, if necessary, larger (up to 9 digits) in order to display the whole record number.

**Availability**

- “Table Edit panel” on page 761

**Related tasks**

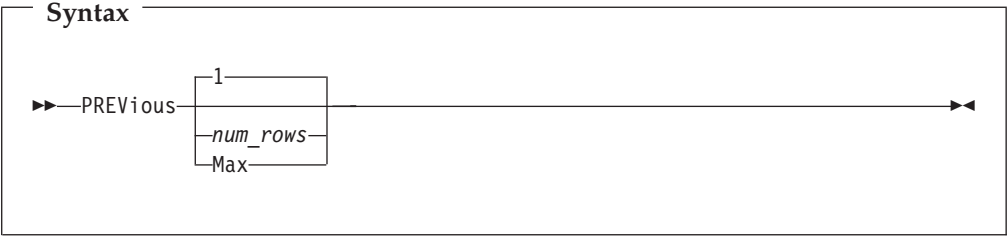
- “Managing the prefix area” on page 129

---

**PREVIOUS primary command**

Scrolls backward the number of rows specified.

**Syntax**



- num\_rows* Scroll backward *num\_rows* rows. Valid range: 1–999999999.
- Max Scroll backward to make the first row visible.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

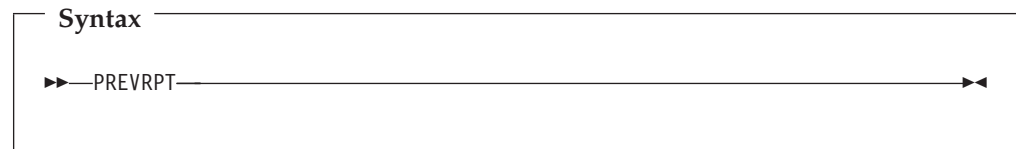
## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125

## PREVRPT primary command

In advanced SELECT prototyping, if the cursor is positioned on a repeatable item within the syntax, the PREVRPT primary command makes the previous repeatable item current.

## Syntax



## Availability

“Advanced SELECT Prototyping panel” on page 375

## Related tasks

[“Using advanced SQL prototyping”](#) on page 328

## PRINT primary command

In Print Browse, the PRINT primary command transfers the contents of the print data set to a SYSOUT class.

You specify the print data set using the **PRINTDSN** entry field on the Set Print Processing Options panel.

The SYSOUT class is determined by one of the following (whichever is found to exist first):

- The class specified by SYSOUT=*c* in the **PRINTOUT** entry field on the Print Utility panel (unless this field contains a value other than SYSOUT=*c*)
- Your default TSO SYSOUT class (if defined)
- SYSOUT class A (if neither of the above apply)

**Note:** When you enter PRINT on the command line for any FM/DB2 panel other than the Print Browse panel, it is interpreted as the ISPF system command, PRINT, and records a snapshot of the physical screen image in the print data set.

## PRINT primary command

### Syntax

```
Syntax
  >> PRINT <<
```

### Availability

Any Print Browse display panel

### Related tasks

- “Looking at the print output from your FM/DB2 session” on page 268

---

## PURGE primary command

In Print Browse, the PURGE command purges the print output by clearing the print data set.

### Syntax

```
Syntax
  >> PURGE <<
```

### Availability

A Print Browse display panel

### Related tasks

- “Looking at the print output from your FM/DB2 session” on page 268

---

## QUIT primary command

See “CANCEL primary command” on page 806.

---

## RCHANGE primary command

The RCHANGE primary command changes the next occurrence of the string or numeric value by repeating the previous CHANGE primary command.

### Syntax

```
Syntax
  >> RChange <<
```

Availability

- “Table Edit panel” on page 761

Related tasks

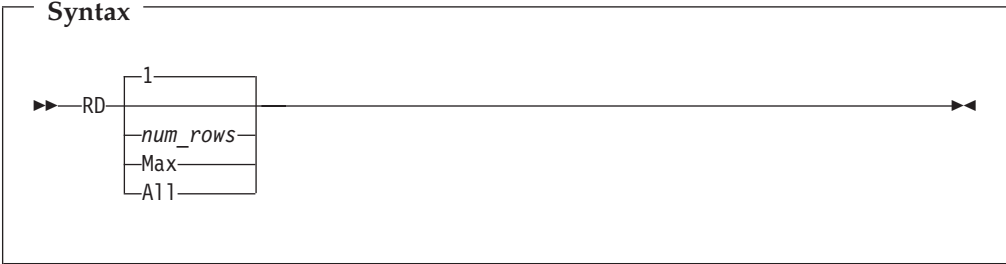
- “Changing data with the CHANGE command” on page 141

---

RD primary command

The RD (“Record Dump”) primary command prints, for the number of rows specified, in dump format using the current display format (TABL or SNGL).

Syntax



- num\_rows*      Print *num\_rows* rows, starting from the current row. Valid range: 1–999999999.
- Max              Print all remaining rows, from the current row to the end of the DB2 object.
- All               Print all rows in the DB2 object.

Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

Related tasks

- “Printing rows from a DB2 table” on page 266

---

REDIT primary command

When you issue the REDIT primary command from within an information panel for a referential integrity error, FM/DB2 displays an Edit session.

When you issue the REDIT primary command from within an FM/DB2 View or Edit editor session, FM/DB2 displays the Related tables panel listing information about the tables related to the table you are currently editing.

Notes:

1. The REDIT primary command is not available in FM/DB2 Browse.
2. The REDIT command works with DB2 tables only. You cannot use the command with DB2 views.



## REDIT primary command

### Syntax

Syntax (when issued for a referential integrity error)

```
»-REDIT-
```

Syntax (when issued from within an FM/DB2 editor session)

```
»-REDIT-  
      |  
      |col_num|
```

*col\_num*

A DB2 column number (specified as #*n*).

### Availability

- Within an information panel for a referential integrity error.
- From within an FM/DB2 editor session.

### Related tasks

- “Starting an Edit session of a related table” on page 153
- “Listing related tables” on page 151

---

## REFRESH primary command

The REFRESH primary command refreshes the list of DB2 subsystems on the DB2 Subsystem Selection menu.

### Syntax

Syntax

```
»-REFRESH-
```

### Availability

“DB2 Subsystem Selection panel” on page 553

### Related tasks

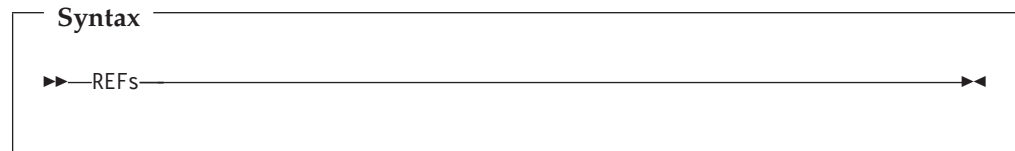
“Selecting the DB2 subsystem when more than one is available” on page 15

---

## REFS primary command

The REFS primary command shows or hides the column number (as defined in the DB2 catalog) for each displayed column when in SNGL display format.

## Syntax



## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

- “Displaying the column number” on page 130

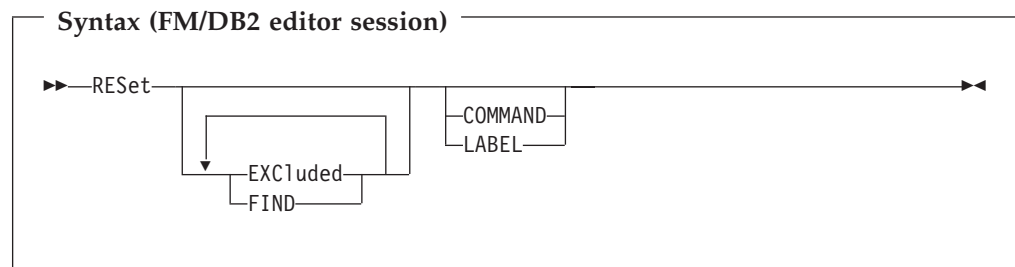
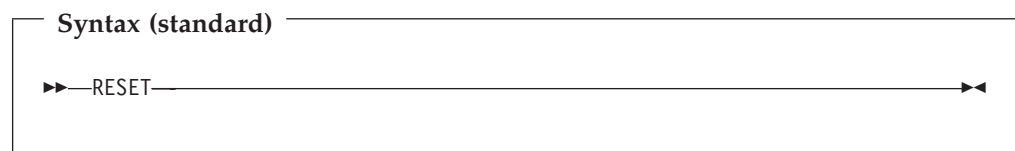
## RESET primary command

In an FM/DB2 editor session, you use the RESET command to redisplay excluded rows, or to reset strings highlighted by the FIND command. You can also use the RESET command to reset pending prefix commands, or to remove labels from rows.

For basic SELECT prototyping, the RESET primary command clears previous information from the SELECT, WHERE, and ORDER BY clauses in the SELECT statement at the top of the Basic SELECT prototyping panel.

When you are viewing the DB2 utility options panels, the RESET primary command sets the values for each option back to the installation default.

## Syntax



## RESET primary command

COMMAND	All pending prefix commands are reset.
EXCLUDED	All excluded rows are redisplayed.
FIND	All strings highlighted by the FIND command are reset.
LABEL	All row labels are deleted.

### Availability

- “Table View panel” on page 770
- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Basic SELECT Prototyping panel” on page 399

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Using basic SQL prototyping” on page 321
- “Setting options for DB2 utilities” on page 282

---

## RFIND primary command

The RFIND primary command repeats the search performed by the previous FIND primary command.

### Syntax

<p><b>Syntax</b></p> <p>►► RFind ◀◀</p>
---

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- “Repeating the search” on page 113

---

## RIGHT primary command

- In View or Edit:

In TABL display format, the RIGHT primary command scrolls to the right of your data. (You cannot use RIGHT in SNGL display format.)

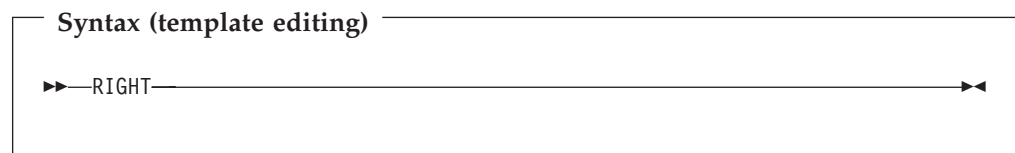
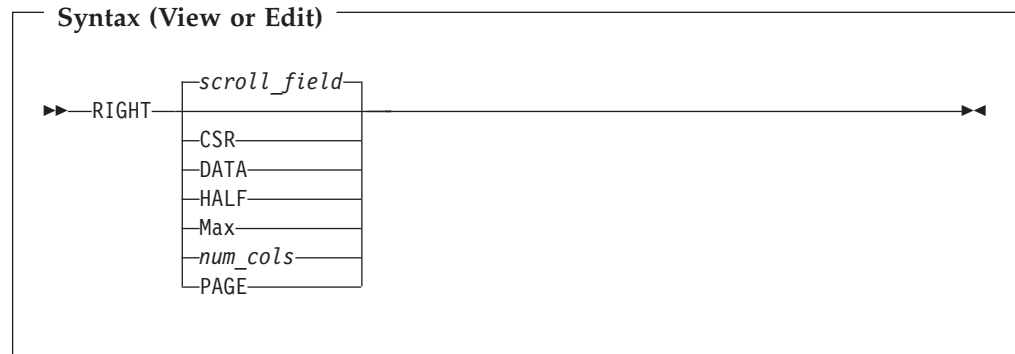
The amount (number of panel columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the **Scroll** field.
- When editing a template:

When you are editing a template, the RIGHT primary command:

  - Scrolls the **Row Selection Criteria** field on the Column Selection/Edit panel (the cursor must be positioned on the field at the time you issue the RIGHT primary command)

- Toggles the display (on an 80-character screen) on the Row Selection Criteria panel between the **Column name** and **Data type(length)** details appearing (the cursor must not be positioned on a **Value** field at the time you issue the RIGHT primary command)

## Syntax



<i>scroll_field</i>	Scroll right by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
CSR	Scroll right to the cursor position.
DATA	Scroll right one panel column less than a page of data.
HALF	Scroll right half a page of data.
Max	Scroll to the end of the row.
<i>num_cols</i>	Scroll right <i>num_cols</i> panel columns. Valid range: 1–9999.
PAGE	Scroll right one page of data.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Column Selection/Edit panel” on page 419
- “Row Selection Criteria panel” on page 710

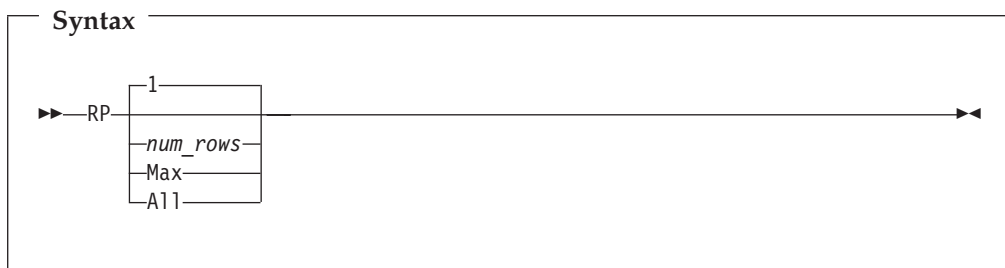
## Related tasks

- “Scrolling” on page 125
- “Scrolling the Row Selection Criteria field” on page 70
- “Toggling the display (80-character screens only)” on page 67

## RP primary command

The RP (“Record Print”) primary command prints, for the number of rows specified, in character format using the current display format (TABL or SNGL).

## Syntax



*num\_rows* Print *num\_rows* rows, starting from the current row. Valid range: 1-999999999.

Max	Print all remaining rows, from the current row to the end of the DB2 object.
-----	--

All                      Print all rows in the DB2 object.

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

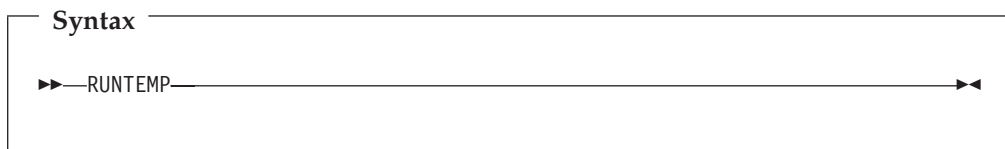
## Related tasks

- “Printing rows from a DB2 table” on page 266

## RUNTEMP primary command

The RUNTEMP primary command runs the current function with the template changes you have made but does not save the changes. RUNTEMP is only available when you run a function that uses a template.

## Syntax



## Availability

- “Template Save panel” on page 784
- “Column Selection/Edit panel” on page 419

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Printing the contents of a DB2 table” on page 263
- “Copying data from one DB2 object to another” on page 195
- “Copying data from a VSAM or QSAM file” on page 200
- “Copying data to a VSAM or QSAM file” on page 223
- Chapter 6, “Populating a DB2 table with data,” on page 193
- “LOAD utility” on page 290

---

## SAVE primary command

In Edit, the SAVE primary command saves any uncommitted changes without ending the Edit session.

### Syntax

<p>Syntax</p> <p>►►—SAVE—◄◄</p>
---------------------------------

### Availability

- “Table Edit panel” on page 761

### Related tasks

- “Ending an FM/DB2 editor session” on page 102
- “Updating a primary key” on page 156

---

## SAVEAS primary command

When you edit a template, the SAVEAS primary command displays the save panel where you can save the template as another name.

### Syntax

<p>Syntax</p> <p>►►—SAVEAS—◄◄</p>
-----------------------------------

### Availability

- “Column Selection/Edit panel” on page 419

### Related tasks

- Chapter 3, “Working with templates,” on page 55

---

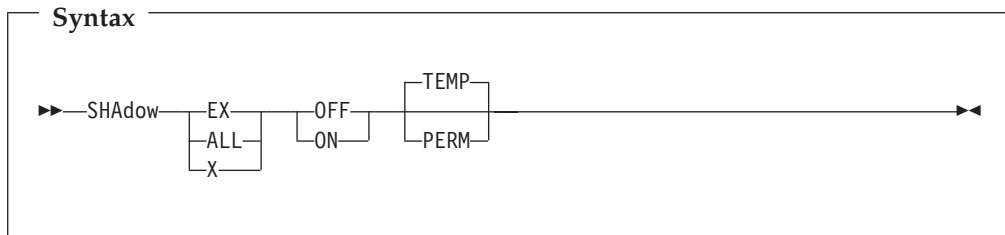
## SHADOW primary command

The SHADOW command hides or shows shadow lines.

**Note:** Shadow lines represent rows that have been excluded from display by the EXCLUDE primary command.

## SHADOW primary command

### Syntax



EX	Show or hide “excluded” rows shadow lines. This is the default setting.
ALL	Show or hide “excluded” rows shadow lines.
X	Same as EX.
OFF	Hide “excluded” rows shadow lines.
ON	Show “excluded” rows shadow lines.
TEMP	Shadow setting applies to the current FM/DB2 editor session only. This is the default setting.
PERM	Shadow setting is saved in your FM/DB2 profile, and applies to all FM/DB2 editor sessions until changed.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

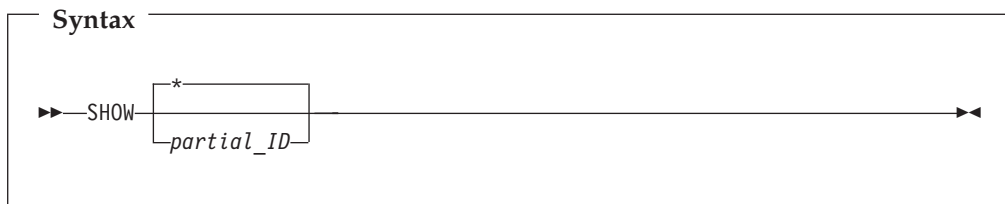
- “Excluding rows” on page 127

---

## SHOW primary command

The SHOW command restricts the list of DB2 subsystems shown on the DB2 Subsystem Selection menu.

### Syntax



*	Show all DB2 subsystems.
<i>partial_ID</i>	The partial ID of a DB2 subsystem, starting or ending with an asterisk (*), or both. Shows all DB2 subsystems whose ID matches the partial ID specified.

## Availability

- “DB2 Subsystem Selection panel” on page 553

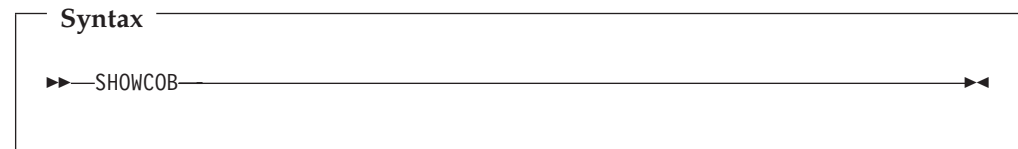
## Related tasks

- “Restricting the list of DB2 subsystems” on page 18

## SHOWCOB primary command

The SHOWCOB command displays details showing which COBOL compiler is currently being used.

## Syntax



## Availability

Available on all panels

## Related tasks

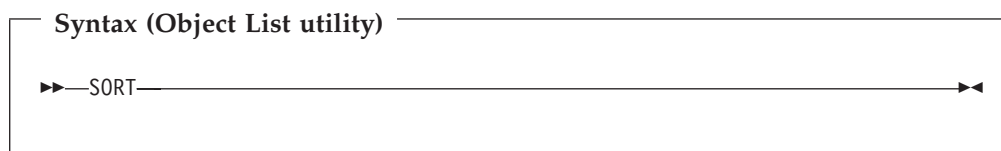
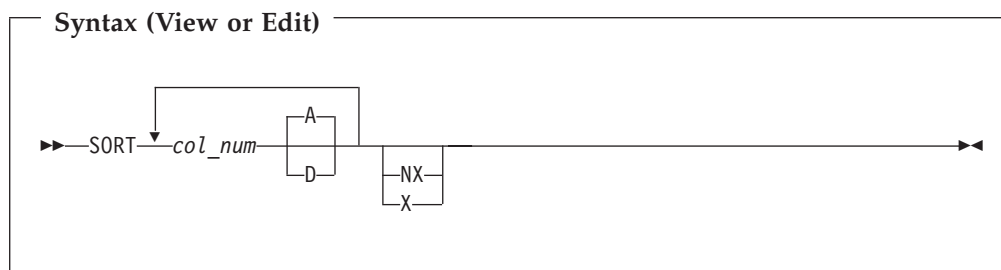
- “Checking which COBOL compiler you're using” on page 14

## SORT primary command

- In View or Edit, the SORT primary command changes the order of the data you are browsing or editing in TABL display format.  
FM/DB2 sorts the data according to its hexadecimal representation using a hierarchy of keys, starting with the first specified column as the primary key, and subsequent specified columns as less significant keys. You specify the hierarchy left to right.
- When you use the Object List utility (3.4) to display a list of objects, you can sort a column in the current object list by issuing the SORT primary command with the cursor positioned on the column you want to sort.



### Syntax



col_num	The DB2 column number (specified as # <i>n</i> ) of a column to be used as the sort key. You can specify between 1 and 5 column numbers. Multiple column numbers must be separated by a blank.
A	Sort data in ascending sequence. This is the default sequence.
D	Sort data in descending sequence.
NX	Non-excluded rows only. Sorts rows as if any excluded rows did not exist.
X	Excluded rows only. Sorts excluded rows as if any non-excluded rows did not exist.

### Availability

- “DB2 View panel” on page 559
- “DB2 Browse panel” on page 540
- “DB2 Edit panel” on page 544
- Any panels displayed with the Object List utility (3.4)

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- Chapter 8, “Working with lists of DB2 objects,” on page 243

---

## SQL primary command

The SQL primary command displays the SQL SELECT statement for the object you are processing. You can view the SELECT statement and save it in an ISPF data set for future reference.

When you enter the SQL command, the SELECT statement is presented in a standard ISPF EDIT panel. You can save the statement using the ISPF CREATE command. To do this:

1. On the command line, type CREATE.
2. In the prefix area of the top line of the SELECT statement, type c9999.
3. Press Enter.

You are asked to supply the data set and member name in which to save the SELECT statement. If the data set does not exist, you are asked to specify the allocation attributes to create it. You cannot use the attributes of the temporary data set displayed; you must provide the required attributes yourself.

**Note:** When you start an editor session from the function entry panel, the SELECT clause in the SQL statement includes every column of the table, even if you have edited the template and deselected one or more columns.

When you are working with SQL statements, any changes you make to the command in the ISPF Edit session are not preserved when you return to the prototyper.

## Syntax

Syntax

```

  >>—SQL—<<
  
```

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Basic SELECT Prototyping panel” on page 399
- “Advanced SELECT Prototyping panel” on page 375
- “Enter, Execute and Explain SQL Statements panel” on page 598

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- Chapter 12, “Working with SQL statements,” on page 321

---

## SQLID primary command

The SQLID primary command allows you to change the SQLID to be used as part of the connection to DB2.

## Syntax

Syntax

```

  >>—SQLIDDB2_sqlid—<<
  
```

*DB2\_sqlid*      The required SQLID to be used as part of the connection to DB2.

## Availability

- The SQLID command can be issued on most FM/DB2 processing panels.  
You cannot issue the command from:
  - Pop-up panels
  - Tutorial panels

## SQLID primary command

- Panels displayed by ISPF. For example, the Audit log listing.

## Related tasks

- “Specifying the SQLID” on page 33

## TEDIT primary command

The TEDIT command displays the Column Selection/Edit panel from within an FM/DB2 editor session.

## Syntax

**Syntax**

►► TEdit ◄◄

## Availability

- “Table Edit panel” on page 761
- “Table Browse panel” on page 758
- “Table View panel” on page 770

## Related tasks

- “Editing a template” on page 63

## TOP primary command

The TOP primary command scrolls to the first page of data.

## Syntax

**Syntax**

►►—Top

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125

## TP primary command

The TP primary command prints the current template.

## Syntax

```
Syntax
>>TP<<
```

## Availability

- “Column Selection/Edit panel” on page 419

## Related tasks

- “Printing a template” on page 57

---

## TYPE primary command

The TYPE primary command shows or hides the data type (and, for non-numeric columns, the length of the column) for each displayed column when in SNGL display format.

## Syntax

```
Syntax
>>Type<<
```

## Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

## Related tasks

- “Displaying the data type” on page 131

---

## UNDO primary command

Use the UNDO primary command to undo the last set of changes you made to the SELECT statement at the top of the Basic SELECT prototyping panel.

## Syntax

```
Syntax
>>UNDO<<
```

## Availability

- “Basic SELECT Prototyping panel” on page 399

### Related tasks

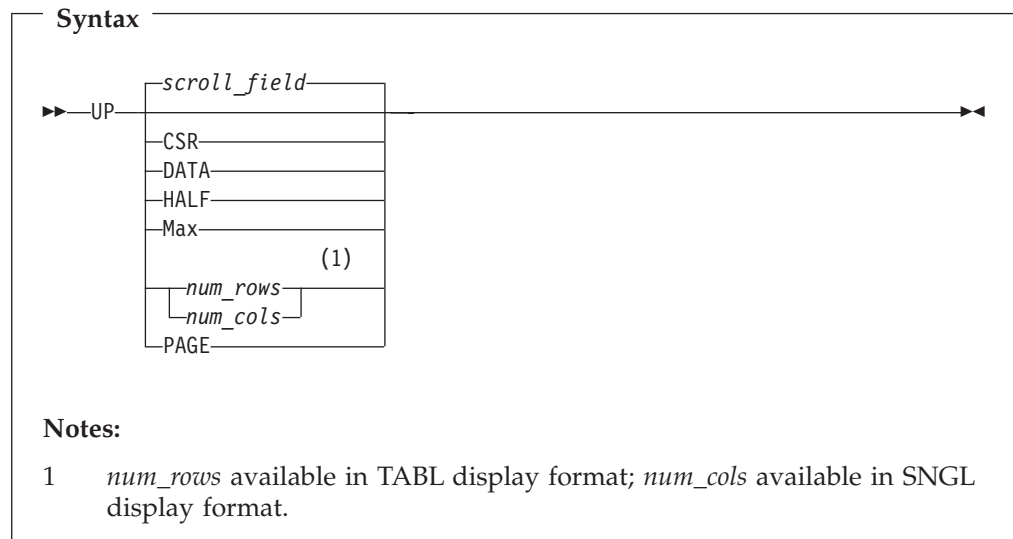
“Using basic SQL prototyping” on page 321

## UP primary command

The UP primary command scrolls up (backward) through your data.

The amount (number of rows or columns) scrolled is determined by either an optional parameter or, if no parameter is entered, by the amount indicated in the **Scroll** field.

### Syntax



<i>scroll_field</i>	Scroll up by the amount indicated in the <b>Scroll field</b> . This is the default value if no parameter is used.
CSR	Scroll up to the cursor position.
DATA	Scroll up one row (TABL) or column (SNGL) less than a page of data.
HALF	Scroll up half a page of data.
Max	Scroll to top of the table. This has the same effect as TOP command.
<i>num_rows</i>	Scroll up <i>num_rows</i> rows. Valid range: 1–9999. Available in TABL display format.
<i>num_cols</i>	Scroll up <i>num_cols</i> columns. Valid range: 1–9999. Available in SNGL display format.
PAGE	Scroll up one page of data.

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770
- “Enter, Execute and Explain SQL Statements panel” on page 598

## Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95
- “Scrolling” on page 125
- “Entering, executing, and explaining SQL statements” on page 354

---

## VER primary command

The VER primary command displays the current FM/DB2 version number and the PTF number for each FM/DB2 component in a window. The window also indicates whether or not FM/DB2 is APF-authorized.

## Syntax

**Syntax**

```

>> VER <<
  
```

## Availability

Available on all panels

## Related tasks

“Checking your FM/DB2 version” on page 13

---

## VIEW primary command

The VIEW primary command starts a new FM/DB2 View editor session. .

## Syntax

**Syntax**

```

>> VIEW [current_object_owner.—current_object_name
        |current_object_owner.—
        |new_object_owner.—new_object_name] <<
  
```

*current\_object\_owner*

The name of the owner of the object in the current FM/DB2 editor session.

*current\_object\_name*

The name of the object in the current FM/DB2 editor session.

*new\_object\_owner*

The name of the owner of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

*new\_object\_name*

The name of the object to be pre-filled in the entry panel for the new FM/DB2 editor session.

## VIEW primary command

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- Chapter 4, “Viewing and changing DB2 data,” on page 95

---

## ZOOM primary command

In TABL display format, the ZOOM command zooms in on the row selected by the cursor, or the top row displayed if the cursor is not positioned on a row.

In SNGL display format, the ZOOM command shows the current row. If some columns have been deselected in the template, these columns are now shown.

### Syntax

<p><b>Syntax</b></p> <p>►► ZOOM ◀◀</p>
--

### Availability

- “Table Browse panel” on page 758
- “Table Edit panel” on page 761
- “Table View panel” on page 770

### Related tasks

- “Zooming in to see all of a row” on page 124

---

## Chapter 17. FM/DB2 functions

This chapter contains information about the FM/DB2 functions that can be executed in batch jobs.

The preferred method for generating the FM/DB2 batch utility control statements is to allow FM/DB2 to generate the required statements.

The syntax diagrams and keyword descriptions in this section are provided for reference only.

---

### How to use this reference chapter

This chapter lists the FM/DB2 batch functions in alphabetical order.

The following subsections are supplied, where relevant, for each function:

#### **Purpose**

A short summary of what you can do with the function.

#### **Usage notes**

A more detailed explanation of how to use the function.

#### **Syntax**

A syntax diagram, followed by a parameter list. The parameter list describes the parameter, and shows (where appropriate) its default and other possible values. If you specify parameters that are not relevant to the function, File Manager ignores them. If you specify the same parameter more than once, File Manager uses the first value that you specify.

#### **Batch example**

A listing of a sample batch job.

#### **Return codes**

Lists the return codes that are specific to the function.

#### **Related functions**

Other functions that are related in some way (for example, the export and import functions can be used to transfer data between DB2 systems)

---

### General tips about performance when you use File Manager functions

The following tips are provided as a guide to improving performance when using File Manager functions:

#### **Use the FASTREXX subset of REXX**

If a user PROC is required, it is strongly recommended that, rather than the full REXX language, the FASTREXX subset of REXX is used. File Manager provides a set of external REXX functions designed to allow many common tasks to be performed within the FASTREXX subset. See *File Manager User's Guide and Reference*, Chapter 14, "Enhancing File Manager processing" on page 345 for a discussion of FASTREXX.

#### **Template and copybook processing**

The utilities DBX and DBI allow a copybook or template to be specified for the target/input data set, respectively. The utilities DBX, DBI, DBC, D2G and



## General tips about performance when you use File Manager functions

DBP optionally require a DB2 template that describes the DB2 object to be processed. When using these functions, consider the following performance-related points:

- File Manager can be most efficient if a template is used instead of a copybook. If a copybook must be used, specify the language of the copybook. (LANG=COBOL, LANG=HLASM, or LANG=PLI, instead of the default LANG=AUTO) for best performance.
- Template expressions should be written, if at all possible, using expressions suitable for File Manager internal processing. For more details, see *File Manager User's Guide and Reference* "Improving performance using internal expression processing" on page 144.

---

## File Manager DB2 batch functions

This section describes the File Manager DB2 functions that you can use in batch jobs. For more information about using these functions, see Chapter 6, "Populating a DB2 table with data," on page 193, Chapter 7, "Copying data," on page 195, and Chapter 9, "Printing," on page 263.

### DBC (Copy) batch command

#### Purpose

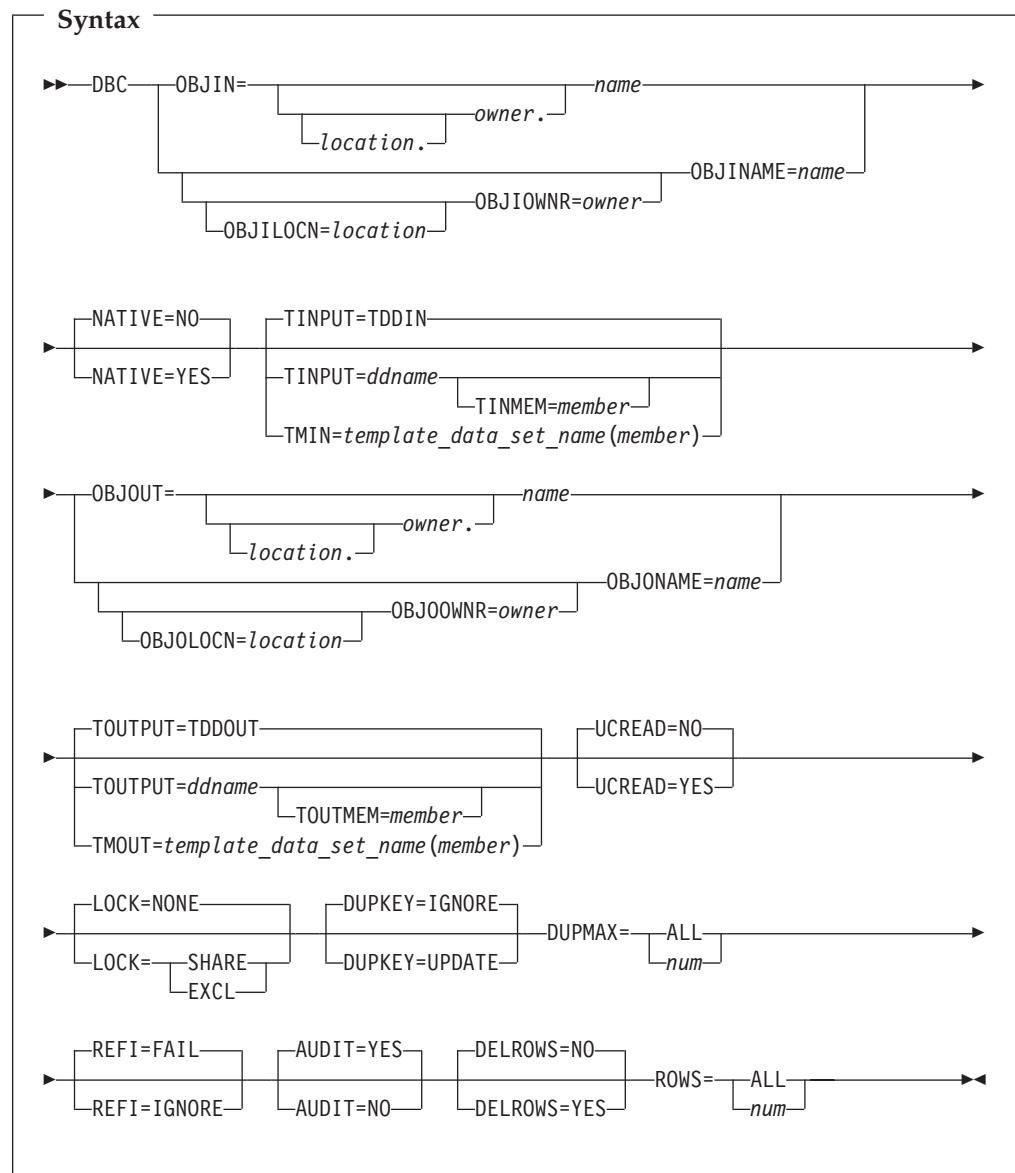
To copy data from one DB2 object to another DB2 object. Both objects need to be accessible from the currently connected DB2 system.

#### Usage

The FM/DB2 copy utility can:

- Optionally delete all rows from the target table prior to copying any data.
- Select the rows and columns to be copied.
- Limit the total number of rows to be copied.
- Reformat data into one or more new columns.
- Initialize columns with a new value or pattern.

The FM/DB2 copy utility takes no account of any referential integrity relationships defined on the source DB2 object.



**OBJIN**=*location.owner.name*

The optional name of the DB2 remote server (*location*) where the source object is located; the optional name of the owner of the source object (*owner*) and the source object name (*name*) to be copied.

When *location* is not specified the current (local) DB2 server is used. When the *owner* is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the *owner* value is non-blank.

OBJIN should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJILOCN, OBJIOWNR, OBJINAME keywords to specify the object.

## DBC (Copy) batch command

### **OBJILOCN**=*location*

The optional name of the DB2 remote server (*location*) where the source object is located. See "Specifying a DB2 object name" on page 889.

### **OBJIOWNR**=*owner*

The optional name of the owner of the source object (*owner*) to be copied. See "Specifying a DB2 object name" on page 889.

### **OBJINAME**=*name*

The object name (*name*) for the source object to be copied. See "Specifying a DB2 object name" on page 889.

### **NATIVE**

Specifies whether FM/DB2 should process Unicode encoded data natively when copying data between two Unicode encoded tables. This option can be ignored if the default processing of Unicode data is desired; that is, Unicode data is potentially substituted with error characters when copying data between Unicode tables.

**YES** Process Unicode data natively.

**NO** Do not Process Unicode data natively. This is the default.

### **TINPUT**=*ddname*

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the source DB2 object to be copied. If you specify a concatenated DD, then you must provide the member name, *member*, via the TINMEM keyword. See "Specifying the template for a DB2 object" on page 890.

### **TINMEM**=*member*

The name of the template member in the dataset(s) identified by the TINPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TMIN parameter is specified. See "Specifying the template for a DB2 object" on page 890.

### **TMIN**=*template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the source DB2 object to be copied. See "Specifying the template for a DB2 object" on page 890.

### **OBJOUT**=*location.owner.name*

The optional name of the DB2 remote server (*location*) where the target object is located; the optional name of the owner of the target object (*owner*) and the target object name (*name*) to be copied.

When location is not specified the current (local) DB2 server is used. When the owner is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the owner value is non-blank.

OBJOUT should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJILOCN, OBJIOWNR, OBJONAME keywords to specify the object.

### **OBJOLOCN**=*location*

The optional name of the DB2 remote server (*location*) where the target object is located. See "Specifying a DB2 object name" on page 889.

**OBJOOWNER=owner**

The optional name of the owner of the target object (*owner*) to be copied. See “Specifying a DB2 object name” on page 889.

**OBJONAME=name**

The object name (*name*) for the target object to be copied. See “Specifying a DB2 object name” on page 889.

**TOUTPUT=ddname**

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the target DB2 object. If you specify a concatenated DD, then you must provide the member name, *member*, via the TOUTMEM keyword. See “Specifying the template for a DB2 object” on page 890.

**TOUTMEM=member**

The name of the template member in the dataset(s) identified by the TOUTPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TMOUT parameter is specified. See “Specifying the template for a DB2 object” on page 890.

**TMOUT=template\_data\_set\_name(member)**

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the target DB2 object. See “Specifying the template for a DB2 object” on page 890.

**UCREAD**

Specifies whether FM/DB2 should use uncommitted read, when accessing the source object:

- YES** Uncommitted read is used. In this case, DB2 takes no locks when accessing the data in the source table, and it is possible that the data for a row changes after being read by FM/DB2, resulting in data inconsistencies.
- NO** Uncommitted read is not used. This is the default.

**LOCK** Specifies whether the source table should be locked, prior to copying data. The possible options are:

**NONE**

The default and recommended value. Any locks taken by DB2 depend on DB2 installation options, and options specified when the source object was created, unless negated by UCREAD=YES.

**SHARE**

FM/DB2 locks the source object in SHARE mode before copying data. This option is only effective for tables, it has no effect if the source object is a view. When an object is locked in SHARE mode, other users may read the object, but no updates by other users are possible.

**EXCL**

FM/DB2 locks the source object in EXCLUSIVE mode before copying the data. This option is only effective for tables, it has no effect if the source object is a view. When an object is locked in EXCLUSIVE mode, no other users may access the object at all, unless using uncommitted read.

**DUPKEY**

Specifies how FM/DB2 should respond to any duplicate key errors:

**IGNORE**

FM/DB2 ignores the error and continues processing. The row that caused the duplicate key error is not copied to the target DB2 object.

## DBC (Copy) batch command

### UPDATE

FM/DB2 attempts to update the existing row. The columns of the table that are part of the unique index that caused the SQLCODE-803 error are used to identify the row. No comparison is made between the copied row and the existing row prior to the update operation (that is, the update is done regardless of whether the copied row and existing row are the same). If there is more than one unique index defined on the target table, it is possible for an SQLCODE-803 to occur when the update is attempted. This is considered to be an update error.

### DUPMAX

The number of duplicate key errors that are allowed before FM/DB2 terminates import processing:

#### **ALL or 0**

There is no limit.

*num* The number of duplicate key errors allowed, up to a maximum of 2147483647.

**REFI** Specifies whether to ignore errors arising from the violation of a check constraint (SQLCODE-545). The default is REFI=FAIL, meaning any check constraint error terminates copy processing. Otherwise (REFI=IGNORE) check constraint errors are ignored.

### AUDIT

Specifies whether FM/DB2 is to write records to the FM/DB2 audit log:

**YES** Write records to the FM/DB2 audit log. This is the default.

**NO** Do not write records to the FM/DB2 audit log.

This option may be ignored if an installation audit option has been set that prevents a user modifying the installation setting.

### DELROWS

Specifies whether FM/DB2 should attempt to delete all rows from the target table, prior to starting the copy operation:

**YES** Attempt to delete all rows.

**NO** Do not delete any rows. This is the default.

The deletion of rows from the target table is done using DELETE \* FROM <object name> and fails if there are any referential integrity related errors arising from the deletion of rows.

### ROWS

The maximum number of rows to be copied:

**ALL** All rows from the source object are written to the target object.

*num* The maximum number of rows to be copied. Valid range: 1-99999999.

## Examples

Example 1: Copy the DSN8810.EMP table to a remote location. Delete all rows in the target table before copying the data. Use uncommitted read when accessing DSN8810.EMP. Audit the access to DSN8810.EMP.

```
//DBC JOB (acct),'name'  
//* Copy DSN8810.EMP table to the same table at a remote location  
/*  
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')  
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR  
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR  
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR  
//SYSPRINT DD SYSOUT=*
```

```
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM DBC OBJIN="DSN8810"."EMP",
$$FILEM OBJOUT=REMLoc."DSN8810"."EMP",
$$FILEM UCREAD=YES,
$$FILEM LOCK=NONE,
$$FILEM DUPKEY=IGNORE,
$$FILEM DUPMAX=ALL,
$$FILEM REFI=FAIL,
$$FILEM AUDIT=YES,
$$FILEM DELROWS=YES,
$$FILEM ROWS=ALL
/*
```

Example 2: Copy the DSN8810.EMP table to a DSN8COPY.EMP. Update any rows in the target table that generate duplicate key errors, to a maximum of 100 duplicate key errors.

```
//DBC JOB (acct),'name'
/* Copy DSN8810.EMP table to a copy of the same table.
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM DBC OBJIN="DSN8810"."EMP",
$$FILEM OBJOUT="DSN8COPY"."EMP",
$$FILEM LOCK=NONE,
$$FILEM DUPKEY=UPDATE,
$$FILEM DUPMAX=100,
$$FILEM REFI=FAIL,
$$FILEM ROWS=ALL
/*
```

## Return codes

The return codes from the DBC function:

- 0 The function completed successfully
- 16 A serious error was encountered

## Related functions

- DBI** Import data from a sequential or VSAM file into a DB2 table (page 867)
- DBX** Export data from a DB2 object to a sequential or VSAM file (page 875)
- D2G** Create (generate) DB2 data (page 885)

## DBI (Import) batch command

### Purpose

To import data, in a variety of formats, from a QSAM or VSAM file, into a DB2 object. The DB2 object must be accessible from the currently connected DB2 system.

### Usage

The FM/DB2 import utility can:

- Optionally delete all rows from the target table prior to importing any data.

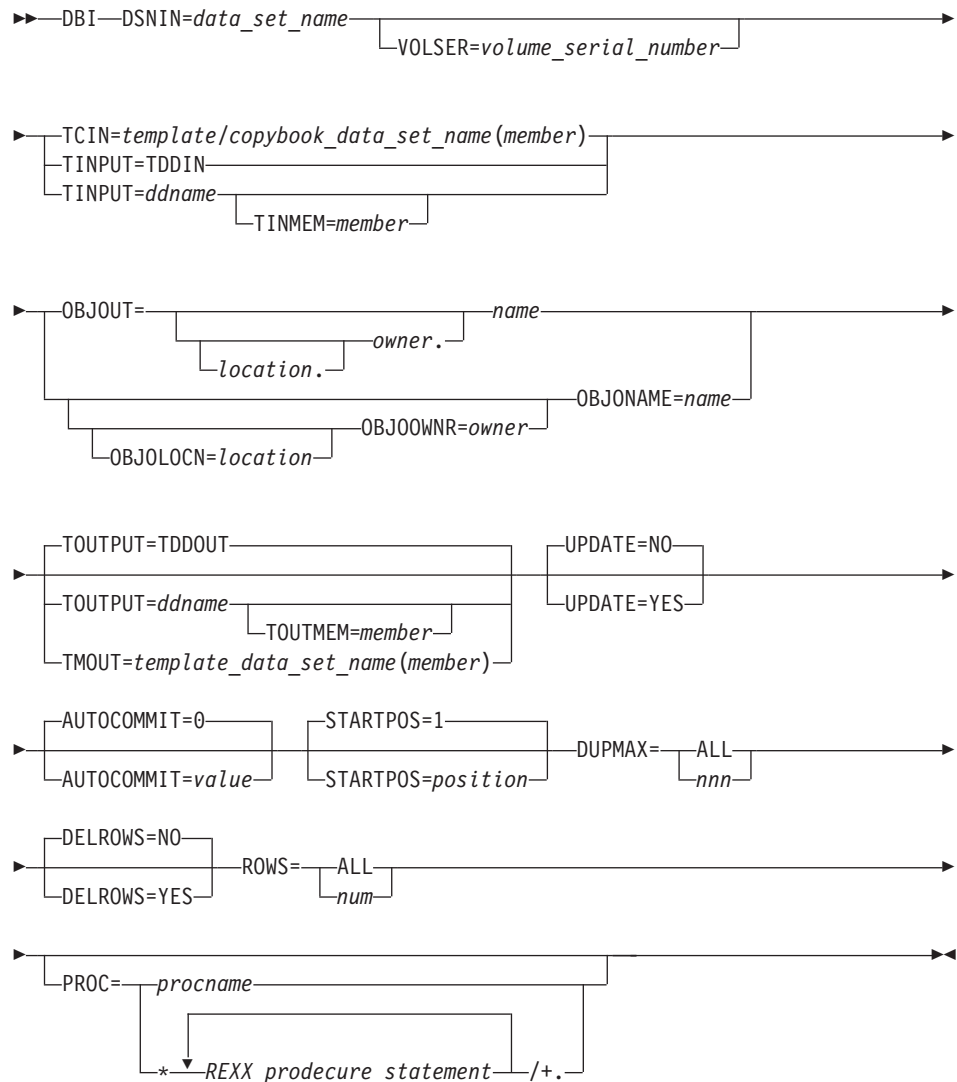
## DBI (Import) batch command

- Limit the number of records to be imported.
- Select the records to be imported.
- Map fields (using template mapping) in the import data set to columns in the target table, with appropriate data type and length conversions.
- Optionally update existing rows, when the values in an imported row's unique index columns match an existing table row.

A REXX procedure can be used during the import to modify mapped and converted data, prior to inserting it into the target DB2 table. Any REXX functions can be used at this point, and records can be dropped, or the import stopped via the REXX proc.

At the end of the import process the following statistics are shown:

- The count of rows successfully imported.
- The number of duplicate row errors.
- Optionally, the number of duplicate rows updated.
- Optionally, the number of duplicate row updates that failed.
- The number of rows in error.
- The number of rows skipped via template selection.
- The number of rows dropped by the REXX proc.

**Syntax****DSNIN**=*data\_set\_name*

The data set name containing the data to be imported. If the data set is partitioned, a member name is required.

**VOLSER**=*volume\_serial\_number*

The volume serial number for the input data set. This is only required for uncataloged data sets.

**TINPUT**=*ddname*

Defines a reference to a DD statement for the data sets which contains the template member that describes the record structure of your input data. The default is TDDIN.

**TINMEM**=*member*

The name of the template member in the dataset(s) identified by the



## DBI (Import) batch command

TINPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TCIN parameter is specified.

**TCIN**=*template/copybook\_data\_set\_name(member)*

The PDS (*template/copybook\_data\_set\_name*) and member name (*member*) of the template or copybook that describes the record structure of the data to be imported. The JCL generated by FM/DB2 specifies TCIN. See “Specifying the template/copybook for a data set” on page 890.

**OBJOUT**=*location.owner.name*

The optional name of the DB2 remote server (*location*) where the target object is located; the optional name of the owner of the target object (*owner*) and the target object name (*name*) to be copied.

When location is not specified the current (local) DB2 server is used. When the owner is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the owner value is non-blank.

OBJOUT should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJOLOCN, OBJOOWNR, OBJONAME keywords to specify the object.

**OBJOLOCN**=*location*

The optional name of the DB2 remote server (*location*) where the target object is located. See “Specifying a DB2 object name” on page 889.

**OBJOOWNR**=*owner*

The optional name of the owner of the target object (*owner*) for the import. See “Specifying a DB2 object name” on page 889.

**OBJONAME**=*name*

The object name (*name*) for the target object for the import. See “Specifying a DB2 object name” on page 889.

**TOUTPUT**=*ddname*

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the target DB2 object. If you specify a concatenated DD, then you must provide the member name, *member*, via the TOUTMEM keyword. See “Specifying the template for a DB2 object” on page 890.

**TOUTMEM**=*member*

The name of the template member in the dataset(s) identified by the TOUTPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TMOUT parameter is specified. See “Specifying the template for a DB2 object” on page 890.

**TMOUT**=*template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the target DB2 object. See “Specifying the template for a DB2 object” on page 890.

**UPDATE**

Specifies whether FM/DB2 should attempt to update any rows that generate SQLCODE-803 (duplicate key) errors:

**YES** FM/DB2 attempts to update the existing row. All columns of the table that are part of at least 1 unique index are used to identify the row. No comparison is made between the imported row and

the existing row prior to the update operation (that is, the update is done regardless of whether the imported row and existing row are the same). When using this option it is recommended that a DB2 table name, rather than a view name, be specified. FM/DB2 does not attempt to update existing rows in a view defined on a view.

**NO** No rows are updated. This is the default.

**AUTOCOMMIT=***value*

Specifies a numeric value indicating how often FM/DB2 should issue a DB2 commit during the import. The default is zero, meaning that no DB2 commits are issued during the import operation. Any positive value results in FM/DB2 issuing a DB2 commit after value successful changes are made during the import. A successful change occurs when either a record is successfully inserted, or when a row is successfully updated after the attempted insert of the record resulted in a duplicate key error. The counter is reset after each DB2 commit is issued, therefore multiple DB2 commits may be issued. If an error occurs during the import and one or more DB2 commits have been issued, only the changes made subsequent to the last DB2 commit point are backed out.

**STARTPOS=***position*

Specifies a numeric value indicating the starting record for the import. The default is 1, meaning FM/DB2 starts the import with the first record of the import file. Any value greater than 1 causes FM/DB2 to skip *position-1* records before commencing the import.

**DUPMAX**

The number of duplicate key errors that are allowed before FM/DB2 terminates import processing:

**ALL or 0**

There is no limit.

*num* The number of duplicate key errors allowed, up to a maximum of 2147483647.

**DELROWS**

Specifies whether FM/DB2 should attempt to delete all rows from the target table, prior to starting the copy operation:

**YES** Attempt to delete all rows.

**NO** Do not delete any rows. This is the default.

The deletion of rows from the target table is done using DELETE \* FROM <object name> and fails if there are any referential integrity related errors arising from the deletion of rows.

**ROWS**

The maximum number of records to be imported:

**ALL** All records from the import data set are inserted into the target object.

*num* The maximum number of records to be imported. Valid range: 1-999999999.

**PROC** REXX procedure:

*procname*

The name of the REXX procedure to be used when processing import records.

**\*** An inline procedure. The \* is followed by one or more REXX procedure statements, and the terminating "/+."

## DBI (Import) batch command

### Examples

Example 1: Import data from a sequential file into DSN8810.EMP. Delete all rows in DSN8810.EMP before importing the data

```
//DBI JOB (acct),'name'
/* Import data from a sequential file into DSN8810.EMP.
/* Delete all the rows from the table before importing the data.
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM DBI DSNIN=ID1.EXPORT.EMP.EXAMPLE1,
$$FILEM TCIN=ID1.FM.TEMPLATE(EMP),
$$FILEM OBJOUT="DSN8810"."EMP",
$$FILEM UPDATE=NO,
$$FILEM DUPMAX=ALL,
$$FILEM DELROWS=YES,
$$FILEM ROWS=ALL
/*
```

Example 2: Import data from a sequential file into DSN8810.EMP. Use REXX proc PROC1 to process each record in the sequential file before inserting the record. Update any rows that cause duplicate key errors, to a maximum of 50 duplicate key errors.

```
//DBI JOB (acct),'name'
/* Import data from a sequential file into DSN8810.EMP.
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//FMNEXEC DD DSN=ID1.EXEC,DISP=SHR
//SYSIN DD *
$$FILEM DBI DSNIN=ID1.EXPORT.EMP.EXAMPLE1,
$$FILEM TCIN=ID1.FM.TEMPLATE(EMP),
$$FILEM OBJOUT="DSN8810"."EMP",
$$FILEM UPDATE=YES,
$$FILEM DUPMAX=50,
$$FILEM DELROWS=NO,
$$FILEM ROWS=ALL,
$$FILEM PROC=PROC1
/*
```

### Return codes

The return codes from the DBI function:

- 0 The function completed successfully
- 16 A serious error was encountered

### Related functions

- DBC** Copy data from one DB2 object to another (page 862)
- DBX** Export data from a DB2 object to a sequential or VSAM file (page 875)
- D2G** Create (generate) DB2 data (page 885)

## DBP (Print) batch command

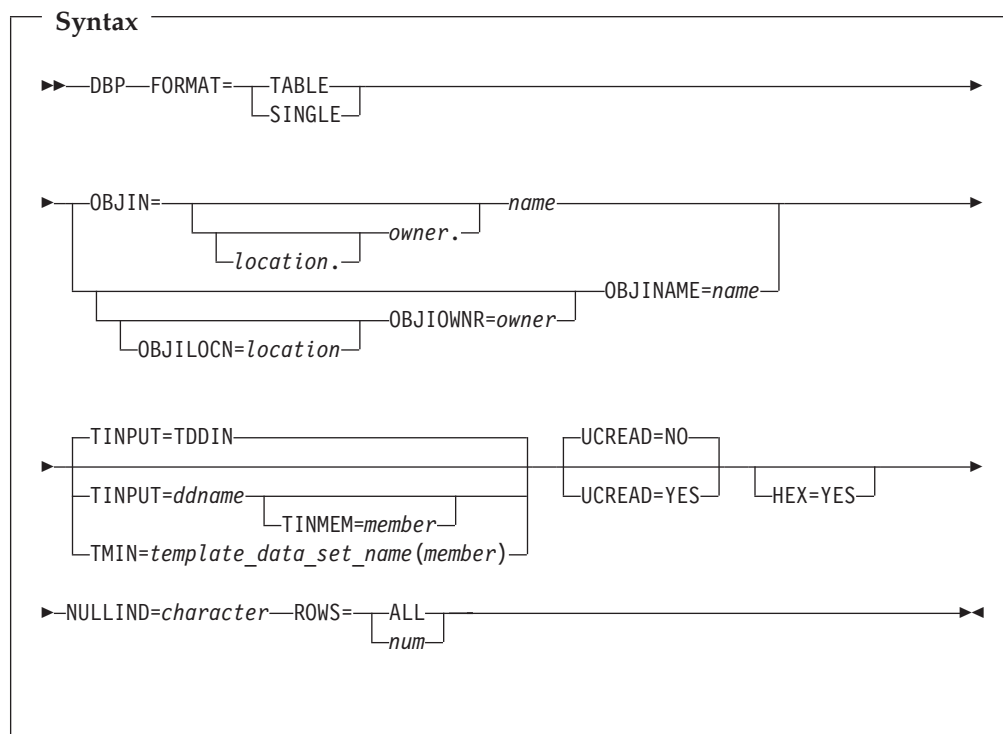
### Purpose

To print the contents of a DB2 object in a variety of formats.

### Usage

The FM/DB2 Print utility function can:

- Print data in table or single formats, in either character or HEX.
- Select the rows and columns to be printed.
- Limit the number of rows to be printed.



### FORMAT

The formatting mode for the printed data:

#### TABLE

In table mode each row of the table occupies a single line, and columns appear left to right across the page.

#### SINGLE

In single mode each row of the table occupies multiple print lines. The first column of the object is printed on the first, and possibly more lines, followed by the second column and so on.

### OBJIN=location.owner.name

The optional name of the DB2 remote server (*location*) where the object is located; the optional name of the owner of the object (*owner*) and the object name (*name*) to be printed.

When location is not specified the current (local) DB2 server is used. When the owner is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the owner value is non-blank.

## DBP (Print) batch command

OBJIN should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJILOCN, OBJIOWNR, OBJINAME keywords to specify the object.

### OBJILOCN=*location*

The optional name of the DB2 remote server (*location*) where the object to be printed is located. See "Specifying a DB2 object name" on page 889.

### OBJIOWNR=*owner*

The optional name of the owner of the object (*owner*) to be printed. See "Specifying a DB2 object name" on page 889.

### OBJINAME=*name*

The object name (*name*) for the object to be printed. See "Specifying a DB2 object name" on page 889.

### TINPUT=*ddname*

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the source DB2 object to be printed. If you specify a concatenated DD, then you must provide the member name, *member*, via the TINMEM keyword. See "Specifying the template for a DB2 object" on page 890.

### TINMEM=*member*

The name of the template member in the dataset(s) identified by the TINPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TMIN parameter is specified. See "Specifying the template for a DB2 object" on page 890.

### TMIN=*template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the source DB2 object to be copied. See "Specifying the template for a DB2 object" on page 890.

### UCREAD

Specifies whether FM/DB2 should use uncommitted read, when accessing the source object:

**YES** Uncommitted read is used. In this case, DB2 takes no locks when accessing the data in the source table, and it is possible that the data for a row changes after being read by FM/DB2, resulting in data inconsistencies.

**NO** Uncommitted read is not used. This is the default.

### HEX=YES

Specifies that FM/DB2 should print the data in hexadecimal format. Omit this option if normal printing is required.

### NULLIND=*character*

Defines the character used to indicate that the value for a column is the DB2 null value, in the printed data. The default is the underscore character. The value for this character is set using the editor **Null Column Indicators: Display** option. When specified in the File Manager utility control statements, the character must be a printable character other than a comma. The value cannot be enclosed in quotes.

### ROWS

The maximum number of rows to be printed:

**ALL** All rows from the source object are printed.

*num*     The maximum number of rows to be printed. Valid range: 1-99999999.

### Examples

Example 1: Print data from DSN8810.EMP, in single mode. Use uncommitted read when accessing the DB2 data. Print the data in hexadecimal format.

```
//DBP JOB (acct),'name'
/* Print table DSN8810.EMP in SINGLE format.
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM DBP FORMAT=SINGLE,
$$FILEM OBJIN="DSN8810"."DEPT",
$$FILEM UCREAD=YES,
$$FILEM HEX=YES,
$$FILEM NULLIND=_,
$$FILEM ROWS=ALL
/*
```

### Return codes

The return codes from the DBP function:

- 0        The function completed successfully
- 16      A serious error was encountered

### Related functions

None.

## DBX (Export) batch command

### Purpose

To export data from a DB2 table or view, in any local or distributed DB2 subsystem, to a sequential or VSAM file.

### Usage

The FM/DB2 Export Utility can export data from a DB2 table or view using one of:

#### File Manager

The output data set can be a sequential data set, a partitioned data set or a VSAM file.

#### The DB2 UNLOAD utility

The output data set is constrained by the DB2 UNLOAD utility to be a sequential data set. Any reformatting of the output data is performed by the DB2 UNLOAD utility. Therefore some template mapping and re-formatting options that are available when using File Manager are not available.

#### The DB2 DSNTIAUL sample program

The output data set is constrained by the DB2 DSNTIAUL utility to be a sequential data set. Any reformatting of the output data is performed by

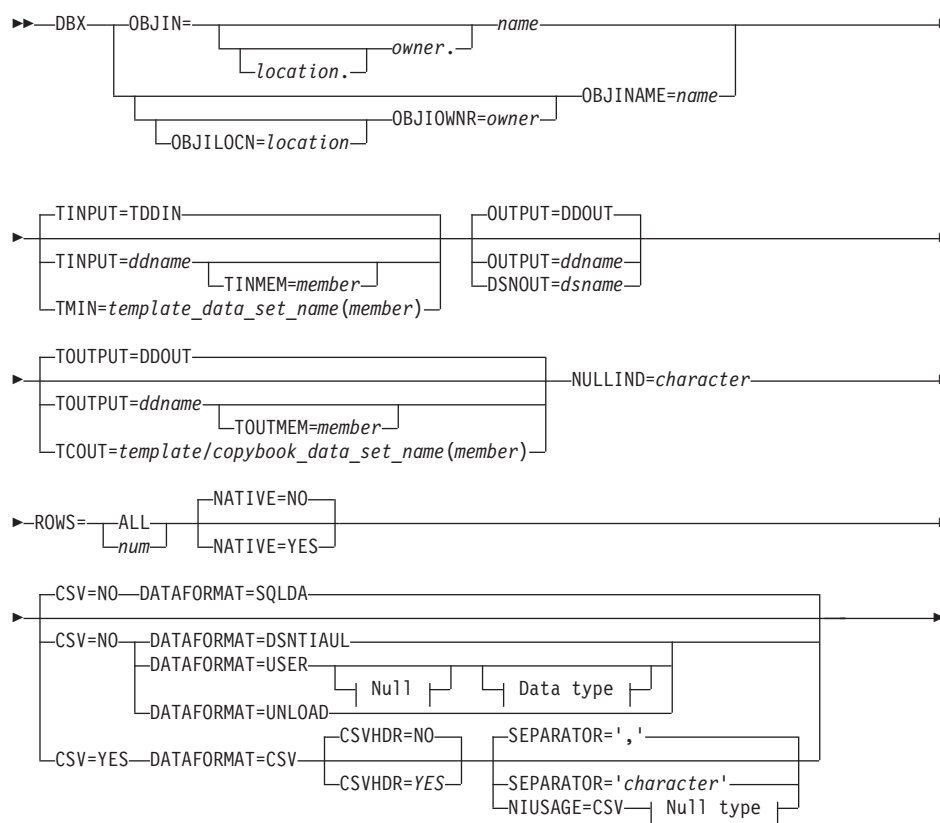
## DBX (Export) batch command

the DB2 DSNTIAUL sample program utility. Therefore some template mapping and re-formatting options that are available when using File Manager are not available.

When exporting large volumes of data, the DB2 UNLOAD utility offers superior performance when compared with File Manager, or the DSNTIAUL sample program.

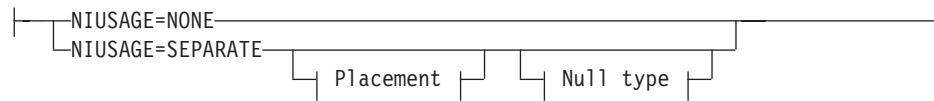
You can choose a pre-defined (standard) export data format, or specify the data format using a copybook or template. You can specify that File Manager is to export the data, or use a DB2 utility or sample program to export the data. For a user-defined data format you can specify how the DB2 null indicator is represented (either one byte or two byte) and where the null indicator is located in the exported data. You can also specify that the data is to be exported in delimited format (comma separated variables).

### Syntax Part 1 of 2



## Syntax Part 2 of 2

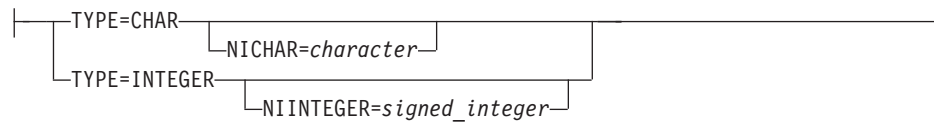
## Null (null indicator):



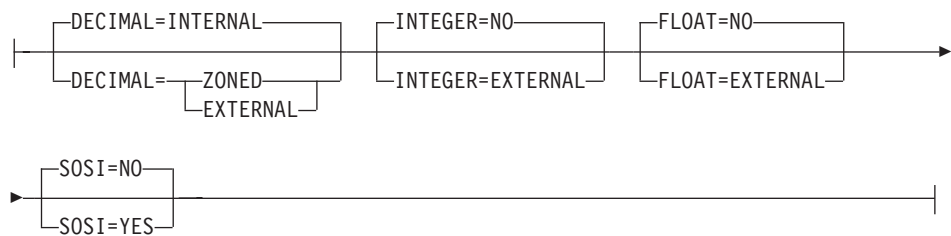
## Placement:



## Null type:



## Data type:

**OBJIN**=*location.owner.name*

The optional name of the DB2 remote server (*location*) where the object is located; the optional name of the owner of the object (*owner*) and the object name (*name*) to be exported.

When *location* is not specified the current (local) DB2 server is used. When the *owner* is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the *owner* value is non-blank.

OBJIN should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJILOCN, OBJIOWNR, OBJINAME keywords to specify the object.

**OBJILOCN**=*location*

The optional name of the DB2 remote server (*location*) where the object to be exported is located. See “Specifying a DB2 object name” on page 889.



## DBX (Export) batch command

### **OBJIOWNR=***owner*

The optional name of the owner of the object (*owner*) to be exported. See “Specifying a DB2 object name” on page 889.

### **OBJINAME=***name*

The object name (*name*) for the object to be exported. See “Specifying a DB2 object name” on page 889.

### **TINPUT=***ddname*

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the DB2 object to be exported. If you specify a concatenated DD, then you must provide the member name, *member*, via the TINMEM keyword. See “Specifying the template for a DB2 object” on page 890.

### **TINMEM=***member*

The name of the template member in the dataset(s) identified by the TINPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TMIN parameter is specified. See “Specifying the template for a DB2 object” on page 890.

### **TMIN=***template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the DB2 object to be exported. See “Specifying the template for a DB2 object” on page 890.

### **OUTPUT=***ddname*

Defines a reference to a DD statement for the export data set. This keyword and the DSNOUT keyword are mutually exclusive. The JCL generated by FM/DB2 specifies OUTPUT=FMNOUT in the File Manager utility control statements, and an appropriate DD statement in the JCL.

### **DSNOUT=***dsname*

Defines the name of the export data set or an absolute path to the export HFS file (directory). This keyword and the OUTPUT keyword are mutually exclusive. The name may include a member name in parenthesis. An absolute path to an HFS file (directory) must be enclosed in apostrophes. If the data set name does not fit on one line, you can split it over more than one line.

### **TOUTPUT=***ddname*

Defines a reference to a DD statement for the data sets which contain the template member that describes the record structure of your output data. The default is TDDOUT.

### **TOUTMEM=***member*

The name of the template member in the dataset(s) identified by the TOUTPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TCOUT parameter is specified.

### **TCOUT=***template/copybook\_data\_set\_name(member)*

The PDS (*template/copybook\_data\_set\_name*) and member name (*member*) of the template or copybook that describes the record structure of the exported data. The JCL generated by FM/DB2 specifies TCOUT, when an output copybook or template is required. See “Specifying the template/copybook for a data set” on page 890.

### **NULLIND=***character*

For CSV format only, defines the character used to indicate that the value for a column is the DB2 null value, in the exported data. The default is the underscore character. The value for this character is set using the editor

**Null Column Indicators: Display** option. When specified in the File Manager utility control statements, the character must be a printable character other than a comma. The value cannot be enclosed in quotes.

NULLIND is always specified in the File Manager utility control statements. The value specified is ignored for all DATAFORMAT specifications other than CSV.

**ROWS**

The number of records to be exported:

**ALL** All records selected from the object are written to the export data set.

*num* The maximum number of records to be written to the export data set. Valid range: 1-99999999.

**NATIVE**

Specifies whether FM/DB2 should process Unicode encoded data natively when exporting data from a Unicode encoded table. This option can be ignored if the default processing of Unicode data is desired; that is, Unicode data is potentially substituted with error characters when copying data between Unicode tables.

**YES** Process Unicode data natively.

**NO** Do not Process Unicode data natively. This is the default.

**CSV** Specifies whether the exported data is to be in delimited variables format or not:

**NO** Export data is not to be in delimited format. This is the default.

**YES** Export data is to be in delimited format.

**DATAFORMAT**

The data format for the exported data:

**SQLDA**

The default. Any nullable column is preceded by a 2-byte binary field containing the null indicator. This field contains -1 if the column has the null value and 0 otherwise. Any decimal field occupies 16 bytes, with the data left-justified in the field and trailing binary zeros. Any graphic or vargraphic field is followed by two bytes containing binary zeros.

**UNLOAD**

In this format any nullable column is preceded by a 1-byte field containing the null indicator. This field contains hexadecimal "FF" if the column had a null value and 0 otherwise. Any decimal field occupies the minimum number of bytes needed to represent the data as a packed decimal field. Variable length columns in the unloaded records are padded to their maximum length and the padded data fields are preceded by two-byte length fields that indicate the size of the actual data without the padding. CCSID conversion is not supported. The exported data is in the CCSID used to bind the FM/DB2 plan.

**DSNTIAUL**

Any nullable column is followed by a 1-byte field containing the null indicator. This field contains "?" if the column had a null value. Any decimal field occupies the minimum number of bytes needed to represent the data as a packed decimal field.

**USER** The data format is defined by a user-specified copybook or template and template mapping. Alternatively the data format can be defined using the NIUSAGE, PLACE, TYPE (NICHAR, NIINTEGER), DECIMAL, INTEGER, FLOAT, and SOSI keywords.

## DBX (Export) batch command

**CSV** The data is exported as delimited variables. The default delimiter is the comma, the **SEPARATOR** keyword can be used to specify a different delimiter. A copybook/template cannot be used to describe the delimited variables data format.

### CSVHDR

Specifies whether column headers are to be produced on the first record of the export file when **CSV=YES** has been specified. Possible values are:

**NO** Column headers not produced.

**YES** Column headers produced.

### SEPARATOR=*'character'*

The character to be used as the delimiter, for delimited variables (CSV) format. The default is the comma. You can specify any printable characters in the control statements. To specify non-printable characters use **NIUSAGE=CSV** and then define the delimiter using the **TYPE**, **NICHAR** or **NIINTEGER** keywords.

### PLACE

The location of any DB2 null indicator fields in the exported data:

#### BEFORE

The field for the DB2 null indicator appears immediately before the data for the column.

#### AFTER

The field for the DB2 null indicator appears immediately after the data for the column.

**USER** The field for the DB2 null indicator is defined using a copybook or template, with template mapping.

### NIUSAGE

Specifies, for **CSV=NO**, whether or not null indicators appear in the exported data. **NIUSAGE=NONE** or **NIUSAGE=SEPARATE** should only be specified with **CSV=NO** and **DATAFORMAT= USER**.

#### NONE

The exported data is not to contain any DB2 null indicators. Using this option with a DB2 object that has nullable columns results in a loss of information.

#### SEPARATE

Specifies, for **CSV=YES**, that the **TYPE**, **NICHAR** and **NIINTEGER** keywords define the delimiter character(s). **NIUSAGE=CSV** should only be specified with **CSV=YES** and **DATAFORMAT=CSV**.

**CSV** Indicates that the **TYPE** and **NICHAR/NIINTEGER** keywords define a one or two character delimiter, to be used with **DATAFORMAT=CSV** only. This option should be used when the delimited variable's separator character (default is comma) cannot be used, and a suitable alternative cannot be specified using a single displayable character. Either a one byte or two byte delimiter can be specified by setting the **TYPE** keyword (see below) to the appropriate value. A one byte indicator is interpreted as a character, and therefore acts in a similar way to a one character value specified directly using the **SEPARATOR** keyword. A two byte indicator value is interpreted as a two byte signed integer, allowing a two byte, non-displayable value to be entered.

### TYPE=CHAR/INTEGER

The data format for the null indicator fields, or for the CSV delimiter. The null indicator/delimiter can be either a one byte (character) or two byte (signed integer) field. The character or integer used to indicate the DB2

null value/CSV delimiter can be specified using the NICHAR (TYPE=CHAR), or NIINTEGER (TYPE=INTEGER) keywords.

**NICHAR=character**

The character used to indicate that a column has the DB2 null value, or the CSV delimiter character. NICHAR should only be specified with TYPE=CHAR. You can specify any printable character other than comma in the control statements.

**NIINTEGER=signed\_integer**

The integer used to indicate that a column has the DB2 null value, or a two byte CSV delimiter. NIINTEGER should only be specified with TYPE=INTEGER. You can specify any signed integer in the range -32767 - 32768 inclusive.

**DECIMAL**

Specifies the data format for any decimal columns in the exported data. Possible values are:

**INTERNAL**

Decimal data appears in internal packed decimal format.

**ZONED**

Decimal data appears as a string of zoned decimal digits.

**EXTERNAL**

Decimal data appears as a string of characters, the string represents the decimal number, for example '3.1415'.

**INTEGER**

Specifies the data format for any integer columns in the exported data. An integer column can be a SMALLINT, INTEGER or BIGINT. Possible values are:

**NO** Integer data appears in internal format, occupying 2 bytes (SMALLINT), 4 bytes (INTEGER) or 8 bytes (BIGINT).

**EXTERNAL**

Integer data appears as a string of characters, the string represents the integer, for example, '42', '1000000'.

**FLOAT**

Specifies the data format for any floating point columns in the exported data. A floating point column is a REAL, FLOAT, DOUBLE or DECFLOAT column. Possible values are:

**NO** The floating point data appears in internal format.

**EXTERNAL**

Floating point data appears as a string of characters, the string represents the number, for example '-1.0000000000000000E+00'.

**SOSI** Specifies whether the data for graphic data type columns (GRAPHIC, VARGRAPHIC) should be enclosed in shift-out/shift-in (sosi) characters. Possible values are:

**NO** The graphics data is not enclosed in sosi characters.

**YES** The graphics data is enclosed in sosi characters.

**Examples**

Example 1: Export data from DB2 sample table DSN8810.EMP to a sequential file, using SQLDA format. The output data set is allocated in the batch job.

```
//DBX JOB (acct),'name'
/* Export DSN8810.EMP table to a data set
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
```

## DBX (Export) batch command

```
//          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM   DD SYSOUT=*
//FMNOUT    DD DISP=(MOD,CATLG,DELETE),UNIT=SYSALLDA,
//          AVGREC=U,
//          LRECL=144,RECFM=FB,DSORG=PS,
//          SPACE=(144,(42,4),RLSE),
//          DSN=ID1.EXPORT.EMP.SQ LDA
//SYSIN     DD *
$$FILEM DBX OBJIN="DSN8810"."EMP",
$$FILEM OUTPUT=FMNOUT,
$$FILEM NULLIND=_,
$$FILEM CSV=NO,
$$FILEM DATAFORMAT=FMSQLDA,
$$FILEM ROWS=ALL
/*
```

Example 2: Export data from DB2 sample table DSN8810.EMP to a sequential file, using DB2 UNLOAD format. The output data set is allocated in the batch job.

```
//DBX JOB (acct),'name'
/* Export DSN8810.EMP table to a data set
/*
//FMNDB2   EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
//          DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
//          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM   DD SYSOUT=*
//FMNOUT    DD DISP=(MOD,CATLG,DELETE),UNIT=SYSALLDA,
//          AVGREC=U,
//          LRECL=101,RECFM=FB,DSORG=PS,
//          SPACE=(101,(42,4),RLSE),
//          DSN=ID1.EXPORT.EMP.UNLOAD
//SYSIN     DD *
$$FILEM DBX OBJIN="DSN8810"."EMP",
$$FILEM OUTPUT=FMNOUT,
$$FILEM NULLIND=_,
$$FILEM CSV=NO,
$$FILEM DATAFORMAT=UNLOAD,
$$FILEM ROWS=ALL
/*
```

Example 3: Export data from DB2 sample table DSN8810.EMP to a sequential file, using DB2 DSNTIAUL format. The output data set is allocated in the batch job.

```
//DBX JOB (acct),'name'
/* Export DSN8810.EMP table to a data set
/*
//FMNDB2   EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
//          DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
//          DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM   DD SYSOUT=*
//FMNOUT    DD DISP=(MOD,CATLG,DELETE),UNIT=SYSALLDA,
//          AVGREC=U,
//          LRECL=101,RECFM=FB,DSORG=PS,
//          SPACE=(101,(42,4),RLSE),
//          DSN=ID1.EXPORT.EMP.DSNTIAUL
//SYSIN     DD *
$$FILEM DBX OBJIN="DSN8810"."EMP",
$$FILEM OUTPUT=FMNOUT,
$$FILEM NULLIND=_,
```

```

$$FILEM CSV=NO,
$$FILEM DATAFORMAT=DSNTIAUL,
$$FILEM ROWS=ALL
/*

```

Example 4: Export data from a table with a long name containing spaces to a sequential file, using SQLDA format. The output data set is pre-allocated.

```

//DBX JOB (acct),'name'
/* Export a table with a long name to a data set
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V910.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V910.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//FMNOUT DD DISP=MOD,
// DSN=ID1.EXPORT.EMP.EXAMPLE4
//SYSIN DD *
$$FILEM DBX OBJIOWNR=ID1,
$$FILEM OBJINAME='\$Very long table name to demonstrate how \$',
$$FILEM '\$long names are handled\$',
$$FILEM OUTPUT=FMNOUT,
$$FILEM NULLIND=_,
$$FILEM CSV=NO,
$$FILEM DATAFORMAT=FMSQLDA,
$$FILEM ROWS=ALL
/*

```

Example 5: Export data from DB2 sample table DSN8810.EMP to a sequential file, using a user-defined data format. The output data set is pre-allocated. In the user-defined data format:

- Null indicators are used (NIUSAGE=SEPARATE)
- Null indicators appear immediately after the data for the column (PLACE=AFTER)
- The null indicator is a two byte (signed integer) field (TYPE= INTEGER)
- The value used to indicate a column has the DB2 null value is -55.
- Any DECIMAL data type columns appear in external format (for example '3.1414')
- Any INTEGER data columns appear in external format (for example '1234')
- Any floating point data type columns appear in external format.

```

//DBX JOB (acct),'name'
/* Export DSN8810.EMP table to a data set
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V910.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V910.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//FMNOUT DD DISP=MOD,
// DSN=ID1.EXPORT.EMP.EXAMPLE5
//SYSIN DD *
$$FILEM DBX OBJIN="DSN8910"."EMP",
$$FILEM OUTPUT=FMNOUT,
$$FILEM NULLIND=_,
$$FILEM CSV=NO,
$$FILEM DATAFORMAT=USER,
$$FILEM NIUSAGE=SEPARATE,

```

## DBX (Export) batch command

```
$$FILEM PLACE=AFTER,  
$$FILEM TYPE=INTEGER,  
$$FILEM NIINTEGER=-55,  
$$FILEM DECIMAL=EXTERNAL,  
$$FILEM INTEGER=EXTERNAL,  
$$FILEM FLOAT=EXTERNAL,  
$$FILEM ROWS=ALL  
/*
```

Example 6: Export data from DB2 sample table DSN8810.EMP to a sequential file, using a CSV (delimited variables) format. The delimiter character is the '!' character. The output data set is pre- allocated.

```
//DBX JOB (acct),'name'  
/* Export DSN8810.EMP table to a data set  
/*  
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')  
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR  
// DD DSN=DB2V910.DSN1.SDSNEXIT,DISP=SHR  
// DD DSN=DB2.V910.SDSNLOAD,DISP=SHR  
//SYSPRINT DD SYSOUT=*  
//FMNTSPRT DD SYSOUT=*  
//SYSTEM DD SYSOUT=*  
//FMNOUT DD DISP=MOD,  
// DSN=ID1.EXPORT.EMP.CSV  
//SYSIN DD *  
$$FILEM DBX OBJIN="DSN8910"."EMP",  
$$FILEM OUTPUT=FMNOUT,  
$$FILEM NULLIND=_,  
$$FILEM CSV=YES,  
$$FILEM DATAFORMAT=CSV,  
$$FILEM SEPARATOR='!',  
$$FILEM ROWS=ALL  
/*
```

Example 7: Export data from DB2 sample table DSN8810.EMP to a sequential file, using a CSV (delimited variables format). The delimiter character is x'FFFF', defined using the NIUSAGE, TYPE and NIINTEGER keywords. The output data set is pre-allocated.

```
//DBX JOB (acct),'name'  
/* Export DSN8810.EMP table to a data set  
/*  
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')  
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR  
// DD DSN=DB2V910.DSN1.SDSNEXIT,DISP=SHR  
// DD DSN=DB2.V910.SDSNLOAD,DISP=SHR  
//SYSPRINT DD SYSOUT=*  
//FMNTSPRT DD SYSOUT=*  
//SYSTEM DD SYSOUT=*  
//FMNOUT DD DISP=MOD,  
// DSN=ID1.EXPORT.EMP.CSV2  
//SYSIN DD *  
$$FILEM DBX OBJIN="DSN8910"."EMP",  
$$FILEM OUTPUT=FMNOUT,  
$$FILEM NULLIND=_,  
$$FILEM CSV=YES,  
$$FILEM DATAFORMAT=CSV,  
$$FILEM NIUSAGE=CSV,  
$$FILEM TYPE=INTEGER,  
$$FILEM NIINTEGER=-1,  
$$FILEM ROWS=ALL  
/*
```

## Return codes

The return codes from the DBX function:



- 0        The function completed successfully
- 16       A serious error was encountered

### Related functions

- DBI**    Import data from a sequential or VSAM file into a DB2 table (page 867)
- DBC**    Copy data from one DB2 object to another (page 862)
- D2G**    Create (generate) DB2 data (page 885)

## D2G (Data Generate) batch command

### Purpose

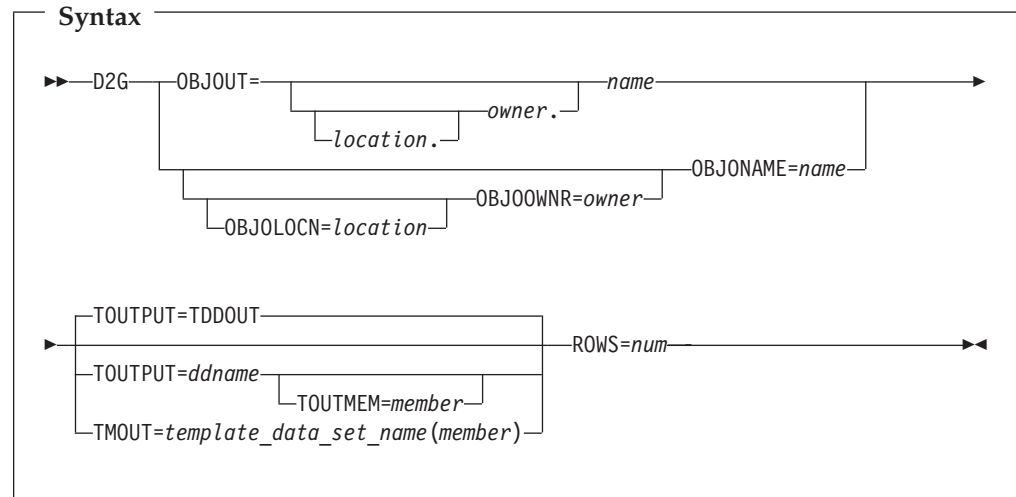
To load a DB2 object with test data.

### Usage

The FM/DB2 Data Create utility function can:

- Limit the number of rows to be created.
- Specify how, on a column-by-column basis, each row is be initialized.

### Syntax



### OBJOUT *location.owner.object*

The optional name of the DB2 remote server (*location*) where the object is located; the optional name of the owner of the object (*owner*) and the object name (*name*).

When *location* is not specified the current (local) DB2 server is used. When the *owner* is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the *owner* value is non-blank.

OBJOUT should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJOLOCN, OBJOOWNR, OBJONAME keywords to specify the object.

### OBJOLOCN=*location*

The optional name of the DB2 remote server (*location*) where the object is located. See “Specifying a DB2 object name” on page 889.



## D2G (Data Generate) batch command

**OBJOOWNER**=*owner*

The optional name of the owner of the object (*owner*). See "Specifying a DB2 object name" on page 889.

**OBJONAME**=*name*

The object name (*name*) for the object. See "Specifying a DB2 object name" on page 889.

**TMOUT**=*template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the DB2 object where the data is to be created. See "Specifying the template for a DB2 object" on page 890. The JCL generated by FM/DB2 always specifies TMOUT.

**TOUTPUT**=*ddname*

Defines a reference to a DD statement for the data sets which contain the template member that describes the record structure of your output data. The default is TDDOUT.

**TOUTMEM**=*member*

The name of the template member in the dataset(s) identified by the TOUTPUT parameter, if it has not been specified on the DD statement. This parameter must not be specified if the TCOU parameter is specified.

**ROWS**=*num*

The number of rows to be created. Valid range 1-99999999.

### Examples

Example 1: Create 1000 rows of test data in table "ID1"."TABLE1". The initialization information for each column of the table are defined in template EMPDG.

```
//D2G JOB (acct),'name'
/* Create rows in table ID2.TABLE1.
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2G OBJOUT="ID1"."TABLE1",
$$FILEM TMOUT=ID1.FM.TEMPLATE(EMPDG),
$$FILEM ROWS=1000
/*
```

### Return codes

The return codes from the D2G function:

- 0 The function completed successfully
- 16 A serious error was encountered

### Related functions

- DBC** Copy data from one DB2 object to another (page 862)
- DBI** Import data from a sequential or VSAM file into a DB2 table (page 867)
- DBX** Export data from a DB2 object to a sequential or VSAM file (page 875)
- D2G** Create (generate) DB2 data (page 885)

## D2TP (Template create/update) batch command

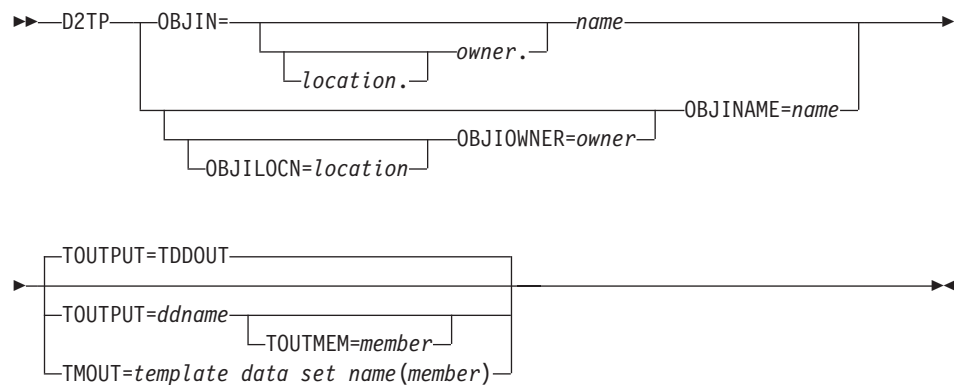
### Purpose

To create or update a template based on one DB2 object. The object must be accessible from the currently connected DB2 system.

### Usage

The FM/DB2 template create/update utility creates a template if it does not exist, or updates the template if it does exist.

#### Syntax



#### OBJIN *location.owner.object*

The optional name of the DB2 remote server (*location*) where the source object is located; the optional name of the owner of the source object (*owner*) and the source object name (*name*).

When *location* is not specified the current (local) DB2 server is used. When the *owner* is not specified the object name is qualified using the current SQLID. When FM/DB2 generates the utility control statements, the *owner* value is non-blank.

OBJIN should be used when the fully qualified name fits on a single line in the JCL deck. The last usable column is column 71. When the fully qualified name does not fit on a single line in the JCL deck, use one or more of the OBJILOCN, OBJIOWNR, OBJINAME keywords to specify the object.

#### OBJILOCN=*location*

The optional name of the DB2 remote server (*location*) where the source object is located. See “Specifying a DB2 object name” on page 889.

#### OBJIOWNR=*owner*

The optional name of the owner of the source object (*owner*). See “Specifying a DB2 object name” on page 889.

#### OBJINAME=*name*

The object name (*name*) for the source object. See “Specifying a DB2 object name” on page 889.

#### TOUTPUT=*ddname*

Defines a reference to a DD statement for the data sets which contain the DB2 template that describes the target DB2 object. Concatenated DD

## D2TP (Template create/update) batch command

statements are not supported and the referenced data set must be catalogued. If you have not specified a member name in the referenced DD statement, then you must provide a TOUTMEM keyword. If no TOUTPUT or TMOUT parameter has been provided, then TOUTPUT=TDDOUT is used. See “Specifying the template for a DB2 object” on page 890.

### TOUTMEM=*member*

The name of the template member in the dataset identified by the TOUTPUT or TMOUT parameter. This parameter is ignored if the member name is provided with the DD statement or the TMOUT parameter. See “Specifying the template for a DB2 object” on page 890.

### TMOUT=*template\_data\_set\_name(member)*

The PDS (*template\_data\_set\_name*) and member name (*member*) of the File Manager DB2 template that describes the target DB2 object. See “Specifying the template for a DB2 object” on page 890.

## Examples

Example 1: Create a DB2 template for the DSN8810.EMP using TMOUT keyword.

```
//D2TPJOB (acct),'name'
/* Create template FMN.TEMPLATE(EMP) for DSN8810.EMP table
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2TP OBJIN="DSN8810"."EMP",
$$FILEM TMOUT=FMN.TEMPLATE(EMP)
/*
```

Example 2: Use TOUTPUT, TOUTMEM keywords to create output template for DSN8810.EMP

```
//D2TPJOB (acct),'name'
/* Create template FMN.TEMPLATE(EMP) for DSN8810.EMP table
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//TOUT DD DSN=FMN.TEMPLATE,DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2TP OBJIN="DSN8810"."EMP",
$$FILEM TOUTPUT=TOUT,TOUTMEM=EMP
/*
```

Example 3: Use Default output DD TDDOUT with TOUTMEM to create output template for DSN8810.EMP

```
//D2TPJOB (acct),'name'
/* Create template FMN.TEMPLATE(EMP) for DSN8810.EMP table
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//TDDOUT DD DSN=FMN.TEMPLATE,DISP=SHR
```

## D2TP (Template create/update) batch command

```
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2TP OBJIN="DSN8810"."EMP",
$$FILEM TOUTMEM=EMP
/*
```

Example 4: Use Default output DD TDDOUT with member to create output template for DSN8810.EMP

```
//D2TPJOB (acct),'name'
/* Create template FMN.TEMPLATE(EMP) for DSN8810.EMP table
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//TDDOUT DD DSN=FMN.TEMPLATE(EMP),DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2TP OBJIN="DSN8810"."EMP"
/*
```

Example 5: Create 3 templates

```
//D2TPJOB (acct),'name'
/* Create template TOUT1-3 for DSN8810.EMP table
/*
//FMNDB2 EXEC PGM=FMNDB2,PARM=('SSID=DSN1,SQID=ID1')
//STEPLIB DD DSN=FMN.SFMNMOD1,DISP=SHR
// DD DSN=DB2V810.DSN1.SDSNEXIT,DISP=SHR
// DD DSN=DB2.V810.SDSNLOAD,DISP=SHR
//TOUT1 DD DSN=FMN.TEMPLATE(T1),DISP=SHR
//TOUT2 DD DSN=FMN.TEMPLATE(T2),DISP=SHR
//TOUT3 DD DSN=FMN.TEMPLATE(T3),DISP=SHR
//SYSPRINT DD SYSOUT=*
//FMNTSPRT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//SYSIN DD *
$$FILEM D2TP OBJIN="DSN8810"."EMP",TOUTPUT=TOUT1
$$FILEM D2TP OBJIN="DSN8810"."EMP",TOUTPUT=TOUT2
$$FILEM D2TP OBJIN="DSN8810"."EMP",TOUTPUT=TOUT3
/*
```

## Specifying a DB2 object name

For those batch functions that require a DB2 object name, FM/DB2 automatically determines the appropriate keywords to specify the DB2 object(s). For an input DB2 object this is OBJIN, or OBJILOCN (for location), OBJIOWNR (for owner) and OBJINAME (for name). For an output DB2 object this is OBJOUT, or OBJOLOCN (for location), OBJOOWNR (for owner) and OBJONAME (for name). The latter values are used when the OBJIN/OBJOUT value does not fit on a single line, or when the owner or name values contain special characters, for example, lower case letters. In what follows, a special character is any character other than the upper case letters A-Z, the digits 0-9, the 3 characters reserved as alphabetic extenders for national languages (@#\$), and the underscore character (\_).

When the owner or name value is split over two or more lines, the rules for continuing File Manager batch parameters must be observed. See the File Manager (Base) User's Guide for a full explanation. Briefly, each part of the value must be enclosed in apostrophes, and a comma must appear at the end of each line. The

## Specifying a DB2 object name

second and subsequent lines should include \$\$FILEM followed by a space and the next part of the parameter value, enclosed in apostrophes. When the owner/name value contains special characters FM/DB2 automatically determines a unique two-character delimiter for the parameter value. The default is \\$, another delimiter is used if \\$ appears in the owner/name. The two-character delimiter appears at the start and finish of the owner/name value. When the owner/name value spans two or more lines, the two-character delimiter appears at the start and end of every line, and apostrophes are used at the start and end of each partial parameter value - to satisfy the continuation rules for File Manager batch parameters. When you code your own batch control statements and the owner/name values extend over 2 or more lines, you should specify each part of the name separately and not use OBJIN/OBJOUT. If the owner/name values contain special characters, you must specify a two-character delimiter at the start and end of the parameter value (or partial parameter value). The delimiter must not appear in the owner/name value, and the first character of the delimiter must be a special character except for apostrophe and quote characters. When 2 character delimiters are used for an owner/name value, specify the owner/name exactly as is, do not double apostrophes or quotation characters, or omit any spaces.

## Specifying the template for a DB2 object

The File Manager template for a DB2 object must be an FM/DB2 template that was generated by FM/DB2. Unlike File Manager base, you cannot use a copybook to describe the structure of a DB2 object.

The JCL generated by FM/DB2 for the various batch functions uses the following batch keywords:

**TMIN** For functions where there is an input DB2 object (export, print, copy, data create)

**TMOUT**

For functions where there is an output DB2 object (import, copy).

When it is necessary to specify the template data set name in the JCL statements, rather than via a File Manager batch keyword, you can use the alternative keywords TINPUT and TINMEM.

## Specifying the template/copybook for a data set

To describe the structure of a data set you can use:

- A COBOL copybook
- A HLASM copybook
- A PL/I copybook
- A File Manager template

The JCL generated by FM/DB2 for the various batch functions always uses the TCIN or TCOUT batch keywords, as described below:

**TCIN** For functions where there is an input data set (import)

**TCOUT**

For functions where there is an output data set (export)

When it is necessary to specify the template/copybook data set name in the JCL statements, rather than via a File Manager batch keyword, you can use the alternative keywords TINPUT and TINMEM, or TOUTPUT and TOUTMEM.

---

## Appendix. FM/DB2 messages

---

### Messages

In this section, selected batch messages are listed in alphanumeric order. For each message, the information provided comprises:

- The message identifier.
- The text of the message.
- An explanation of the message.
- The required user response.

Messages issued by File Manager DB2 have a unique alphanumeric identifier with the format:

*FMNDannn*

where:

- a* Is an alphabetic character.  
*nnn* Is a 3-digit number.

When the message is issued by a batch function, the identifier is printed in front of the text of the message.

When the message is issued by an online function, the identifier is not displayed with the message. However, you can obtain the identifier of a message by typing MSGID on the command line and pressing Enter. This command causes the message identifier of the last message issued to be displayed on your screen.

Many of the online messages are comprised of a short message and long message. The short message is displayed in the upper right corner of the panel. The long message is only displayed if you press the F1 key when the short message is displayed.

---

**FMNDA001 IBM File Manager for z/OS Version 12**  
*Release 1*

**Explanation:** Shows the version and release information for File Manager.

**User response:** No action required. Informational message.

---

**FMNDA002 IBM File Manager for z/OS DB2**  
**Component**

**Explanation:** Shows the full component name for File Manager.

**User response:** No action required. Informational message.

---

**FMNDA003 IBM File Manager/DB2**

**Explanation:** Shows the abbreviated component name for File Manager.

**User response:** No action required. Informational message.

---

**FMNDA004 DB2 Component**

**Explanation:** Shows the short component name for File Manager.

**User response:** No action required. Informational message.

---

**FMNDA009 IBM File Manager for z/OS Version 12**  
**Release 1 Licensed Materials**

**Property of IBM**  
**5655-W68**

**Copyright IBM Corporation 2012**  
**All Rights Reserved.**

**Trademark of International Business**  
**Machines**

**Explanation:** Shows the product name and copyright information for File Manager, DB2 component.



**User response:** No action required. Informational message.

---

**FMNDA011** Panel *panel name* error. (short). PQUERY error processing ISPF panel *panel name*. (long)

**Explanation:** An ISPF error was encountered issuing a PQUERY service for panel name *panel name*.

**User response:** This is a File Manager internal error. Contact IBM service for assistance.

---

**FMNDA012** Installation error. DB2 catalog table *DB2 catalog table name* is not available. Some FM/DB2 functions will be inoperative. Contact your Systems Programmer.

**Explanation:** File Manager DB2 attempted to access the DB2 catalog table *DB2 catalog table name*. The access failed because *DB2 catalog table name* does not exist.

**User response:** File Manager DB2 component requires access to various DB2 catalog tables for correct and optimal functionality. This message indicates an installation related problem. It is possible to define views of the DB2 catalog tables with a user-specified owner (example SYSIBM), in place of the actual owner, (SYSIBM). One cause of this error is the use of a user-specified owner, but the views of the DB2 catalog tables with the user-specified owner do not exist (have not been created). Check the CATOWNER parameter, FMN2POPI macro in the FMN2POPT. Check that views of the DB2 catalog tables, (for example SYSIBMVSYSTABLES) exist. See *File Manager Customization Guide*, "Preparing to customize FM/DB2", for more information.

---

**FMNDA013** Installation error. SELECT access to DB2 catalog table *DB2 catalog table name* is required, but is not available. Some FM/DB2 functions will be inoperative. Contact your Systems Programmer.

**Explanation:** File Manager DB2 attempted to access the DB2 catalog table *DB2 catalog table name*. The access failed. Access to *DB2 catalog table name* is essential to complete the current FM/DB2 function.

**User response:** File Manager DB2 component requires SELECT access to various DB2 catalog tables for correct and optimal functionality. This message indicates an installation problem; specifically that the DB2 authid used by the FM/DB2 user does not have SELECT access to the DB2 catalog table *DB2 catalog table name*. See *File Manager Customization Guide*, "Preparing to customize FM/DB2", and to point 8 in "Grant access to the DB2 catalogs", for more information. SELECT access to *DB2 catalog table name* needs to be GRANTED to the FM/DB2 user who encountered the error.

---

**FMNDA014** Installation error. Access to column *column name* in DB2 catalog table *DB2 catalog table name* is required, but is not available. Some FM/DB2 functions will be inoperative. Contact your Systems Programmer.

**Explanation:** File Manager DB2 attempted to access column *column name* of DB2 catalog table *DB2 catalog table name*. The access failed. SELECT access to column *column name* of *DB2 catalog table name* is essential to complete the current FM/DB2 function.

**User response:** File Manager DB2 component requires access to various DB2 catalog tables for correct and optimal functionality. This message indicates an installation related problem, specifically that the DB2 authid used by the FM/DB2 user does not have SELECT access on column *column name* in DB2 catalog table *DB2 catalog table name*. See *File Manager Customization Guide*, Chapter 12, "Preparing to customize FM/DB2", and to point 8 in the checklist "Grant access to the DB2 catalogs - required". SELECT access to column *column name* of *DB2 catalog table name* needs to be GRANTED to the FM/DB2 user who encountered the error.

---

**FMNDA020** REQUIRED, BROWSE AUDITED

**Explanation:** Auditing is required, browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA021** REQUIRED, BROWSE NOT AUDITED

**Explanation:** Auditing is required, browse functions are not subject to audit. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA022** REQUIRED, SMF, BROWSE AUDITED

**Explanation:** Auditing is required, and auditing records are written to SMF, browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA023 REQUIRED, SMF, BROWSE NOT AUDITED**

**Explanation:** Auditing is required, and auditing records are written to SMF, browse functions are not subject to audit. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA024 None**

**Explanation:** FM/DB2 component does not write audit records. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA025 SAF-RULE CONTROLLED**

**Explanation:** Auditing within FM/DB2 is controlled using SAF rules, defined using a security product such as RACF. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA026 SAF-RULE CONTROLLED, AUDITING NOT ALLOWED**

**Explanation:** Auditing within FM/DB2 is controlled using SAF rules, defined using a security product such as RACF. These rules specifically prevent the writing of audit records by FM/DB2. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA027 DEMAND, BROWSE AUDITED**

**Explanation:** Demand auditing is in effect, browse functions are subject to audit. Demand auditing means that an audit report is automatically printed at the end of the current editor session. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA028 DEMAND, BROWSE NOT AUDITED**

**Explanation:** Demand auditing is in effect, browse functions are not subject to audit. Demand auditing means that an audit report is automatically printed at the end of the current editor session. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA030 OPTIONAL, OFF, BROWSE AUDITED**

**Explanation:** Auditing is optional and initially off, browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA031 OPTIONAL, OFF, BROWSE NOT AUDITED**

**Explanation:** Auditing is optional and initially off, browse functions are not subject to audit. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA032 OPTIONAL, PROFILE, BROWSE AUDITED**

**Explanation:** Auditing is optional and the current value is set based on the user ISPF profile. Browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module or externally, using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA033 OPTIONAL, PROFILE, BROWSE NOT AUDITED**

**Explanation:** Auditing is optional and the current value is set based on the user ISPF profile. Browse functions are not subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information.



This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA034 OPTIONAL, SMF, OFF, BROWSE AUDITED**

**Explanation:** Auditing is optional and audit records are written to SMF. The audit option is initially off, and browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA035 OPTIONAL, SMF, OFF, BROWSE NOT AUDITED**

**Explanation:** Auditing is optional and audit records are written to SMF. The audit option is initially off, browse functions are not subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA036 OPTIONAL, SMF, PROFILE, BROWSE AUDITED**

**Explanation:** Auditing is optional and audit records are written to SMF. The current value for the audit option is set based on the user ISPF profile, browse functions are subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA037 OPTIONAL, SMF, PROFILE, BROWSE NOT AUDITED**

**Explanation:** Auditing is optional and audit records are written to SMF. The current value for the audit option is set based on the user ISPF profile, browse functions are not subject to audit. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA038 DEMAND, SMF, BROWSE AUDITED**

**Explanation:** Demand auditing is in effect, audit records are written to SMF, browse functions are subject to audit. Demand auditing means that an audit report is automatically printed at the end of the current editor session. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA039 DEMAND, SMF, BROWSE NOT AUDITED**

**Explanation:** Demand auditing is in effect, audit records are written to SMF, browse functions are not subject to audit. Demand auditing means that an audit report is automatically printed at the end of the current editor session. Auditing options are specified in either the FMN2POPT module, or externally using a security product such as RACF. See *File Manager Customization Guide* for more information. This message is displayed on the "DB2 connection Information" pop-up panel.

**User response:** No action required.

---

**FMNDA040 Recovered from DB2 abend (short).  
FM/DB2 has recovered from an abend in  
DB2. The FM/DB2 function that was  
executing when the DB2 abend occurred  
has been terminated. (long)**

**Explanation:** A DB2 abend occurred during processing for the current function. The File Manager subtask responsible for connection to DB2 has been terminated, and a new subtask established. Any uncommitted changes made by the FM/DB2 function prior to the abend will have been backed out.

**User response:** Document information about the function being used when the abend occurs. If the problem occurs again notify your System Programmer. If there is no DB2-related problem that might explain the abend, contact IBM support.

---

**FMNDA100 Alloc. error -unit (short).The attempt to  
allocate a temporary data set for the  
SQL statement failed. UNIT unit is  
invalid. Check the temporary data set  
allocation option values. (long).**

**Explanation:** File Manager attempted to allocate a temporary data set, in which to store SQL or some other information. The allocation attempt failed, the most likely explanation is that the UNIT parameter specified on the "Set Temporary Data Set Allocation Options" panel is invalid. This system option panel is accessed using 0.0.8 from the FM/DB2 main menu panel.

**User response:** Check the value specified for the UNIT parameter on the "Set Temporary Data Set Allocation Options" panel. Remove any value and retry the operation. If this resolves the problem, contact your system's programmer for advice on valid/invalid UNIT values.

---

**FMNDA997 \*\*\*\* Limit of Rows Retrieved \*\*\*\***

**Explanation:** This message appears at the bottom of an FM/DB2 editor session, when a row count value (example 100) was specified on the editor function entry panel, and FM/DB2 read that many rows into the editor session without reaching the end of the DB2 object.

**User response:** No action required. Informational message.

---

**FMNDA998 Internal Logic Error (*module name*) - *message***

**Explanation:** This is an internal error message, indicating a problem with the processing of the DB2 attachment.

**User response:** Contact IBM support.

---

**FMNDB000 JESCT not available (short). JESCT control block currently not available for DB2 subsystem selection. (long).**

**Explanation:** This is an internal error. FM/DB2 attempted to access the JESCT however the pointer was zero.

**User response:** Contact IBM support.

---

**FMNDB001 No DB2 subsystems (short). No DB2 Subsystems have been defined on this system. File Manager/DB2 can not run on this system. (long).**

**Explanation:** FM/DB2 could not find any DB2 systems defined on the current z/OS system.

**User response:** If there are DB2 systems defined on the current z/OS system, contact IBM support.

---

**FMNDB002 SSID DB2 SSID not matched (short). No DB2 Subsystems matching DB2 SSID are defined on this system. (long).**

**Explanation:** This message may be issued during DB2 subsystem selection when a name with a wildcard (example DSN\*) is entered in the DB2 SSID field on the FM/DB2 main menu. No matching DB2 systems were found.

**User response:** No action required. Informational message. Clear the DB2 SSID entirely to show all DB2 systems.

---

**FMNDB003 DB2 SSID not defined to z/OS (short) . DB2 Subsystem/Group DB2 SSID is not defined to the local z/OS system. (long).**

**Explanation:** DB2 system DB2 SSID is not defined on the local z/OS system. This message may be issued in response to an attempt to change the currently connected DB2 system using a command like SSID XXXX.

**User response:** Check that DB2 SSID is correctly specified. Correct the name and try again.

---

**FMNDB004 SSID DB2 SSID not active (short). DB2 subsystem/group DB2 SSID is not currently active. (long).**

**Explanation:** The DB2 system or group DB2 SSID is defined on the local z/OS system but is inactive (stopped).

**User response:** FM/DB2 cannot connect to inactive DB2 systems. Determine the reason why the DB2 system is inactive. When the DB2 system is started, attempt the connection again.

---

**FMNDB005 Already connected (short). FM/DB2 is currently connected to DB2 system DB2 SSID. (long).**

**Explanation:** FM/DB2 is already connected to DB2 system DB2 SSID. This message may be issued in response to an attempt to change the currently connected DB2 system using a command like SSID XXXX.

**User response:** None if DB2 SSID was correctly specified. Otherwise, check the DB2 SSID, make appropriate corrections, and try again.

---

**FMNDB006 Cannot connect to DB2 DB2 SSID, RRSF function RC &RC. Reason reason code.**

**Explanation:** A call to the DB2 RRSF attachment failed. DB2 SSID is the currently connected DB2 system; *function* is the failing RRSF function and *reason* is the failing reason code.

**User response:** This error indicates an installation error. Confirm that the RRSF attachment is required. You will typically find that the CAF attachment meets all your requirements. The DB2 attachment used by FM/DB2 is specified in the FMN2POPT module. See *File Manager Customization Guide* for a detailed explanation. Ensure that the appropriate DB2 interface module (DSNRLI) is accessible to FM/DB2. If these actions fail to resolve the problem, contact IBM support.

---

**FMNDB007 A DB2 Subsystem has not been specified.**

**Explanation:** A DB2 system has not been specified. FM/DB2 must connect to a DB2 system before it can perform useful work.

**User response:** Use the "DB2 SSID" field on the FM/DB2 main menu to specify the name of a DB2 system.

---

**FMNDB008 Subsystem DB2 SSID does not identify a uniquely active DB2 subsystem**

**Explanation:** A DB2 SSID value was specified, but it does not uniquely identify a DB2 system. An example is DSN\*.

**User response:** Specify an unambiguous value.

---

**FMNDB009 DB2 subsystem DB2 SSID is not currently active on this system.**

**Explanation:** The specified DB2 SSID value *DB2 SSID* is inactive.

**User response:** Take action to start the DB2 system. When the DB2 system is active, retry the operation.

---

**FMNDB010 Row Row value 1 of Row value 2**

**Explanation:** This message is displayed on various selection lists, including the DB2 subsystem selection panel. *Row value 1* is the first row shown on the display and there are a total of *Row value 2* rows available for display.

**User response:** No action required. Informational message.

---

**FMNDB011 Invalid selection (short). Enter "S" or "/" to select the required DB2 subsystem. (long).**

**Explanation:** A character other than "S" or "/" was entered against an entry on the DB2 subsystem selection panel. The only valid characters for selecting an entry are "S" or "/".

**User response:** Use either "S" or "/" to select the required entry.

---

**FMNDB012 SSID DB2 SSID not active (short). Selected DB2 subsystem DB2 SSID is not currently active on this system. (long).**

**Explanation:** An attempt was made to select DB2 system *DB2 SSID* from the DB2 subsystem selection panel. This DB2 system is not currently active.

**User response:** Determine why the DB2 system is inactive and take action to start it. When the DB2

system is active, retry the operation.

---

**FMNDB013 Selection terminated (short) DB2 subsystem selection was terminated with the EXIT PF key command. File Manager DB2 is not currently connected to any DB2 subsystem. (long)**

**Explanation:** The user pressed the EXIT *PF key* on the DB2 subsystem selection menu without making any selection. The FM/DB2 main menu is re-displayed. FM/DB2 is not connected to any DB2 system.

**User response:** No action required. Informational message. It is necessary to connect to a DB2 system prior to performing any FM/DB2 functions.

---

**FMNDB014 Display refreshed (short). List of DB2 Subsystems has been refreshed using current information. (long).**

**Explanation:** The user issued the REFRESH primary command on the DB2 subsystem selection list panel. The list of DB2 systems displayed is refreshed.

**User response:** No action required. Informational message.

---

**FMNDB015 SSID DB2 SSID displayed (short). DB2 Subsystems matching DB2 SSID are displayed. (long).**

**Explanation:** The user issued a SHOW *DB2 SSID* command on the DB2 subsystem selection list panel. The list of DB2 systems that match the SSID specification are displayed. The SSID value specified may include wild cards, example DSN\*.

**User response:** No action required. Informational message.

---

**FMNDB016 Command not active (short). The command to change the DB2 subsystem is not available from this panel. (long).**

**Explanation:** A command to change the currently connected DB2 SSID was issued on a panel where the command is not available.

**User response:** The currently connected DB2 SSID can only be changed when no FM/DB2 function is active. Return to a function-entry, or menu panel, and reissue the command.

---

**FMNDB017 SSID name required (short). Enter the DB2 subsystem name that FM/DB2 should connect to. (long).**

**Explanation:** A command to change the currently connected DB2 system was issued without an operand.

**User response:** The command to change the currently connected DB2 system requires an operand, the DB2

SSID of the DB2 system to which connection is desired. Reissue the command with the required DB2 system SSID as the operand.

---

**FMNDB018 Invalid remote server (short). Remote server *DB2 server name* is not a DB2 UDB for z/OS system. Connection to remote servers that are not DB2 UDB for z/OS servers is not supported. (long).**

**Explanation:** A DB2 server name was entered in the location field on a FM/DB2 function entry panel. While the DB2 server name is defined as a remote DB2 server at the local DB2 system, this server is not a DB2 UDB for z/OS system. FM/DB2 only supports remote connections to DB2 UDB for z/OS servers.

**User response:** Connection to this remote DB2 server is not supported. Specify another name.

---

**FMNDB019 Version *DB2 version* invalid (short). The remote DB2 version/release is *DB2 version*. Connection is supported for DB2 Version 6 and later systems only. (long).**

**Explanation:** A DB2 server name was entered in the location field on a FM/DB2 function entry panel. The version of the remote DB2 system is *DB2 version*. Connection to this version of DB2 is not supported.

**User response:** Connection to this remote DB2 server is not supported. Specify another name.

---

**FMNDB020 Operating System is unsupported. Can not run File Manager/DB2.**

**Explanation:** This is an internal error. During MVS token initialization an unsupported version of z/OS was detected. It is not possible to run FM/DB2 against this version of z/OS, or its predecessors.

**User response:** Ensure that the host operating system is at a level specified in the Program Directory. If you believe that the host operating system is at a supported level, contact IBM support.

---

**FMNDB021 Error in function *Callable Service Routine*, Return code *return code*.**

**Explanation:** This is an internal error. A call to *function* failed with return code *return code*.

**User response:** Contact IBM support.

---

**FMNDB022 DB2 Subsystem not set (short). Error invoking File Manager/DB2. DB2 Subsystem has not been set. (long).**

**Explanation:** An attempt was made to run FM/DB2, without correctly specifying a DB2 SSID name, or without first connecting to a DB2 system.

**User response:** If the message occurs in batch, check

that the DB2 SSID value is correctly specified in the JCL. If this fails to resolve the problem, start FM/DB2 online and regenerate the batch JCL. If the batch job still fails contact IBM support. If the message occurs online, return to the FM/DB2 main menu and enter the name of a valid DB2 SSID in the DB2 SSID field, press enter to connect.

---

**FMNDB023 Cannot connect to DB2 *DB2 SSID*, CAF function *RC return code*, Reason *reason code*.**

**Explanation:** FM/DB2 attempted to call the DB2 CAF interface with function *function*. The call failed with return code *return code* and reason code *reason code*.

**User response:** This message usually indicates an installation or set up problem. The most likely causes are:

1. Not binding the FM/DB2 plan (FMN2PLAN) by default.
2. Specifying an incorrect DB2 plan name in the FMN2POPT module.

See *File Manager Customization Guide* for more information.

---

**FMNDB024 Unable to load DB2 Interface module *module name*. Abend Code *abend code-reason code*. Check STEPLIB/LINKLIST for DB2 load libraries.**

**Explanation:** FM/DB2 attempted to load the DB2 interface module *module name*. The load failed with abend code *abend code* and reason *reason code*.

**User response:** This is probably a customization or setup problem. If the Abend is 806 (module not found):

1. Check that the DB2 load library has been correctly specified in the FMN2SSDM macro for the DB2 system in question.
2. If the FMN2POPT does not include the DB2 load library names for the DB2 system, check any applicable STEPLIB/JOBLIB and LINKLIST for the DB2 load library. The DB2 load library must reside in a library that is accessible using the standard search order for the LOAD macro.

For other abends refer to point (1) as a starting point. If this fails to resolve the problem, contact IBM support.

---

**FMNDB025 Not currently connected to a DB2 subsystem.**

**Explanation:** FM/DB2 is not currently connected to any DB2 subsystem.

**User response:** No action required. Informational message. It will be necessary to connect to a DB2 system prior to performing any FM/DB2 functions.



---

**FMNDB026** Subsystem: *DB2 SSID*, DB2 release: *DB2 VRM indicator*.

**Explanation:** FM/DB2 is connected to DB2 system *DB2 SSID*. The version of this DB2 system is *DB2 VRM indicator*.

**User response:** No action required. Informational message. issued in an FM/DB2 batch job.

---

**FMNDB027** FM/DB2 plans: *Plan name 1*, *Plan name 2*

**Explanation:** The FM/DB2 plan names are *Plan name 1* and *Plan name 2*.

**User response:** No action required. Informational message. issued in an FM/DB2 batch job.

---

**FMNDB028** Description: *user specified description*.

**Explanation:** This message *user specified description* appears in the "About DB2" popup panel. The *user specified description* is the value specified in the FMN2SSDM macro, DESC parameter for the appropriate DB2 system.

**User response:** No action required. Informational message.

---

**FMNDB029** *DB2 SSID* executing DB2 level *DB2 level 1*. Minimum supported level is *DB2 level 2*.

**Explanation:** This message is issued when an attempt is made to connect to a DB2 system at an unsupported version/maintenance level. The level of DB2 system *DB2 SSID* is *DB2 level 1*. The minimum supported level is *DB2 level 2*.

**User response:** Connection to the DB2 system is not supported. See *File Manager Customization Guide* and *File Manager User's Guide and Reference for DB2 Data* for DB2 data for information on supported DB2 versions, for the version of FM/DB2 in use.

---

**FMNDB030** DB2I unavailable (short). Unable to start DB2I. Check STEPLIB/LINKLIST for DB2 libraries. (long).

**Explanation:** A ISPF PQUERY service for panel DSNEPRI was issued, the request failed.

**User response:** This error indicates an installation or setup problem. Ensure that the DB2 libraries are available to the FM/DB2 user. The recommended way to do this is to code the DB2 libraries in the FMN2SSDM macro entry for each DB2 system that will be accessed by FM/DB2. See *File Manager Customization Guide* for more information.

---

**FMNDB031** SQL ID not authorized (short). You are not authorized to use the SQL user ID *DB2 authid* on DB2 Subsystem *DB2 SSID*. (long).

**Explanation:** An attempt was made to change the current SQLID on DB2 system *DB2 SSID* to *DB2 authid*. The attempt failed. The usual reason for this is that the FM/DB2 user is not authorized to use *DB2 authid*.

**User response:** Consult with either the DB2 or Security Administrator as to the reason why access to *DB2 authid* is not available.

---

**FMNDB032** You are not authorized to use the SQL user ID *DB2 authid*.

**Explanation:** An attempt was made to change the current SQLID to *DB2 authid*. The attempt failed. The usual reason for this is that the FM/DB2 user is not authorized to use *DB2 authid*.

**User response:** Consult with either the DB2 or Security Administrator as to the reason why access to *DB2 authid* is not available.

---

**FMNDB033** Auditing: *Audit status* :

**Explanation:** This message is used to display the audit status for the currently connected DB2 system, and appears on the "About DB2" pop-up panel.

**User response:** No action required. Informational message.

---

**FMNDB034** No DB2 subsystem with name *DB2 SSID*. CAF function RC return code, Reason reason code.

**Explanation:** A call to the CAF interface, function *function* for DB2 system *DB2 SSID* failed with RC return code and reason *reason code*. The reason is that the nominated DB2 system does not exist.

**User response:** Check the DB2 system name and try again.

---

**FMNDB035** DB2 group/subsystem *DB2 SSID* is not active, CAF function RC return code, Reason reason code.

**Explanation:** A call to the CAF interface, function *function* for DB2 system *DB2 SSID* failed with RC reason code and reason *reason code*. The reason is that the nominated DB2 system is not active.

**User response:** Start the DB2 system. Retry the operation.

---

**FMNDB036** **Not authorized to connect to DB2 SSID, CAF function** *function* **RC return code, Reason** *reason code*.

**Explanation:** A call to the CAF interface, function *function* for DB2 system *DB2 SSID* failed with **RC return code** and reason *reason code*. The likely reason is that the FM/DB2 user is not authorized to connect to the nominated DB2 system.

**User response:** Consult with either the DB2 or Security Administrator as to the reason why the FM/DB2 user is not authorized to connect to the DB2 system *DB2 SSID*.

---

**FMNDB037** **FM/DB2 not installed on DB2 SSID, CAF function** *function* **RC return code, Reason** *reason code*.

**Explanation:** A call to the CAF interface, function *function* for DB2 system *DB2 SSID* failed with **RC return code** and reason *reason code*. The reason is that FM/DB2 has not been installed on DB2 system *DB2 SSID*.

**User response:** Verify that FM/DB2 is installed on DB2 system *DB2 SSID*. Retry the operation.

---

**FMNDB038** **Unable to load options module** *module name*. **Probable installation error.**

**Explanation:** FM/DB2 attempted to load module *module name*. The attempt failed. The cause is an installation error; the File Manager load library is not available to the FM/DB2 user.

**User response:** Check the allocation of the FM/DB2 load library using, for example, 'TSO ISRDDN&' (under ISPF). Ensure that *module name* is located in a load library accessible to the FM/DB2 user.

---

**FMNDB039** **FMN2POPI module invalid (short). The internal structure of FMN2POPT is invalid. Probable installation error. (long).**

**Explanation:** FM/DB2 loaded the FMN2POPT module, the contents are corrupt and unusable.

**User response:** The FMN2POPT module was assembled using an older version of FM/DB2. Reassemble the FMN2POPT module, paying attention to the SYSLIB statements in the JCL, to ensure the correct versions of the FM/DB2 macros are used. Retry the operation.

---

**FMNDB040** **SSID DB2 SSID not available (short). Installation settings prevent the selection of DB2 subsystem/group DB2 SSID. (long).**

**Explanation:** An attempt was made to connect to DB2 system *DB2 SSID*. This DB2 system is marked "Unavailable" in the FMN2POPT installation module.

The DB2 system cannot be used.

**User response:** Select another DB2 system.

---

**FMNDB041** **Incompatible connection already active, CAF function, RC return code, Reason** *reason code*.

**Explanation:** FM/DB2 attempted to call the CAF interface, function *function*. An error occurred, **RC return code** and Reason *reason code*. The cause is an incompatibility (release level mismatch) between the DB2 and call attachment code.

**User response:** This is an installation error. Check the specification of the DB2 libraries in the FMN2POPT, FMN2SSDM macro for the appropriate DB2 system, with attention to the Version/maintenance level of these libraries compared with the Version/maintenance level of the DB2 system.

---

**FMNDB042** *DB2 SSID Release Minimum Release (short). DB2 SSID executing DB2 level Release. The minimum supported level of DB2 for this release of File Manager is Minimum Release. FM/DB2 may operate successfully with DB2 Version 8, however no support will be provided for any Version 8 specific problems that may be encountered.*

**Explanation:** FM/DB2 connected to *DB2 SSID* which is at version and release *Release*. The minimum supported DB2 version/release for this version of FM/DB2 is *Minimum Release*, which is greater than *Release*.

**User response:** No action required. Informational message. FM/DB2 should operate without issues. However should a problem be encountered that is specific to DB2 version 8, no support will be available.

---

**FMNDB043** *DB2 SSID Release Maximum Release (short). DB2 SSID executing DB2 level Release. This version and release of File Manager does not currently support connection to DB2 Maximum Release (or later) subsystems.*

**Explanation:** An attempt was made to connect to *DB2 SSID* which is at version and release *Release*. The maximum supported DB2 version/release for this version of FM/DB2 is *Maximum Release*, which is less than *Release*. The connection is not established and the DB2 system cannot be accessed. All versions of software are designed to work with a limited set (of version and release levels) of other software.

**User response:** Contact your IBM representative for information about more recent versions of FM/DB2 which may support the DB2 version/release of *DB2 SSID*.

---

**FMNDB044 Communications error (short). FM/DB2 encountered an SQL error *SQL error code* attempting to access the DB2 system at *DB2 location name*. This indicates that the remote DB2 system is not available, or that there was a security related problem. (long).**

**Explanation:** FM/DB2 attempted to connect to remote DB2 server *DB2 location name*. The connection failed with *SQLCODE SQL error code*.

**User response:** Look up *SQL error code* in the DB2 messages and codes manual and take the action indicated. This error indicates a set up problem. One possibility is incorrect DRDA definitions for DB2 location name at the local DB2 server.

---

**FMNDB045 Not defined.**

**Explanation:** A location nickname was not defined in the FMN2POPT module.

**User response:** Check the FMN2SSDM definitions in the FMN2POPT module and add the location nickname to the appropriate entry.

---

**FMNDB046 Defined but no location specified.**

**Explanation:** A location nickname was specified, but no location, to which the nickname refers, was specified.

**User response:** Check the FMN2SSDM macro for the currently connected DB2 system. Ensure that both a location and location nickname are specified.

---

**FMNDB047 Authorization error (short). FM/DB2 encountered an SQL error (-725) attempting to access the DB2 system at *Remote location name*. This can occur when the user has changed the SQLID at the local DB2 system, but the user does not have authority to use this SQLID at the remote DB2 system. (long).**

**Explanation:** Refer to the long message.

**User response:** Ensure that the user has access to the remote DB2 system *Remote location name* using the currently set DB2 SQLID.

---

**FMNDB048 FMN2DATA load failed (short). Unable to load FMN2DATA module. Probable installation error. (long).**

**Explanation:** FM/DB2 attempted to load data module FMN2DATA. The attempt failed. FM/DB2 cannot operate without this module.

**User response:** This is a customization or set up problem. Check that FMN2DATA is present in the load

libraries accessible to the FM/DB2 user. This module is normally located in the SFMNMOD1 library.

---

**FMNDB049 FMN2DENU load failed (short). Unable to load FMN2DENU module. Probable installation error. (long).**

**Explanation:** FM/DB2 attempted to load data module FMN2DENU. The attempt failed. FM/DB2 cannot operate without this module

**User response:** This is a customization or setup problem. Check that FMN2DENU is present in the load libraries accessible to the FM/DB2 user. This module is normally located in the SFMNMOD1 library.

---

**FMNDB050 ATTACH of FM/DB2 subtask program failed with return code *return code*.**

**Explanation:** FM/DB2 attempted to attach the subtask responsible for DB2 access. The attempt failed with *RC return code*. FM/DB2 cannot operate without the subtask for consistency.

**User response:** This is an internal error. Retry the operation. If the problem persists check for installation related problems and contact IBM support.

---

**FMNDB051 Communications error (*SQLCODE=SQL error code*) accessing DB2 SSID.**

**Explanation:** FM/DB2 attempted to access *DB2 SSID* and received a communications error *SQL error code*.

**User response:** Look up *SQL error code* in the DB2 messages and codes manual and take the action indicated.

---

**FMNDB052 DB2 server *server name* is not a DB2 UDB for z/OS server, code=*return code*.**

**Explanation:** FM/DB2 (in batch) connected to DB2 server *server name*. The connect information indicates that the DB2 server is not a DB2 UDB for z/OS server. Connection is only supported to DB2 UDB for z/OS servers.

**User response:** Specify the name of a DB2 UDB for z/OS server only.

---

**FMNDB053 SET DECFLOAT ROUNDING MODE failed with return code *return code*.**

**Explanation:** FM/DB2 attempted to set the DECFLOAT ROUNDING MODE, the attempt failed with return code *return code*.

**User response:** Check that the DB2 system is operational. If the problem persists contact IBM support.

---

**FMNDB054 SSID DB2 SSID not defined (short).** There is no definition (FMN2SSDM macro entry) for DB2 subsystem or group *DB2 SSID* in the FM/DB2 installation module (FMN2POPT). Contact the person who installed FM/DB2. (long).

**Explanation:** The FMN2POPT installation module is used to specify the DB2 systems that FM/DB2 can connect to. The *File Manager Customization Guide* recommends defining an FMN2SSDM macro entry for every DB2 system that FM will connect to. The FMN2POPI macro includes a CONNECT option, the default setting is DEFINED. When CONNECT=DEFINED is in effect, FM/DB2 will only attempt connection to DB2 systems that have an FMN2SSDM entry in the FMN2POPT. An attempt to connect to a DB2 system with no FMN2SSDM entry results in this error.

**User response:** There are two usual approaches for resolving this error:

1. Add an FMN2SSDM macro entry for every DB2 system that FM/DB2 will access to the FMN2POPT, as recommended in the *File Manager Customization Guide*.
2. Specify CONNECT=ANY in the FMN2POPI macro in the FMN2POPT. While this will allow FM/DB2 to attempt connection to ANY DB2 system, it does not necessarily remove the need to define an FMN2SSDM macro entry for every DB2 system that FM/DB2 will connect to. See the *File Manager Customization Guide* for detailed setup information.

---

**FMNDB055 Selection canceled (short). DB2 subsystem selection was canceled. Connection to the previously connected DB2 system has been re-established.**

**Explanation:** The user exited the DB2 subsystem selection panel without selecting a DB2 subsystem or group

**User response:** No action required. This is an informational message.

---

**FMNDB056 Selection canceled (short). DB2 subsystem selection was canceled. File Manager DB2 is not currently connected to any DB2 subsystem.**

**Explanation:** The user exited the DB2 subsystem selection panel without selecting a DB2 subsystem or group. FM/DB2 is not currently connected to any DB2 subsystem or group.

**User response:** No action required. This is an informational message. It will be necessary to connect to a DB2 system prior to performing any FM/DB2 functions.

---

**FMNDB057 DB2 limits the output returned from a DB2 command. This limit has been reached and the output has been truncated.**

**Explanation:** A DB2 command that produced large amounts of output was entered. DB2 has limited the amount of output produced, resulting in truncation.

**User response:** No action required. This is an informational message. Refine the DB2 command to be more specific.

---

**FMNDB058 You cannot change the SQLID until FM/DB2 is connected to a DB2 subsystem or group.**

**Explanation:** FM/DB2 was not connected to any DB2 system, and the user typed a new value in the SQLID field on the FM/DB2 main menu. It is not possible to change the current SQLID without first being connected to some DB2 system.

**User response:** Change the DB2 SQLID back to the default value, typically the user TSO logon ID. Now enter a valid DB2 SSID in the DB2 SSID field and press enter to establish connection to the DB2 system. When the connection is successful, attempt to change the DB2 SQLID.

---

**FMNDB059 \*\* not defined in installation module.**

**Explanation:** This message appears in the DB2 subsystem selection display against any DB2 system that has no FMN2SSDM macro entry in the FMN2POPT.

**User response:** No action required. This is an informational message. Refer to *File Manager Customization Guide* for detailed information about how to code entries in the FMN2POPT module.

---

**FMNDB060 Unable to load DB2 Interface module *name*. Abend Code *abend code*-reason *code*. Check STEPLIB/LINKLIST for DB2 load libraries.**

**Explanation:** An FM/DB2 batch job attempted to load the DB2 interface module *name*. The LOAD abended with Abend code *abend code*, reason *reason code*.

**User response:** Check the STEPLIB or JOBLIB statement in the batch job. Ensure that the appropriate DB2 load library is included. If the batch job was generated using FM/DB2 online, the DB2 libraries are automatically included, as specified in the FMN2SSDM macro entry in the FMN2POPT for the appropriate DB2 system. This will not occur if there is no FMN2SSDM macro entry for the DB2 system, or if the DB2 libraries are not included in the FMN2SSDM macro.



---

**FMNDB061 Catalog table *table name* is missing.**

**Explanation:** An FM/DB2 batch job attempted to access DB2 catalog table *table name*. The access failed with SQLCODE-204 (object not found).

**User response:** If views of the DB2 catalog are in use (CATOWNER=xxxx in the FMN2POPI macro, FMN2POPT module, xxxx is not SYSIBM) then ensure that the appropriate view *xxxx.table name* has been created.

---

**FMNDB062 No select access to catalog table *table name*.**

**Explanation:** An FM/DB2 batch job attempted to access DB2 catalog table *table name*. The access failed with SQLCODE-551 (insufficient authority).

**User response:** Ensure that the DB2 authid associated with the batch job has SELECT access to table *table name*.

---

**FMNDB063 Cannot access column in catalog table *table name*.**

**Explanation:** An FM/DB2 batch job attempted to access column *column* in DB2 catalog table *table name*. The access failed with SQLCODE-206 error. The column *column* is not defined in table *table name*.

**User response:** If views of the DB2 catalog are in use (CATOWNER=xxxx in the FMN2POPI macro, FMN2POPT module, xxxx is not SYSIBM) then ensure that the appropriate view *xxxx.table name* has been created. Further, ensure that column *column* is included in view *xxxx.table name*.

---

**FMNDB064 DB2 Abend Code *abend code-reason code* accessing *name*. Notify your systems programmer.**

**Explanation:** A DB2 Abend occurred while running an FM/DB2 batch job. The DB2 Abend code is *abend code*, the reason code is *reason code* and the DB2 module that was accessed is *name*. The batch job ends and any uncommitted operations are backed out.

**User response:** Look up the DB2 Abend code and reason code in the *DB2 UDB for z/OS Messages and Codes*. In most cases this type of error indicates an error with the batch job (for example, the wrong DB2 libraries being specified). Check the specification of the DB2 libraries in the FMN2SSDM macro entry for the appropriate DB2 system (FMN2POPT module). See the *File Manager Customization Guide* for more information.) If the batch job was not generated using the appropriate FM/DB2 online function, use FM/DB2 to regenerate the batch JCL and retry the operation.

---

**FMNDB065 GEN command failed (short). The FM/DB2 GEN command failed - RC=*return code*. Please see your Systems Support staff for assistance. (long).**

**Explanation:** The SQL Reverse Engineering function (GEN command) failed with reason *return code*.

**User response:** Possible failures include space related abends (x37) for the data sets used by the GEN code. If this is the case there will be an associated abend issued. Respond to the Abend by deleting and recreating the data set with more space, and retry the operation.

---

**FMNDB066 No SSID parameter was passed to FMN2EXIN. The last connected DB2 subsystem, if any, is used. Check that the connected DB2 subsystem is, in fact, what was intended.**

**Explanation:** The REXX EXEC FMN2EXIN can be used to invoke FM/DB2 by an external call. The REXX EXEC requires various parameters, including the DB2 SSID of the DB2 system that FM/DB2 should connect to. This was not provided.

**User response:** Check the method used to invoke the FMN2INEX exec and ensure that a DB2 SSID is provided.

---

**FMNDB067 Invalid option code (short). The option code passed to FMN2EXIN is either invalid or not supported. The option code has been discarded. (long).**

**Explanation:** The REXX exec FMN2EXIN can be used to invoke FM/DB2 by an external call. The exec requires various parameters, including a function code that indicates which FM/DB2 function to run. The function code provided was invalid.

**User response:** The function codes that may be passed to FMN2EXIN are documented in the *File Manager Customization Guide*. Ensure that a supported function code is specified.

---

**FMNDB068 Command not active (short). The command to change the DB2 subsystem is not available when FM/DB2 is invoked remotely. (long).**

**Explanation:** FM/DB2 was invoked from an external application. In this situation it is not possible to change the currently connected DB2 SSID.

**User response:** No action required. Informational message.

---

---

**FMNDB069** Command not available (short). DB2 commands cannot be issued when FM/DB2 has been started remotely. (long).

**Explanation:** FM/DB2 was invoked from an external application. In this situation it is not possible to issue DB2 commands.

**User response:** No action required. Informational message.

---

**FMNDB070** Possible causes - Missing/invalid FMN2POPT module, eg invalid plan name.

**Explanation:** An FM/DB2 batch job encountered an error attempting to use the CAF attachment.

**User response:** The usual causes of this error are:

1. FM/DB2 is not installed on the target DB2 system.
2. The FMN2POPT module in use specifies an invalid plan name, perhaps the specified plan does not exist, or the plan exists but is invalid.

---

**FMNDB071** Current SQLID (short). The current SQLID is the value specified. (long).

**Explanation:** The SQLID command was issued to change the current SQLID. However the specified SQLID is already the current SQLID.

**User response:** No action required. Informational message.

---

**FMNDB072** SQLID value required (short). The SQLID command requires a value. Enter the new SQLID after the SQLID keyword, eg "SQLID FRANK". (long).

**Explanation:** The SQLID command was issued without an operand.

**User response:** Specify, for example, the desired SQLID after the SQLID command:

SQLID FRED

---

**FMNDB073** SQLID cmd not available (short). The SQLID command is not available from this panel. (long).

**Explanation:** The SQLID command was issued from a panel where the command is not supported.

**User response:** Return to a higher level panel , for example a function entry panel, or menu panel, and reissue the command.

---

**FMNDB074** UNICODE conversion error codepage CCSID 1 to codepage CCSID 2.

**Explanation:** In an FM/DB2 editor session of a Unicode encoded object, the conversion between CCSID CCSID 1 and CCSID CCSID 2 failed.

**User response:** One reason for this error is that the z/OS Unicode translation service for the specified CCSID pair has not been set up. Contact your System Programmer. If this does not solve the problem, contact IBM support.

---

**FMNDB075** SQLID = SQLID (short). The current SQLID has been changed to SQLID. (long).

**Explanation:** A command to change the current SQLID was issued. The command succeeded, the current SQLID is now SQLID.

**User response:** No action required. Informational message.

---

**FMNDB076** \*\*\* Rollback occurred. Transactions since start of session or last commit have been backed out. \*\*\*

**Explanation:** A DB2 rollback was issued. This message appears in audit log reports.

**User response:** No action required. Informational message.

---

**FMNDB077** A DB2 commit has been issued.

**Explanation:** A DB2 commit was issued. This message appears in audit log reports.

**User response:** No action required. Informational message.

---

**FMNDB078** UNICODE conversion error. UNICODE conversion error from codepage CCSID 1 to codepage CCSID 2. Return code *return code*, reason code *reason code* from CUNLCNV routine.

**Explanation:** In an FM/DB2 editor session of a Unicode-encoded object, the conversion between CCSID CCSID 1 and CCSID CCSID 2 failed. The CUNLCNV system service, used to perform the conversion, issued return code *return code* and reason code *reason code*.

**User response:** One reason for this error is that the z/OS Unicode translation service for the specified CCSID pair has not been set up. Contact your System Programmer. If this does not resolve the problem, contact IBM support.

---

**FMNDB079** **Change SSID first (short). An attempt to navigate to an FM/DB2 function was made whilst simultaneously changing the DB2 SSID. This is not supported. First change the DB2 SSID, and then navigate to the required function. (long).**

**Explanation:** Processing on the FM/DB2 main menu panel includes the capability to change the current SQLID by typing a new value in the SQLID field, followed by the user pressing enter to validate the change. The ISPF short cut prefix ('=') can be used to navigate to some other FM/DB2 function. However, the use of this short cut bypasses the normal panel processing, and is therefore not supported.

**User response:** The use of '=' is not supported within FM/DB2 online. See the *File Manager Customization Guide* for DB2 data. In situations where a change in SQLID is required to execute some FM/DB2 function, first change the SQLID, then navigate to the required function.

---

**FMNDB088** **Return code** *return code*, **reason code** *reason code* **from CUNLCNV routine.**

**Explanation:** A call to the z/OS translation service routine CUNLCNV failed with return code *return code*, reason code *reason code*.

**User response:** One reason for this error is that the z/OS Unicode translation service for the specified CCSID pair has not been set up. Contact your System Programmer. If this fails to resolve the problem contact IBM support.

---

**FMNDB091** **Invalid selection (short). Enter 'S' or '/' to select the required object type. (long).**

**Explanation:** An invalid character was entered against an entry in an object selection list. The only characters that may be used to select the entry are 'S' and '/'.

**User response:** Use one of the characters indicated to select the object.

---

**FMNDB092** **Invalid selection (short). Enter 'S' or '/' to select the required line command. (long).**

**Explanation:** An invalid character was entered against an entry in an object selection list. The only characters that may be used to select the entry are 'S' and '/'.

**User response:** Use one of the characters indicated to select the object.

---

**FMNDB093** **Invalid selection (short). Valid selections are 'S', '/', 'A', 'D', 'U', 'UO' and 'UW'. (long).**

**Explanation:** This command is issued by the Basic SQL Prototyping function. An invalid command was

entered in the 'S' (Selection) field. The only valid characters that may be used are as shown in the long message.

**User response:** Use one of the character or characters shown in the long message to select the column.

---

**FMNDB098** **DB2 SSID; executing DB2 level** *release*. **Maximum supported level is** *Maximum release*.

**Explanation:** FM/DB2 connected to *DB2 SSID*, which is at DB2 version or release *release*. The maximum supported DB2 version or release for the current version of FM/DB2 is *Maximum release*, which is less than *release*. The connection to this DB2 system is not supported.

**User response:** Contact you IBM representative for information about which versions of FM/DB2 support DB2 systems at version or release *release*.

---

**FMNDB099** **Invalid DB2 SSID (short). The DB2 SSID is too long. Specify a 1-4 character value. (long).**

**Explanation:** A command to change the currently connected DB2 system was issued, however the value entered for the desired DB2 system is too long. Valid DB2 SSIDs are 1-4 characters in length.

**User response:** Check the DB2 SSID that was specified; make corrections. Retry the operation.

---

**FMNDB100** **SQLCODE** *SQLCODE*. **Statement type (short). SQLCODE** *SQLCODE* **was encountered while issuing a** *Statement type statement*.

**Explanation:** An error was encountered during execution of a *Statement type* SQL statement. The failing SQLCODE is *SQLCODE*.

**User response:** Look up the failing SQLCODE in the *DB2 UDB for z/OS Messages and Codes* manual. If the message was issued when processing a user-specified SQL statement, make adjustments to the statement and retry the operation.

---

**FMNDB101** *SQL error message*

**Explanation:** An FM/DB2 batch function encountered an error during execution of an SQL statement. The formatted SQL error messages is shown in *SQL error message*.

**User response:** Look up the failing SQLCODE in the *DB2 Messages and Codes* manual. If the message was issued when processing a user-specified SQL statement, make adjustments to the statement and retry the operation.

---

**FMNDB107 Remote server not found (short).** FM/DB2 encountered an SQL error *SQLCODE* attempting to access the DB2 system at *DB2 remote server*. This might indicate that the remote DB2 system is not available or does not exist. Check the definitions in *SYSIBM.LOCATIONS*. (long).

**Explanation:** FM/DB2 attempted to connect to a remote DB2 server name, This may have been entered in the location field of various FM/DB2 function entry panels. The connection attempt failed with *SQLCODE*. The connection is not established and no operations at the remote DB2 server are possible until the reason for the connection failure is resolved.

**User response:** Look up *SQLCODE* in the *DB2 UDB for z/OS Messages and Codes* manual and follow the recommended course of action. This error can occur in the following situations (non-exhaustive list):

1. DRDA definition problems.
2. The remote DB2 system does not exist, is not active, is not available.
3. Communication problems.

---

**FMNDB108 Different DB2 release (short).** The release level of the local DB2 system is different to the release level of the DB2 system which you have just accessed. The choice of DB2 object types has been refreshed to show those object types supported on the remote or local system. Press ENTER again to get the requested list. (long).

**Explanation:** This message is issued by the FM/DB2 Object list utility when the user changes the value in the location field on the function entry panel and presses ENTER. FM/DB2 attempts to connect to the new location value (or to reconnect to the local server, if the new value is blank). When the DB2 version or release for the previously connected DB2 system is different to the newly connected DB2 system, it is possible that the list of DB2 object types requires changes. The object list request is processed in two steps:

1. Updating the list of objects and showing this message.
2. Displaying the list of objects for the selected object type.

**User response:** Ensure that the requested object type is still valid at the new DB2 system. Press **Enter** again to see the information for the requested object types.

---

**FMNDB109 No matching locations (short).** The location name specification does not match any locations defined to the local DB2 server. (long).

**Explanation:** A DB2 server name, including wild cards, was entered in the Location field on the FM/DB2 Object List utility function entry panel. There are no DB2 server names that match the wild card specification.

**User response:** Check the location specification and retry the operation. Use \* in the location field to list all possible locations.

---

**FMNDB110 Internal error (ABEND) *Abend code*.** Function terminated.

**Explanation:** File Manager DB2 detected a serious internal error and issued an internal ABEND to prevent further processing. The internal abend code is *Abend Code*

**User response:** This is an internal error. The list of File Manager internal abend codes is not documented for external use. Record details of the circumstances that lead to the Abend, including the *Abend code*, and contact support.

---

**FMNDB118 Function active (short).** The command to change the DB2 subsystem is not available while an FM/DB2 function is in progress.

**Explanation:** A command to change the currently connected DB2 SSID (for example SSID XXXX) was issued on a panel where the command is not available. The reason for this is that an FM/DB2 function is active.

**User response:** Exit the current FM/DB2 function by returning to a function entry panel, or menu panel. Reissue the command to change the DB2 system.

---

**FMNDB119 *DB2 authid* not authorized (short).** You are not authorized to use the *DB2 authid* on DB2 Subsystem *DB2 SSID*. (long).

**Explanation:** An attempt was made to change the current SQLID, using the SQLID command. The user is not authorized to use DB2 authid *DB2 authid*. The attempt to change the current SQLID fails, the existing value for SQLID is retained.

**User response:** The rules governing the use of DB2 authids can be complex, depending on whether an external security server is used to control DB2 authorizations and whether a DB2 authorization exit is in use. In most cases a user needs SYSADM authority or similar to use other SQLIDs. Contact either your DB2 System Administrator, or the site Security Administrator for assistance.



---

**FMNDB145 Recursive alias (short). The object name entered is an alias that refers to an alias defined at the current server, which is not permitted. Specify an alias name that refers to an object, that is, not an alias. (long).**

**Explanation:** A DB2 object name was entered in the Owner or Name fields on an FM/DB2 function entry panel. The values entered refer to an ALIAS defined at the local DB2 server, however this ALIAS refers to another ALIAS. Recursive ALIASes are not supported.

**User response:** An ALIAS that refers to a DB2 object (Table/View/Synonym) is supported. Resolve the ALIAS to the point where the name entered refers to an actual object and specify that value. Alternatively, specify the target object name directly.

---

**FMNDB146 Large table mode - initial fetch of *count* rows.**

**Explanation:** This message is issued by the FM/DB2 editor, when the data is first displayed. It shows the number of rows that have been fetched from DB2 and loaded into the current editor session, and also indicates that the editor is operating in "large" mode. Large editor mode is explained at length in the Chapter 4, "Viewing and changing DB2 data," on page 95. Large editor mode is selected when the user enters 0 (also \*, ALL) in the "Row count" field of an FM/DB2 function that uses the editor to display the result table.

**User response:** No action required. Informational message. In Large editor mode the number of rows in the result table is not available until the user scrolls to the end of the DB2 object. The *count* value in the message is approximately 3 times the number of rows that are displayed on a single screen, in TABL mode.

---

**FMNDB148 1 row fetched.**

**Explanation:** This message is issued by the FM/DB2 editor, when the data is first displayed. It is reserved for the situation where only 1 row was fetched from DB2.

**User response:** No action required. Informational message.

---

**FMNDB149 *Count of unknown***

**Explanation:** This message is issued by the FM/DB2 editor, when operating in Large mode. *Count* shows the row number of the first row currently displayed (in TABL display mode), or the currently displayed row (in SNGL display mode). Large editor mode is explained at length in the File Manager User's Guide and Reference for DB2 data. Large editor mode is selected when the user enters 0 (also \*, ALL) in the "Row count" field of an FM/DB2 function that uses the editor to display the result table.

**User response:** No action required. Informational message. In Large editor mode the number of rows in the result table is not available until the user scrolls to the end of the DB2 object. After the user scrolls to the end of the DB2 object, 'unknown' is replaced with the number of rows in the DB2 object/result table.

---

**FMNDB150 Table locking disabled (short). Table locking was requested but failed, as can occur with eg catalog tables. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when the data is first displayed. The user specified a table locking option (not recommended) on the 7th Editor Options panel. When FM/DB2 attempted to lock the table, the operation failed.

**User response:** No action required. Informational message. This message can be issued when a DB2 catalog table is selected for edit.

---

**FMNDB153 Commit issued (short). All pending changes to the database have been successfully committed. (long).**

**Explanation:** This message is issued by the FM/DB2 editor (only for edit) when an explicit DB2 COMMIT has been issued. The DB2 COMMIT finalizes any pending changes made in the current editor session.

**User response:** No action required. Informational message.

---

**FMNDB154 Commit issued (Errors) (short). Successful changes committed, unsuccessful changes remain pending. (long).**

**Explanation:** This message is issued by the FM/DB2 editor (only for edit) when an explicit DB2 COMMIT has been issued. The DB2 COMMIT finalizes any pending changes made in the current editor session. The FM/DB2 editor processes changes data in an editor session on a row-by-row basis. It is therefore possible for some, but not all, changes to have been committed.

**User response:** No action required. Informational message. Use the 'e' prefix command to identify rows that are in error. If in doubt as to which changes have been made, exit the current editor session and restart.

---

**FMNDB155 Key information on (short). Key and index information will be displayed in single format (long).**

**Explanation:** The user entered the INDEXINF primary command in an FM/DB2 editor session, and the prior state of the toggle was off. When the data is displayed in SNGL mode, an additional column appears on the left of the display, showing the columns that are part of keys (indexes) defined against the table.

**User response:** No action required. Informational message.

---

**FMNDB156 Key information off (short). Key and index information will not be displayed in single format (long).**

**Explanation:** The user entered the INDEXINF primary command in an FM/DB2 editor session, and the prior state of the toggle was on. See also message 906.

**User response:** No action required. Informational message.

---

**FMNDB157 Rollback issued (short). A DB2 rollback has been issued. Any uncommitted changes are lost. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when the user presses the PF key assigned to CANCEL, or types CANCEL, within the editor session. The current FM/DB2 editor session ends and an explicit DB2 ROLLBACK is issued. Any changes made after the last DB2 COMMIT are lost.

**User response:** No action required. Informational message.

---

**FMNDB158 Auxiliary Table (short). Edit or browse of an auxiliary table is not possible. (long).**

**Explanation:** An attempt was made to edit an auxiliary table. This action is not supported.

**User response:** No action required. Informational message. Only base DB2 objects can be edited.

---

**FMNDB159 count rows fetched.**

**Explanation:** This message is issued by the FM/DB2 editor when the data is first displayed. It shows the number of rows that have been fetched from DB2 and loaded into the current editor session. It indicates that the user specified a non zero "row count" value, that the specified number of rows has been loaded into the editor, and that the end of the DB2 object or result table was not reached.

**User response:** No action required. Informational message. Not all the rows in the DB2 table have been loaded into the FM/DB2 editor. Consequently, any edit operations apply only to those rows loaded.

---

**FMNDB160 Insufficient storage (short). There was insufficient virtual storage to edit/browse this object. Use the Rows to Retrieve option or specify a row selection criteria to limit the amount of data retrieved from DB2. (long).**

**Explanation:** This message is issued by the FM/DB2

editor when there is insufficient memory available to load all the rows of a DB2 object or result table into memory. The editor operation cannot proceed.

**User response:** Review "Restricting the data that FM/DB2 loads from DB2", covering memory usage by the FM/DB2 editor. There are various options for resolving this issue, including (non-exhaustive list):

1. Increase the TSO Region Size.
2. Use the FM/DB2 editor in "Large" mode, to minimize memory usage.
3. Specify a lower "row count" value.
4. Use record selection criteria, WHERE clause, to reduce the number of rows that might be loaded.

---

**FMNDB161 Warning: USA time format (short). The DB2 object being edited contains at least 1 column with the TIME data type and the system options are set to display these columns in USA format (for example, HH:MM AM|PM. You may not be able to delete or update rows in this DB2 object because of the loss of information associated with the use of this format. See the Systems Options tutorial for more information. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when processing a DB2 object, or result, table that has at least one column with the TIME data type. In addition, the FM/DB2 system options are set to display TIME columns in USA format. This format truncates the seconds part of any TIME value, making it impossible to distinguish between, for example, 09:13:52 and 09:13:00. For this reason it may be impossible to update or change data for this table.

**User response:** If edit operations are required for this table, consider changing the FM/DB2 system options to display TIME columns in either ISO or JIS formats, both of which show the full seconds value. For more information about the TIME display formats supported by DB2, see the *DB2 UDB for z/OS SQL Reference*.

---

**FMNDB163 Copy Pending (short). Updates are not allowed to tablespace *table space name* in database *database name* because the tablespace is marked as COPY PENDING. In order to edit the table you should cancel the current edit session, then take action to remove the copy pending status. One way to do this is to run the DB2 COPY utility. See the DB2 Administration Guide for a full explanation. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when an attempt is made to edit a DB2 object that is marked as COPY PENDING. The DB2 object being edited is stored in table space *table space name* in database *database name*. It is not possible to change DB2 tables

while they are in COPY PENDING status. COPY PENDING status can be set for a DB2 object after, for example, an initial data load, using the DB2 utilities, when certain utility options are specified.

**User response:** The recommended way to remove the COPY PENDING status is to run the DB2 COPY utility against the DB2 object. Consult your DB2 System Administrator for the best way to proceed.

---

**FMNDB164 Syntax error (short). The WHERE clause contains a syntax error. (long).**

**Explanation:** This message is issued by the template editor, or Column Selection, or Edit panel, when a syntax error is detected in the user-specified WHERE clause.

**User response:** Examine the WHERE clause for any possible errors. You can copy the complete SQL to either the clipboard, or a temporary data set, and then use an SQL processor such as FM/DB2 options 4.3, 4.4, or SPUFI to execute the statement. Any SQL errors for the statement will also be reported.

---

**FMNDB165 Invalid column name (short). The WHERE clause contains an invalid column name, *column name*. (long).**

**Explanation:** This message is issued by the template editor, or Column Selection/Edit panel, when the WHERE clause specifies an invalid column name. The reason is that the column name does not exist in the DB2 object or result table being processed.

**User response:** Check the WHERE clause and locate any occurrences of *column name*. Ensure that this column name is one of the columns in the DB2 object, or result table. Retry the operation.

---

**FMNDB166 Open quoted string (short). The WHERE clause contains an open quoted string. (long).**

**Explanation:** This message is issued by the template editor, or Column Selection/Edit panel, when the WHERE clause contains an open quoted string. Examples of open quoted strings are:

1. WHERE EMPNO = '
2. WHERE EMPNO ="

**User response:** Check the WHERE clause, and count the number of apostrophes and double quotes. An odd number for either indicates a problem. Make corrections and retry the operation. The rules for quoted strings can be found in the *DB2 UDB for z/OS SQL Reference*.

---

**FMNDB167 SQLCODE *SQLCODE* (short). Execution of the SQL statement will result in SQLCODE *SQLCODE*. (long).**

**Explanation:** This message is issued by the template editor, or Column Selection and Edit panel, during validation of a user specified WHERE clause. The validation process used by FM/DB2 is to prepare a SELECT statement against the DB2 object being processed after appending any user specified WHERE clause. The prepare can fail for many reasons, for example syntax errors and incorrect column names. The prepare step may also fail for other reasons, in which case the failing SQLCODE is returned to the user for action.

**User response:** Look up the SQLCODE in the *DB2 UDB for z/OS Messages and Codes* manual and respond as directed.

---

**FMNDB170 Dependent rows (short). This related edit session shows only those rows that would be affected by the change to parent table *Parent table name*. The foreign key columns are marked with a K in the scale line, and are shown on the left of the display in table display format. In general, the foreign key value must be changed, or the row deleted, for the operation on the parent table to proceed.**

**Explanation:** This message is displayed when the data for a new related edit session is first displayed, and the new table is a dependent table.

**User response:** The reason for editing a dependent table is to resolve foreign key values that are preventing the deletion of the corresponding primary key in the parent table. In some situations the dependent edit session will show all rows, not just those with the foreign key values that match the primary key value in the parent table.

---

**FMNDB171 Parent table (short). In this related edit session the primary key columns are marked with a P in the scale line and are shown on the left of the display (table display format). You can use the IP prefix command to insert a new row with the primary key set to the foreign key value entered in the edit session of dependent table *dependent table*. (long).**

**Explanation:** This message is displayed when the data for a new related edit session is first displayed, and the new table is a parent table.

**User response:** The reason for editing the parent table is to add a new primary key, so that a row in a dependent table with a new foreign key, that matches the primary key, can be added.

---

**FMNDB173 All rows (short). This related edit session shows all rows of the table. Parent table *parent table name* is subject to a self referencing constraint such that deleting or changing a primary or parent key value may result in the recursive deletion of other rows in the parent table. FM/DB2 cannot determine which rows in table *dependent table name* will be affected by such an operation. (long).**

**Explanation:** This message is displayed when the data for a new related edit session is first displayed, and the new table is a dependent table.

**User response:** The reason for editing a dependent table is to resolve foreign key values that are preventing the deletion of the corresponding primary key in the parent table.

---

**FMNDB174 Commit issued (short). A DB2 commit has been issued. (long).**

**Explanation:** This message is issued at the end of an FM/DB2 editor session. It indicates that a DB2 COMMIT has been issued to finalize any pending changes to the DB2 object being processed.

**User response:** No action required. Informational message.

---

**FMNDB175 Invalid value (short). Valid values are TABL and SNGL. There are no unformatted edit modes in FM/DB2. (long).**

**Explanation:** The user typed an invalid value in the Format field in an FM/DB2 editor session.

**User response:** Check the value that was entered. There are two display modes when using the FM/DB2 editor:

1. TABL (Can be abbreviated to T, TA, TAB).  
In this mode each horizontal line on the screen shows one row of data from the DB2 object or result table being processed.
2. SNGL (Can be abbreviated to S, SN, SNG).  
In this mode the data for a single row of the DB2 object or result table being processed is displayed. The data for each column is shown, with the column name on the left and the data for that column on the right.

---

**FMNDB176 Object/Alias not found (short). The specified object or alias was not found in the catalog, or the target of an alias does not exist.**

**Explanation:** The user entered the name of a DB2 object in the "Owner" and "Name" fields on an FM/DB2 function entry panel. FM/DB2 attempted to

resolve the name and the attempt failed. The reason this message is issued is described in the following example: Alias *ALIAS* is defined, this refers to *OBJECT*. However, *OBJECT* does not exist. The user enters *ALIAS* in the "Owner" and "Name" fields on an FM/DB2 function entry panel. FM/DB2 resolves the *ALIAS* name to *OBJECT*. However, the latter does not exist, resulting in this error message.

**User response:** Determine why the DB2 Object Name does not exist.

---

**FMNDB177 Warning: USA time format (short). The DB2 object being exported contains at least 1 column with the TIME data type and the system options are set to externalize these columns in USA format (HH:MM AM|PM). The exported data will not contain seconds information because of the loss of information associated with the use of this format. See the Systems Options tutorial for more information. (long).**

**Explanation:** This message is issued by either the FM/DB2 export, or FM/DB2 UNLOAD utilities when:

1. The DB2 object being processing has a TIME data type column.
2. The "External Format for TIME Data Type Columns" system option is set to "DB2 DSNHDECP setting".
3. The DSNHDECP setting for TIME columns is 'USA'.

**User response:** This is an informational message. As noted in the long message text, in this situation the exported data for the TIME columns will lose any seconds value. If this is intended or desired, then no action is required. When no loss of information is required, consider changing the "External Format for TIME Data Type Columns" value to either 'ISO' or 'JIS', both of which include the seconds information.

---

**FMNDB178 Warning: USA time format (short). The DB2 object being copied contains at least 1 column with the TIME datatype and the system options are set to externalize these columns in USA format (HH:MM AMPM). The data copied to the target table will not contain second's information because of the loss of information associated with the use of this format. See the Systems Options tutorial for more information. (long).**

**Explanation:** This message is issued by the FM/DB2 copy utility when:

1. The DB2 object being processing has a TIME data type column.
2. The "External Format for TIME Data Type Columns" system option is set to "DB2 DSNHDECP setting".



3. The DSNHDECP setting for TIME columns is 'USA'.

**User response:** This is an informational message. As noted in the long message text, in this situation the copied data for the TIME columns will lose any seconds value. If this is intended or desired then no action is required. When no loss of information is required, consider changing the "External Format for TIME Data Type Columns" value to either 'ISO' or 'JIS', both of which include the seconds information.

---

**FMNDB179** Cancel recommended (short). DB2 has rolled back the current unit of work (SQLCODE -911) because of a deadlock with another task. ALL UNCOMMITTED CHANGES made during the current edit session have been lost. Consequently, the data displayed in the current edit session may not reflect the current state of the DB2 table. It is recommended that you cancel the current edit session and restart with a fresh copy of the data. (long).

**Explanation:** This message is issued by the FM/DB2 editor when it receives an SQLCODE-911 error attempting to change data for a row that was modified by the user. DB2 detected a deadlock with another task and resolved the situation by rolling back the changes for the FM/DB2 user. This means that any changes made since the last DB2 COMMIT point have been lost. In this situation there is no guarantee that the data displayed in the FM/DB2 editor still reflects the data stored in DB2. It is best to cancel the current editor session and restart.

**User response:** Cancel the current edit session and restart. Make a change to a single row and attempt to save the change. If the SQLCODE-911 reoccurs, contact your DB2 System Administrator for assistance in determining why a deadlock is occurring.

---

**FMNDB180** Related edit failed (short). Initialization of the related edit session failed. The reason is that the product has not been installed correctly. If LIBDEFs are used to allocate the File Manager/DB2 libraries, the related edit session exec, FMN2RESS, should be installed in the same library as the exec used to allocate the libraries for, and start, the first File Manager/DB2 session. Refer to the File Manager Customization Guide for further information. (long).

**Explanation:** The initialization process for the related edit session failed. Each related edit session is effectively a new invocation of FM/DB2. Once started the user can use ISPF commands to switch between the different logical sessions. During the invocation process a REXX EXEC, FMN2RESS, is called. However, this

REXX EXEC may not be accessible when LIBDEFs are used to define the FM/DB2 libraries.

**User response:** Contact the person who installed FM/DB2.

---

**FMNDB181** Browse substituted (short). The object being edited is a read-only view. In DB2 parlance a read-only view is any view that has at least one column marked as not updateable in the catalog. For this view every column is marked as not updateable. Consequently no edit operations of any kind are possible, and browse has been substituted for edit. (long).

**Explanation:** This message is issued by the FM/DB2 editor when processing a view that cannot be updated. While the user selected the edit (as opposed to view/browse) to process the object, no edit operations are possible. To avoid any possible confusion the edit session has been converted to browse.

**User response:** No action required. Informational message.

---

**FMNDB182** Table locking failed (short). Table locking was requested but failed. The object being edited is a view, and views cannot be explicitly locked. (long).

**Explanation:** This message is issued by the FM/DB2 editor when the data for a view is first displayed. The user has set a table locking option in the editor options. This is not recommended. Only tables can be explicitly locked, therefore the attempt to lock the view failed.

**User response:** No action required. Informational message. Table locking should be avoided because of the potential for deadlocks.

---

**FMNDB183** Read-only view (short). The object being edited is a read-only view. In DB2 parlance a read-only view is any view that has at least one column marked as not updateable in the catalog. For this view at least one column is marked as updateable. Those columns that are not updateable are protected. Some edit operations may fail. (long).

**Explanation:** The object being processed by the FM/DB2 editor is a read-only view, although it does have one or more columns marked as updateable.

**User response:** This is an informational message. It is possible to successfully edit some read-only views, even though some columns of the view cannot be updated. However, attempting to edit a read-only view is not advisable. Edit the underlying tables directly.

---

**FMNDB184 Non-updateable columns (short).** The table being edited contains at least one column marked as not updateable in the DB2 catalog. This can occur when editing DB2 catalog tables. The not updateable columns are protected. Some edit operations may fail. (long).

**Explanation:** The object being edited contains one or more columns marked as not updateable in the DB2 catalog SYSIBM.SYSCOLUMNS.UPDATES = 'Y'. These columns will appear in the editor session as protected fields. One reason for this message is when edit is used to display the data from a DB2 catalog table.

**User response:** This is an informational message. You will not be able to change the data for those columns marked as not updateable. It may also not be possible to delete or insert rows.

---

**FMNDB185 Recursive alias (short).** The object name entered is an alias that refers to an alias at a remote location, which is not permitted. Specify the alias name at the remote server directly. (long).

**Explanation:** The user entered an alias name in the "Owner" and "Name" fields on an FM/DB2 function entry panel. FM/DB2 resolved the alias name to another alias name defined at a remote location. This is not supported. After resolution, any alias name entered must refer to an actual DB2 object defined either locally, or remotely.

**User response:** Enter the target DB2 object name directly, or ensure that any alias used refers directly to a DB2 object.

---

**FMNDB186 Not available (View) (short).** The RE command is not available when editing a DB2 view. Edit the DB2 table directly to access related table edit processing. (long).

**Explanation:** The user entered the RE (Related edit) command in an FM/DB2 editor session. The object being edited is a view; related edit functionality is only available for tables. The operation cannot be performed.

**User response:** If related edit processing is required, ensure that all objects referred to are tables.

---

**FMNDB187 Command not available (short).** Commands such as INSERT, REPEAT and COPY are not available in this edit session. The data for the DB2 object is stored in UNICODE format, but there is no conversion routine for graphic data type columns. (long).

**Explanation:** This message is issued by the FM/DB2 editor when processing a DB2 object with graphic data

type columns that is encoded in Unicode. In this situation it is possible for data corruption to occur when processing data for these columns and initializing the field contents. To avoid this situation, the INSERT, REPEAT, and COPY commands are disabled.

**User response:** No action required. Informational message.

---

**FMNDB188 The DB2 object being edited is stored in a UNICODE-encoded table space, and the object contains MBCS (mixed byte character set) data (GRAPHIC data type columns). The current application encoding scheme is not a known MBCS CCSID. Changing the GRAPHIC data type columns is not supported. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when processing a DB2 object with graphic data type columns that is encoded in Unicode. In this situation it is possible for data corruption when processing data for these columns. To avoid this possibility, changes to graphic data type columns are not supported.

**User response:** No action required. Informational message.

---

**FMNDB189 Incompatible options (short).** Read-only access can only be selected with concurrency options that do not specify that locks will be kept, that is all options except 4 "Read stability keep locks" and 6 "Repeatable read keep locks". (long).

**Explanation:** There is a conflict between options selected on the 7th Editor options panel. The "read-only" option implies that no DB2 locks are required when processing the SQL SELECT statement. However, the Concurrency options "Read stability keep locks" and "Repeatable read keep locks" imply that DB2 should take and keep locks while processing the SQL SELECT statement.

**User response:** In all but exceptional cases the Concurrency option should be set to "Uncommitted read" or "No with clause". If a concurrency option that requires locks is required, do not specify the "Read-only access" option.

---

**FMNDB190 Statement overflow (short).** The SQL statement needed to update the table is too long. (long).

**Explanation:** An internal statement buffer overflow was detected while building an SQL statement to update a table. The operation cannot be performed. This condition should not occur during processing of typical DB2 objects. It might occur when processing DB2 objects with very many column names (the

maximum is 750), and with many "long" column names. The maximum length for a column name is 30 characters.

**User response:** Collect information including the DDL used to create the DB2 object being processed. Contact IBM Support.

---

**FMNDB191** Changes discarded (short). The invalid change to the Initial Display option has been discarded. (long).

**Explanation:** The user made an invalid change to the "Initial display format" editor option, and then pressed the PF key assigned to END, or typed END. The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDB192** Changes discarded (short). The invalid change to the Concurrency option has been discarded. Enter one of the listed values for the Concurrency option. (long).

**Explanation:** The user made an invalid change to the "Concurrency" editor option, and then pressed the PF key assigned to END, or typed END. The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDB193** Changes discarded (short). The invalid change to the Enter key usage option has been discarded. Enter one of the listed values for the Enter key usage option. (long).

**Explanation:** The user made an invalid change to the "Enter key usage" editor option, and then pressed the PF key assigned to END, or typed END. The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDB194** Use unique characters (short). The character used to indicate the "String delimiter (display)" must be different to the character used to indicate the "String delimiter (input)". Select a different character. (long).

**Explanation:** The user specified the same character for the "Input" and "Display" string delimiters on the 5th Editor options panel. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB195** Use unique characters (short). The character used to indicate the;"Null column display indicator" must be different to the character used to indicate the "Null column input indicator" Select a different character. (long).

**Explanation:** The user specified the same character for the "Input" and "Display" Null column indicators on the 5th Editor options panel. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB196** Use unique characters (short). The character used to indicate the "Null column input indicator" must be different to the character used to indicate the "String delimiter (input)". Select a different character. (long).

**Explanation:** The user specified the same character for the "Input" Null column indicator and "Input" String delimiter. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB197** Use unique characters (short). The character used to indicate the "Null column display indicator" must be different to the character used to indicate the "String delimiter (input)". Select a different character (long).

**Explanation:** The user specified the same character for the "Display" Null column indicator and "Input" String delimiter. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for

the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB198** Use unique characters (short). The character used to indicate the "Null column input indicator" must be different to the character used to indicate the "String delimiter (display)". Select a different character (long).

**Explanation:** The user specified the same character for the "Input" Null column indicator and "Display" String delimiter. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB199** Use unique characters (short). The character used to indicate the "Null column display indicator" must be different to the character used to indicate the "String delimiter (display)". Select a different character. (long).

**Explanation:** The user specified the same character for the "Display" Null column indicator and "Display" String delimiter. While most characters can be used, the characters that are used must be distinct.

**User response:** Ensure that the characters specified for the "Input" and "Display" indicators and delimiters are unique.

---

**FMNDB206** Not on remote object (short). The requested function can not be performed on an object at a remote location. (long).

**Explanation:** This message is issued by the FM/DB2 Object List utility in various circumstances when a requested command cannot be performed. The reason the command cannot be performed is that the object is at a remote location. Certain SQL commands, for example GRANT and REVOKE, may only be issued when connected to the local DB2 server.

**User response:** Connect to the remote DB2 server directly and reissue the command.

---

**FMNDB208** Not on catalog object (short). The requested function can not be performed on a DB2 catalog object. (long).

**Explanation:** The LISTCAT line command was issued against a DB2 catalog object. For example, a table or index space. This command cannot be issued against DB2 catalog objects.

**User response:** No action required. Informational message.

---

**FMNDB210** Invalid value (short). The valid values are 16, for an 8 byte number with 16 digit coefficient, or 34 for a 16 byte number with 34 digit coefficient. (long).

**Explanation:** This message is issued by the FM/DB2 Object functions. For a column defined with the DECFLOAT data type, a value other than 16 or 34 was entered in the 'PR' column.

**User response:** Enter either 16 for an 8-byte number, or 34 for a 16-byte number.

---

**FMNDB215** Unsupported data type (short). This File Manager DB2 function does not support columns of the specified data type. Supported data types are *List of data types*. (long).

**Explanation:** This message is issued by the FM/DB2 Object functions. When defining the data type for a column, an invalid, or unsupported, data type value was entered.

**User response:** Check that the data type entered is spelled correctly. The list of supported data types is shown in the long version of the message. Press the PF key assigned to HELP, PF1 by default, to access. Check that the data type is supported by the version of DB2 in use. For example, the DECFLOAT data type is not supported at DB2 version 8.

---

**FMNDB216** Length error (short). The specified length, precision, or scale is not valid for the data type of the column. (long).

**Explanation:** This message is issued by the FM/DB2 Object functions. The value entered for a length, precision or scale is invalid.

**User response:** Check the value entered. Consult the *DB2 UDB for z/OS SQL Reference* manual for detailed information on the permissible values for data type lengths, and the scale and precision values that may be specified.

---

**FMNDB217** Scale > precision (short). The scale of a decimal must be less than or equal to the precision of the number. (long).

**Explanation:** This message is issued by the FM/DB2 Object functions. The combination of scale and precision values entered is invalid.

**User response:** For Decimal numbers the precision can be 1 to 31, inclusive. The scale for a number can be 0 to p, where p is the precision of the number.



---

**FMNDB220 Non updateable field (short).** A field reference in a change command refers to a column that is not updateable. (long).

**Explanation:** In the FM/DB2 editor, a change command was issued that included a field reference, or references. The target column for the change is not updateable, meaning that the proposed change is not possible.

**User response:** Ensure that the field reference identifies a column that can be changed. Non updateable columns are shown as protected fields in the editor display.

---

**FMNDB223 Start too large (short).** The start position (*start position*) is larger than the number of rows (*number of rows*) in the result table.

**Explanation:** This message is issued by the FM/DB2 editor. The user entered a value *start position* in the "Start position" field on the DB2 Edit panel. When FM/DB2 attempted to skip to the nominated start position, it reached the end of the result table. The number of rows in the result table is *number of rows*.

**User response:** Informational message. Reduce the start position value to at least *number of rows* and retry the operation.

---

**FMNDB224 Start out of range (short).** The first sample row is at row *row number*, which is larger than the number of rows, *number of rows*, in the result table. Reduce the start position and/or initial skip count values.

**Explanation:** This message is issued by the FM/DB2 editor when clustered sampling is selected in the editor options. When FM/DB2 attempted to skip to the nominated start position, determined by the value in the "start position field", and the value in the "Initial skip count fields", it reached the end of table. The number of rows in the result table is *number of rows* (n).

**User response:** Informational message. Reduce either or both of the "start positions" and "Initial skip count" (i) values, so that  $s+i+1 \leq n$ .

---

**FMNDB240 Invalid collection (short).** The collection must be different from the COPY collection. (long).

**Explanation:** When binding a copy of a package, the collection and COPY collection values must be different.

**User response:** Specify different values.

---

**FMNDB242 DASD data set required (short).** This command can only be used on a row where DSNAME refers to a DASD data set. (long).

**Explanation:** The 'B' (Browse) command was issued against an image copy entry displayed by the FM/DB2 Object List Utility. The browse command can only be entered against entries associated with an image copy data set stored on DASD (disk). The command cannot be processed.

**User response:** Issue the command against an image copy data set with a non blank device type. The device type must not be a tape type.

---

**FMNDB245 No plan (short).** The command is only valid when application plan is non-blank. (long).

**Explanation:** The DBRM command was entered against an entry in a PLAN table. The command is only valid when the entry is associated with an application plan; that is the APPLNAME column for the row is non blank. The command cannot be processed.

**User response:** Ensure that the APPLNAME column value is non blank.

---

**FMNDB246 No collection (short).** The command is only valid when collection is non-blank. (long).

**Explanation:** The PACKage command was entered against an entry in a PLAN table. The command is only valid when the entry is associated with a package; that is the COLLID column for the row is non blank. The command cannot be processed.

**User response:** Ensure that the COLLID column value is non blank.

---

**FMNDB247 No DBRM (short).** The command is only valid when DBRM is non-blank. (long).

**Explanation:** The PACKage command was entered against an entry in a PLAN table. The command is only valid when the entry is associated with a DBRM; that is the PROGNAME column for the row is non blank. The command cannot be processed.

**User response:** Ensure that the PROGNAME column value is non blank.

---

**FMNDB250 Invalid SQL identifier (short).** The value entered is not a valid SQL ordinary identifier. (long).

**Explanation:** This message is issued in various places in the FM/DB2 Object List Utility. A value was entered for a field where an ordinary SQL Identifier is required. An example is a DB2 authid used as an "Owner" or SQLID.

**User response:** An SQL ordinary identifier cannot include characters other than A-Z, 0-9, \_ ,and the national characters, and must not begin with a digit. See the DB2 SQL Reference manual for a precise definition. Refer to the Appendix "Limits in DB2 for z/OS", for a complete list of valid values for various types of DB2 items.

---

**FMNDB270 Invalid buffer pool (short). Valid buffer pool names are: *List*. (long).**

**Explanation:** A value entered for a buffer pool is invalid. *List* shows the valid values that can be entered.

**User response:** Compare the value entered against the values in *List*. Change the value entered to match one of the values in *List*. Retry the operation.

---

**FMNDB271 DB2 version invalid (short). Table constraints are only available when connected to a DB2 Version 8 or later system. Current DB2 version is DB2 VRM indicator. (long).**

**Explanation:** The "CON" command (Show table constraints) was issued against a list of tables in the FM/DB2 Object List utility. This command is not valid when connected to a DB2 version 7, or earlier system. The currently connected DB2 system is at *DB2 VRM indicator*, which is less than '0800'. The command cannot be executed.

**User response:** No action required. Informational message.

---

**FMNDB272 Not valid for object (short). "*line command*" is not a valid command for this type of object. (long).**

**Explanation:** This message is issued in various contexts by the FM/DB2 Object List utility. An example is issuing the VS (Show view SQL) against a entry in a list of DB2 tables/views/aliases, when the entry is not a view.

**User response:** Ensure that the command entered is appropriate for the type of object shown in the row.

---

**FMNDB273 Not valid for function (short). "*Line command*" is only valid for external user-defined functions. (long).**

**Explanation:** This message is issued in various contexts by the FM/DB2 Object List utility when processing a list of functions. The row against which the line command was entered is of the wrong function type. The command is not applicable to that type of function.

**User response:** The type of function is shown in the "Type of Routine" column. Enter the command against a row showing a function of the appropriate type.

---

**FMNDB274 No upgrade done (short). The PLAN\_TABLE was already at the correct level. (long).**

**Explanation:** A command was issued to upgrade a PLAN\_TABLE, however the table was already at the correct level. No action was taken.

**User response:** No action required. Informational message.

---

**FMNDB275 Not valid for column (short). "*Line command*" is not a valid command for this type of column. *List of types*. (long).**

**Explanation:** This message is issued in various contexts by the FM/DB2 Object List utility when processing a list of columns. The row against which the line command was entered is of the wrong type. For example, the command applies only to columns defined with a user-defined (DISTINCT) data type. The command cannot be executed.

**User response:** No action required. Informational message. *List of types* contains information about the types of columns that the command can be issued against.

---

**FMNDB276 Not valid for column (short). *Line command* is not a valid command for 'identity column' type sequence objects. (long).**

**Explanation:** The 'COM' (COMMENT) line command was issued against a row in a list of sequences displayed by the FM/DB2 Object List Utility. A comment cannot be specified for sequences that represent internal sequence objects used by DB2. The command cannot be executed.

**User response:** No action required. Informational message.

---

**FMNDB289 Data set required (short) This command can only be used on a row where DSNNAME refers to a data set. (long).**

**Explanation:** The user issued the 'LC' (LISTCAT) command against an entry in a list on the Recovery Information panel in the FM/DB2 object list utility that did not have an associated data set. The Recovery Information panel shows all the rows in the SYSIBM.SYSCOPY catalog table. Only rows that represent full and incremental image copies are suitable targets for the LISTCAT command.

**User response:** No action required. Informational message. Ensure that the selected row represents either a full or incremental copy. The command may still fail if, for example, the data set has been deleted.

---

**FMNDB292 Invalid criteria (short).** The criteria specified in the Additional Selection Criteria fields produced an invalid SQL SELECT statement WHERE clause. DB2 returned an SQL code of -199 to the SQL statement "SQL STATEMENT". (long).

**Explanation:** This message is issued by the FM/DB2 object list utility when the user has entered values in the "Additional selection criteria" section of the panel. This section of the panel can be used to add a simple predicate to the SQL being generated. For example, when listing tables, show only tables that have an EDITPROC. This can be achieved by setting Column=EDPROC; Operator= ≠ Value = ". The expression entered resulted in SQLCODE-199, and cannot be processed.

**User response:** Look up SQLCODE-199 in the *DB2 Administration Tool for z/OS User's Guide and Reference*, modify the predicate, and retry the operation.

---

**FMNDB295 Invalid location (short).** The location name is invalid or is not defined to the DB2 subsystem. (long).

**Explanation:** The user entered a value in a Location field on an FM/DB2 function entry panel. The attempt to connect to this remote server failed with SQLCODE-950.

**User response:** Look up SQLCODE-950 in the DB2 SQL Messages and Codes manual. The most likely explanation is that the value entered does not appear in column SYSIBM.LOCATIONS.LOCATIONS at the local DB2 server. If the value is incorrect then amend it and retry the operation. If the value is correct contact the person responsible for maintaining DRDA definitions for your DB2 systems.

---

**FMNDB296 No plan table (short).** Plan table owner.PLAN\_TABLE does not exist. (long).

**Explanation:** This message is issued by the Explain Utilities functions when the user issues the 'L' (List plan table rows) command, but the plan table owner.PLAN\_TABLE does not exist. The operation cannot be performed.

**User response:** The PLAN\_TABLE is a user-defined table. The explain utilities allow an "owner" value to be specified. Check that this value is not preventing access to the user's PLAN\_TABLE. All PLAN\_TABLE entries can be listed using the FM/DB2 Object List utility. If the PLAN\_TABLE does not exist, use the 'C' command to create it.

---

**FMNDB298 Incomplete quoted string (short).** You entered an incomplete quoted string. DB2 returned an SQL code of -010 to the SQL statement SQL Statement. (long).

**Explanation:** This message is issued when a generated SQL statement contains a syntax error, specifically an open quoted string. The SQL statement cannot be executed.

**User response:** Examine the SQL statement to determine the source of the open quoted string. Modify the values entered to avoid the problem, retry the operation.

---

**FMNDB299 Not COPY FULL (short).** The RT command is only valid against an image copy entry. (long).

**Explanation:** The user issued the 'RT' (Recover TOCOPY) command against an entry in a list on the Recovery Information panel in the FM/DB2 object list utility that did not have an associated data set. The Recovery Information panel shows all the rows in the SYSIBM.SYSCOPY catalog table. Only rows that represent full and incremental image copies are suitable targets for the RT command.

**User response:** Ensure that the row selected represents either a full or incremental image copy.

---

**FMNDB300 No previous template has been used with this DB2 object. (long).**

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies "Previous" for the Template usage option. However, no template has been previously saved for the current DB2 object.

**User response:** You can generate and save a template for the current DB2 object using the "Generate/Replace" template usage option. Once a template has been successfully saved, use the "Previous" option to access the template, without needing to enter a template data set name or member.

---

**FMNDB301 Invalid FM/DB2 template (short).** The specified template does not represent a FM/DB2 template. Specify a valid FM/DB2 template. (long).

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies a template data set name for a DB2 object, and that the specified template should be used. However, the specified template is not a valid FM/DB2 template. There are different types of File Manager templates, depending on the source of the template. A base template cannot be used to describe a DB2 object.

**User response:** You can generate and save a template for the current DB2 object using the "Generate/Replace" template usage option. Once a template has been

successfully saved, you can access it and possibly modify it using the "Edit template" option on the appropriate FM/DB2 function entry panel.

---

**FMNDB302 FM/DB2 template loaded (short). File Manager/DB2 template has been successfully loaded. (long).**

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies a template data set name for a DB2 object, and that the specified template should be used when processing the DB2 object. The specified template was successfully loaded, compared against the DB2 object and found to contain a valid description of the DB2 object.

**User response:** No action required. Information message.

---

**FMNDB303 Template not loaded (short). Loading of FM/DB2 template canceled by user. Row selection criteria for the template must be revised before proceeding. (long).**

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies a template data set name for a DB2 object, and that the specified template should be used when processing the DB2 object. When FM/DB2 compared the template specified by the user with the template generated by FM/DB2, using the information in the DB2 catalog, differences were found. The "Template not matched" panel is typically shown before this message; the user pressed PF3 on the "Template not matched" panel. In most cases this error means that the template in the user-specified data set refers to a different DB2 object to that specified on the function entry panel. See also message FMNDB304.

**User response:** Resolve the reason for the difference between the data set template and the DB2 object, and retry the operation. Note that FM/DB2 always generates a template for any DB2 object and compares this with any user-specified template; with the former template considered to be correct. There are many reasons why the two templates may be inconsistent (for example, Different DB2 objects; Object dropped changed and recreated).

---

**FMNDB304 Template mismatch (short). The selected template does not match the DB2 object. Press ENTER to replace selected template, or PF3/END to select another template or processing option. (long).**

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies a template data set name for a DB2 object, and when the user specifies the template should be used when processing the DB2 object. When FM/DB2 compared the template specified by the user with the template generated by FM/DB2, using the information in the DB2 catalog,

differences were found. The "Template not matched" panel is typically shown at the same time as this message.

**User response:** There are two choices: 1. Press PF3 to cancel the current function. You may then attempt to resolve why the specified template data set does not match the DB2 object and retry the operation. 2. Press ENTER to replace the template in the data set with a correct version for the DB2 object. Any customization stored in the data set template will be lost. Note that FM/DB2 always generates a template for any DB2 object and compares this with any user-specified template; with the former template considered to be correct. There are many reasons why the two templates may be inconsistent (for example, Different DB2 objects; Object dropped changed and recreated).

---

**FMNDB305 Template not updated (short). Loading of File Manager/DB2 template canceled by user as the specified template does not match the DB2 object. Specify another template or processing option. (long).**

**Explanation:** This message is issued by an FM/DB2 function entry panel when the user specifies a template data set name for a DB2 object, and that the specified template should be used when processing the DB2 object. When FM/DB2 compared the template specified by the user with the template generated by FM/DB2, using the information in the DB2 catalog, differences were found. The user canceled the template merge process.

**User response:** No action required. Informational message.

---

**FMNDB310 No statement table (short). Plan table *Owner.DSN\_STATEMNT\_TABLE* does not exist. (long).**

**Explanation:** This message is issued when an attempt is made to access *Owner.DSN\_STATEMNT\_TABLE*. The user-defined table does not exist, the operation cannot be performed.

**User response:** Create the table using the FM/DB2 Explain Utilities function. After populating the table using the EXPLAIN command, retry the operation.

---

**FMNDB311 No function table (short). Plan table *Owner.DSN\_FUNCTION\_TABLE* does not exist. (long).**

**Explanation:** This message is issued when an attempt is made to access *Owner.DSN\_FUNCTION\_TABLE*. The user-defined table does not exist, the operation cannot be performed.

**User response:** Create the table using the FM/DB2 Explain Utilities function. After populating the table using the EXPLAIN command, retry the operation.



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**FMNDB312** executed

**Explanation:** This message is issued by either: the FM/DB2 Enter, Execute and Explain SQL, or FM/DB2 Edit/Execute SQL (Data Set) functions, as part of a longer message.

**User response:** No action required. Message insert used for an informational message.

---

**FMNDB313** explained

**Explanation:** This message is issued by the FM/DB2 Enter, Execute and Explain SQL function, as part of a longer message.

**User response:** No action required. Message insert used for an informational message.

---

**FMNDB400** Incomplete clause (short). The syntax clause just exited is not yet complete. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function, when the user exits the syntax diagram for a code fragment without making any choice.

**User response:** No action required. Informational message.

---

**FMNDB401** Command command ignored (short). You entered the Command command but the cursor was not on a syntax element. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user presses a PFKey assigned to a command (for example INSRPT, assigned to PF5 by default), however the cursor was not located on an applicable syntax element. The command cannot be performed.

**User response:** No action required. Informational message.

---

**FMNDB402** Command command ignored (short). You entered the Command command with the cursor on a syntax element but the element is not in a repeat group. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user presses a PFKey assigned to a command (for example INSRPT, assigned to PF5 by default), however the cursor was not located on an applicable syntax element. Some commands are only applicable to repeatable syntax elements. The command cannot be performed.

**User response:** No action required. Informational message.

---

**FMNDB403** No data entered (short). No data was entered for the data entry syntax element. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user exits a data entry syntax element without entering a value. An example is the "table" option of the "table reference clause". A DB2 table name, such as DSN8x10.EMP is required.

**User response:** No action required. Informational message. If this element is a required part of the SQL syntax you will need to enter a valid value to be able to complete the SQL SELECT statement.

---

**FMNDB404** Statement empty (short). You entered a scroll command but there is no generated statement data. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user enters a scroll command (or presses a PFKey assigned to a scroll command), however there is not data to scroll.

**User response:** No action required. Informational message.

---

**FMNDB405** End of data (short). The last line of the generated statement is already displayed. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user enters a scroll down command (or presses a PFKey assigned to scroll down), however there the last line of the generated statement is already visible. No further scrolling is possible.

**User response:** No action required. Informational message.

---

**FMNDB406** Top of data (short). The first line of the generated statement is already displayed. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function when the user enters a scroll up command (or presses a PFKey assigned to scroll up), however there the first line of the generated statement is already visible. No further scrolling is possible.

**User response:** No action required. Informational message.

---

**FMNDB407** Autoscrollled (short). The generated statement has changed, and the statement generation area has been scrolled to bring the end of the data into view. (long).

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function. The SELECT statement being generated changed as a result of user input. The display of the generated statement was automatically scrolled to show the last part of the statement.

**User response:** No action required. Informational message.

---

**FMNDB408 Statement too long (short). The length of the generated statement exceeds the maximum length allowed for the target system: execution failure expected. (long).**

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function. The length of the generated SQL statement exceeds 32765 bytes, which is the limit for the function. Execution of the statement is expected to fail and should not be attempted. Note that while DB2 supports SQL statements up to 2M-1 the limit of 32K-2 is imposed by File Manager/ISPF.

**User response:** Cancel the current operation and restart.

---

**FMNDB409 Repeat separator invalid (short). A repeat separator cannot be entered because no elements of the repeat item have been selected. (long).**

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function, when the user attempted to add a repeat separator (for example AND, OR), however no repeatable items have been selected.

**User response:** Select at least one repeatable item before attempting to insert a repeat separator.

---

**FMNDB410 Nothing to execute (short). The EXECUTE command cannot be executed because no statement has been generated for execution. (long).**

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function. The user entered the EXECUTE command; or pressed the PFKey assigned to EXECUTE, however no SELECT statement has been generated.

**User response:** Use the prototyping facilities to generate a SELECT statement prior to attempting execution.

---

**FMNDB411 Repeat separator invalid (short). There is no repeat separator associated with the last repeated element. (long).**

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function. An attempt was made to insert a repeat separator, however there is

no repeat separator for the last repeated element.

**User response:** No action required. Informational message. If in doubt consult the syntax diagram for SELECT in the DB2 SQL Reference manual.

---

**FMNDB412 Nothing to execute (short). The EXECUTE command cannot be executed because no statement has been entered for execution. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute and Explain SQL function. The user entered the EXECUTE command; however the SQL Statement input area is blank.

**User response:** No action required. Informational message.

---

**FMNDB413 Invalid statement type (short). An invalid statement or a statement that is not dynamically executable was found in the statement entry area. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute and Explain SQL function, when the user has entered an SQL statement that cannot be dynamically prepared/executed. An example is 'CONNECT TO *server*', which can only be coded in an application program. This statement cannot be dynamically prepared and executed. The operation cannot be performed.

**User response:** Consult the DB2 SQL Reference manual for information about those statements that can/cannot be dynamically prepared/executed.

---

**FMNDB414 *Statement type* statement executed (SQL cost *Cost*)**

**Explanation:** This message is issued by FM/DB2 functions after the successful execution of some SQL statement. *Statement type* is SELECT, INSERT, and so on. *Cost* is the timer on value returned by DB2 when the SQL statement was prepared, giving a relative estimate of cost of executing the statement.

**User response:** No action required. Informational message.

---

**FMNDB415 *count* statements executed (SQL cost *Cost*).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function after successful execution of multiple SQL statements. *Count* is the number of SQL statements that were executed. The statements may be of different types. *Cost* is the total of the timer on values returned by DB2 when each SQL statement was prepared.

**User response:** No action required. Informational message.

---

**FMNDB416 TABLE**

**Explanation:** This is a message insert, used by the FM/DB2 editor.

**User response:** No action required. Used to create a larger message.

---

**FMNDB417 VIEW**

**Explanation:** This is a message insert, used by the FM/DB2 editor.

**User response:** No action required. Used to create a larger message.

---

**FMNDB418 RESULTS FOR**

**Explanation:** This is a message insert, used by the FM/DB2 editor.

**User response:** No action required. Used to create a larger message.

---

**FMNDB419 Execution error (short). SQL execution failed. The cursor is placed on the start of the failing statement, or for a syntax error, on the token in error.**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute and Explain SQL function when execution of some SQL statement fails. Depending on the type of error, the cursor is placed at the start of the failing SQL statement, or on the token within the SQL statement considered to be in error.

**User response:** For syntax errors, the cursor location is at the failing token as determined by the DB2 syntax parser. The actual error may be earlier in the statement. Example: SELECT FROM DSN8810.EMP gives SQLCODE-104 and the cursor is located on the period in "DSN8810.EMP". The actual error is the omission of '\*' after the SELECT keyword. Consult the DB2 SQL Reference manual for the statement type for the syntax diagram for that statement.

---

**FMNDB420 Data truncated (short). Data found beyond column 72 in the SQL edit session has been discarded. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function after the user exits from an ISPF editor session displayed in response to the SQL command. Within the ISPF editor, session changes may be made to the SQL statement. However, the statement must be entered in columns 1-72, inclusive. Any data entered in columns 73-80 is truncated (discarded).

**User response:** Examine the SQL statement to determine where the truncation occurred and make corrections.

---

**FMNDB421 SQL too long (short). The SQL data returned from the SQL edit session was too large for the execution buffer. Some lines have been discarded. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute and Explain SQL function after the user exits from an ISPF editor session displayed in response to the SQL command. Not all of the SQL statement entered in the ISPF editor session could be copied to the display area for the FM/DB2 Enter, Execute, and Explain SQL function. The statement is too long.

**User response:** You may be able to circumvent this problem by using less lines to code the SQL statement in the ISPF editor session. For example, by removing some of the white space in the statement.

---

**FMNDB422 Nothing to edit (short). There is no SQL statement for the SQL command to edit. (long).**

**Explanation:** This message is issued by the FM/DB2 Advanced SELECT Prototyping function. The user entered the SQL command; however there was no SQL to display in an ISPF editor session. The SQL command cannot be processed.

**User response:** Enter some part of the SQL SELECT statement before entering the SQL command.

---

**FMNDB423 Select an option (short). Either edit or execute must be selected. (long).**

**Explanation:** This message is issued by the FM/DB2 Edit/Execute SQL (Data Set) function. Neither the "Edit data set", nor the "Execute SQL from data set" options have been selected.

**User response:** You must select one, or both of the "Edit data set" and "Execute SQL from data set" options to use this function.

---

**FMNDB424 *Statement type* statement Action.**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function when an SQL statement other than a SELECT, DELETE, or UPDATE is processed. *Statement type* is the type of statement (Example SET) and *Action* indicates the type of operation. For example, "executed".

**User response:** No action required. Informational message.

---

**FMNDB425 *count* statements Action**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function when multiple SQL statements are processed. *count* is the type of statement and *Action* indicates the type of operation. For example, "executed".

**User response:** No action required. Informational message.

---

**FMNDB426 SQL execution failed** (*count statement(s) executed successfully*).

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function, after multiple SQL statements were processed. The execution of at least one SQL statement failed, however *count* statements were processed successfully.

**User response:** Examine the list of SQL statements processed to determine whether the failure to execute a statement (or statements) is appropriate.

---

**FMNDB427 No columns selected (short). The EXECUTE command cannot be executed because no columns have been selected from which to retrieve data.** (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. The user attempted to execute the SQL SELECT statement. However, the SELECT statement is incomplete and cannot be executed. There are no columns specified in the SELECT clause.

**User response:** You need to specify at least one column in the SELECT statement, for the statement to be executable. Select a column by typing 'S' next to the entry for the column, or use 'ALL' to select all columns.

---

**FMNDB429 Value required (short). A value must be entered to build a where clause predicate.** (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. The user entered a value in the 'Op' (Operator) column for a column, but no value was entered in the corresponding 'Value' column. A value is required to construct a valid WHERE clause, which has the form: COLUMN *operator value*.

**User response:** Enter a value appropriate for the column being included in the WHERE clause.

---

**FMNDB431 Invalid operator (short). Enter a valid logical operator: AND, OR, NOT, NOR. NOT represents AND NOT and NOR represents OR NOT.** (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. The user entered an invalid value in the 'LOp' (Logical Operator) column for a column. The LOp column is used to specify a logical operator. This is used between any WHERE clause predicates specified for the SQL statement being prototyped.

**User response:** Enter one of the values shown in the long version of the message; the default value is 'AND',

selected automatically when no value is specified.

---

**FMNDB432 Invalid operator (short). Enter a valid expression operator: =, #,<,>,<=,>=,IN, NI, LI, NL. LI represents the SQL LIKE operator, NL represents NOT LIKE, and NI represents NOT IN.** (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. The user entered an invalid value in the 'Op' (Operator) column for a column. The Op column is used to specify a comparison operator. This is used in the WHERE clause predicate being added to the SQL statement being prototyped.

**User response:** Enter one of the values shown in the long version of the message; the default value is '=', selected automatically when no value is specified.

---

**FMNDB433 Invalid margins (short). The left margin must be less than or equal to the right margin, and both values must be greater than zero.** (long).

**Explanation:** This message is issued by the FM/DB2 Edit/Execute SQL (Data Set) function. The user entered values in the "First column" and "Last column" fields that are invalid. Suggested values are:

- (First column) and 72 (Last column), corresponding to the margins when editing a fixed-block data set with logical record length of 80 and an ISPF profile setting of 'NUMBER ON STD'.
- (First column) and 80 (Last column), corresponding to the margins when editing a fixed-block data set with logical record length of 80 and an ISPF profile setting of 'NUMBER OFF'.

**User response:** Consider the recommended values outlined in the explanation. Any values entered should meet the following requirement:  $0 < \text{first} \leq \text{last} \leq \text{logical record length}$ , where:

- First is the value entered in the "First column" field.
- Last is the value entered in the "Last column" field.
- Logical record length is the LRECL for the data set being edited. You can use ISPF option 3.2 to determine the LRECL for a data set. To enhance the usability of the data set, the value for last should be significantly larger than the value for first.

---

**FMNDB434 Nothing to explain (short). The EXPLAIN command cannot be executed because no statement has been entered for explanation.** (long).

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function. The user entered the EXPLAIN command. However, there was no SQL statement in the "SQL Statement" area of the



panel. The EXPLAIN command requires an SQL statement to process.

**User response:** Enter an SQL statement in the "SQL Statement" area of the panel and reissue the EXPLAIN command.

---

**FMNDB435 Invalid statement type (short). An invalid statement or a statement that is not explainable was found in the statement entry area. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function. The user entered the EXPLAIN command. However, the SQL statement entered is not "explainable".

**User response:** Not every SQL statement is "explainable". See the DB2 SQL Reference manual description of the EXPLAIN statement, for a detailed explanation of which SQL statements are explainable. SELECT, MERGE, INSERT, and some types of UPDATE and DELETE statements are considered "explainable".

---

**FMNDB436 Statement executed, no rows deleted.**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function. The user entered a DELETE SQL statement, and the statement was executed. However, DB2 reported that no rows were deleted.

**User response:** No action required. Informational message.

---

**FMNDB437 Statement executed, no rows updated.**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function. The user entered an UPDATE SQL statement, and the statement was executed. However, DB2 reported that no rows were updated.

**User response:** No action required. Informational message.

---

**FMNDB438 SQL execution halted (short). Execution of the SQL statement was halted because the user pressed CANCEL on the predictive governor. (long).**

**Explanation:** This message is issued by the FM/DB2 Enter, Execute, and Explain SQL function. The execution of an SQL statement was halted because it exceeds values set by the SQL predictive governor. In this situation a warning pop-up panel is displayed, and the user elected to CANCEL execution of the statement.

**User response:** No action required. Informational message.

---

**FMNDB439 CONNECT stmt. Invalid (short). A CONNECT statement cannot be executed. This statement can only be specified within an application program. (long).**

**Explanation:** This message is issued by the FM/DB2 Edit/Execute SQL (Data Set) function. The input data set contains a CONNECT SQL statement. This statement cannot be dynamically prepared and executed. It can only be imbedded in an application program. The statement cannot be executed.

**User response:** Remove the CONNECT statement and retry the operation.

---

**FMNDB440 VIEW (clustered sampling)**

**Explanation:** This message is displayed by the FM/DB2 Editor, when using clustered sampling.

**User response:** No action required. Informational message.

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**FMNDB441 TABLE (clustered sampling)**

**Explanation:** This message is displayed by the FM/DB2 Editor, when using clustered sampling.

**User response:** No action required. Informational message.

---

**FMNDB442 VIEW (random sampling)**

**Explanation:** This message is displayed by the FM/DB2 Editor, when using random sampling.

**User response:** No action required. Informational message.

---

**FMNDB443 TABLE (random sampling)**

**Explanation:** This message is displayed by the FM/DB2 Editor, when using random sampling.

**User response:** No action required. Informational message.

---

**FMNDB450 Copy not allowed (short). The index has not been defined with COPY YES, so it cannot be selected for copying. (long).**

**Explanation:** This message is issued by the FM/DB2 "DB2 Utilities" function. The user selected an index created with the 'COPY NO' option for copy. This is not allowed.

**User response:** You can only copy a DB2 index when it was originally created with the 'COPY YES' option. See the DB2 Utilities Guide and Reference for more information.

---

**FMNDB451** Chng limits not allowed (short). Change limits cannot be specified because the table space has not been defined with TRACKMOD YES. (long).

**Explanation:** This message is issued by the FM/DB2 "DB2 Utilities" function. The user entered change limit values for a table space defined with 'TRACKMOD NO'. This is not allowed.

**User response:** You can only specify change limit values for the DB2 COPY utility when the table space was defined with 'TRACKMOD YES'. See the DB2 Utilities Guide and Reference for more information.

---

**FMNDB453** Cannot recover object (short). Either the DB2 object specified does not exist in the DB2 catalog, or no SYSCOPY entries exist for the DB2 object. (long).

**Explanation:** This message is issued by the FM/DB2 "DB2 Utilities" function. The user is attempting to recover either a table space, or index. When FM/DB2 retrieved a list of entries from SYSIBM.SYSCOPY, no rows were returned. This might occur when wildcard values for database name and table and index space name were specified on the function entry panel. There are no matching table and index spaces. Another possibility is that there are matching table and index spaces, but no suitable image copies are available for these objects, so the RECOVER utility cannot execute.

**User response:** No action required. Informational message.

---

**FMNDB454** Invalid change limit (short). The change limit must be an integer value between 0 and 100. (long).

**Explanation:** This message is issued by the FM "DB2 Utilities" function. Change limit values for the COPY utility are expressed as percentage values (0-100 inclusive). The value entered is out of range.

**User response:** Specify a value in the range 0-100 inclusive. See the DB2 Utilities Guide and Reference for more information.

---

**FMNDB455** Function canceled (short). Load utility processing was canceled by user. (long).

**Explanation:** This message is issued by the FM/DB2 "DB2 Utilities" function. The user pressed the PFKey assigned to CANCEL (or typed the CANCEL command), when processing for a LOAD utility job, using an FM template, was incomplete.

**User response:** No action required. Informational message.

---

**FMNDB456** Function completed (short). Load utility processing has completed. (long).

**Explanation:** This message is issued by the FM/DB2 "DB2 Utilities" function. Processing for a DB2 LOAD utility completed normally.

**User response:** No action required. Informational message.

---

**FMNDB457** Choose at least one item (short). For the given processing option, you must choose at least one item. (long).

**Explanation:** This message is issued by the FM/DB2 "OPTIONS Options" panel. The user selected a processing option of 4 "Options to be included", but did not select any of the available options. At least one option must be selected.

**User response:** Select one or more of options: 'PREVIEW', 'LISTDEFDD', 'TEMPLATEDD', and 'EVENT'.

---

**FMNDB458** Null indicator mismatch (short). The source DB2 column *Column name* is not nullable and yet the corresponding target data set field is associated with a nullable field. (long).

**Explanation:** This message is issued by the FM/DB2 Unload utility. During mapping between the columns of the source object and fields of the output template, a mismatch for column *Column name*, and the corresponding field, has been detected. *Column name* is defined as NOT NULL. However, the target field has an associated null field indicator.

**User response:** This usually indicates a mapping problem. The target field for a column defined as "NOT NULL" should not have a null field indicator. Check the target template copybook or template definition and make changes. Retry the operation.

---

**FMNDB459** Enter required field (short). The field where the cursor is positioned is mandatory. (long).

**Explanation:** This message is issued by the FM/DB2 "OPTIONS Options" panel. The user selected a processing option of 3 ('KEY'), but did specify a key value.

**User response:** Specify a key value in the field indicated by the cursor position.

---

**FMNDB460** Function canceled (short). Unload table utility processing was canceled by user. (long).

**Explanation:** This message is issued by the FM/DB2 Unload utility, when the user presses the PFKey assigned to CANCEL (or types the CANCEL

command), prior to completion of the function.

**User response:** No action required. Informational message.

---

**FMNDB461 Function completed (short). Unload utility processing has completed. (long).**

**Explanation:** This message is issued by the FM/DB2 Unload utility, when the function completes normal processing.

**User response:** No action required. Informational message.

---

**FMNDB462 Settings failure (short). The TEMPLATE, LISTDEF, or OPTIONS settings for the current subsystem may be incorrect. (long).**

**Explanation:** This message is issued during FM/DB2 options initialization. An error was encountered when storing values in an ISPF table in the user ISPF profile.

**User response:** Logoff completely, logon again, and retry the operation. If the problem persists, try deleting all FMN2\* members from the user ISPF profile data set. If this fails to resolve the problem contact IBM support.

---

**FMNDB463 Setting failure (short). When you return from another subsystem, the changes that you made to LISTDEF, TEMPLATE, or OPTIONS settings may not be restored. (long).**

**Explanation:** This message is issued during FM/DB2 options initialization. An error was encountered when storing values in an ISPF table in the user's ISPF profile.

**User response:** Logoff completely, logon again, and retry the operation. If the problem persists, try deleting all FMN2\* members from the user ISPF profile data set. If this fails to resolve the problem contact IBM support.

---

**FMNDB464 Null indicator mismatch (short). A null indicator byte maps to field name *field name* (column number), but the name does not contain 'NULL'. (long).**

**Explanation:** This message is issued by the FM/DB2 Unload utility. A problem has been detected when mapping columns of the DB2 object to corresponding fields in the File Manager (base) template for the unloaded data.

**User response:** Refer to the online tutorial topic "Null indicator byte processing", accessed as follows: 3.9.7.1.7 (Utilities > Utilities > Unload Utility > Unload (table) > Null indicator byte processing. Briefly, when using a File Manager (base) template to describe the format for the UNLOAD data set, it is possible to use a field with length > 1 byte for a DB2 null indicator. However, the

field name must include the string 'NULL' to be automatically mapped.

---

**FMNDB465 Null indicator mismatch (short). A null indicator byte maps to the byte before the first field. (long).**

**Explanation:** This message is issued by the FM/DB2 Unload utility. This is a "should not occur" error.

**User response:** Check the template for the target (unload) data set is appropriate for the DB2 object being unloaded. Consider using an FM/DB2 template generated from the source object to map the unloaded data. If both of these techniques fail to resolve the problem, contact IBM support.

---

**FMNDB467 Null indicator mismatch (short). The null indicator byte *column name* maps to field *field name* (column number) which is mapped already to another table column. (long).**

**Explanation:** This message is issued by the FM/DB2 Unload utility. A problem has been detected when processing the mapping for a DB2 null indicator for column *column name*.

**User response:** Refer to the online tutorial topic "Null indicator byte processing accessed as follows: 3.9.7.1.7 (Utilities > Utilities > Unload Utility > Unload (table) > Null indicator byte processing. Briefly, a field in the template for the unload data set can only be mapped to a single column, or DB2 null indicator.

---

**FMNDB468 Utility service failed (short). FM DB2 initiated an unload table utility operation from export. However, the unload table utility failed to initialize properly. (long).**

**Explanation:** This message is issued when there is a problem generating a JCL deck using ISPF file tailoring. This is a "should not occur" error under normal circumstances.

**User response:** Contact the person responsible for installing and maintaining FM/DB2. Possible causes of this error include set up related issues such as the SFMNSLIB library not being available to the FM/DB2 user.

---

**FMNDB469 Settings failed (short). The TEMPLATE, LISTDEF, or OPTIONS settings (for subsystem DB2 SSID.) cannot be loaded or the associated settings could not be found. (long).**

**Explanation:** This message is issued during FM/DB2 options processing. Once cause of this error is a missing options module (FMN2POPT), or no definitions for the current DB2 subsystem.

**User response:** Contact the person who is responsible for installing/maintaining FM/DB2. Defining FMN2SSDM macro entries for every DB2 system accessed by FM/DB2 is a required installation and customization step. Contact IBM support if analysis shows no obvious problem in the FMN2POPT module.

---

**FMNDB470** Init install settings (short). The installation-defined settings for this subsystem are used to set options TEMPLATE, LISTDEF, and OPTIONS. (long).

**Explanation:** This message is issued during FM/DB2 Options processing. When processing TEMPLATE, LISTDEF or OPTIONS, no options had previously been saved in the user's ISPF profile. The option values have been initialized based on any values set in the FMN2POPT (installation) module.

**User response:** No action required. Informational message.

---

**FMNDB471** Init FM DB2 settings (short). The installation defined setting for this subsystem is: CONNECT = ANY. The FM/DB2 defaults are used for options TEMPLATE, LISTDEF, and OPTIONS. (long).

**Explanation:** This message is issued during FM/DB2 Options processing. When processing the connection to a DB2 subsystem, the combination of CONNECT=ANY (FMN2POPI macro parameter) and no FMN2SSDM macro entry for the DB2 subsystem was detected. In this situation there can be no installation settings for TEMPLATE, LISTDEF and OPTIONS options (since there is no FMN2SSDM macro entry where these settings are defined). The FM/DB2 defaults are used to initialize the option values.

**User response:** No action required. Informational message. The FM/DB2 Installation and Customization Guide lists defining an FMN2SSDM macro entry for every DB2 system that FM/DB2 may connect to as a required step.

---

**FMNDB472** Init FM DB2 settings (short). FM DB2 default settings for options TEMPLATE, LISTDEF, and OPTIONS are used. Your installation defined settings uses an old version of the FMN2SSDM macro. (long).

**Explanation:** This is a "should not occur" error. The FMN2POPT module in use is out-of-date and should be reassembled with the latest macro versions.

**User response:** Contact the person responsible for installing or maintaining FM/DB2. Reassemble the FMN2POPT module using the directions in the File Manager Installation and Customization Guide.

Carefully check the SYSLIB DD statement to ensure that the current version of SFMNSAM1 libraries is in use, and check the SYSLMOD DD statement to ensure that the output module is located in the appropriate library.

---

**FMNDB473** Must provide name (short). A LISTDEF name must be provided when specification LISTDEF is selected. (long).

**Explanation:** The user selected the 'LISTDEF' specification on the FM/DB2 "DB2 Utilities" function entry panel. However, no value was entered in the "LISTDEF name" field. The use of a LISTDEF specification requires a non-blank LISTDEF name.

**User response:** Enter a valid LISTDEF name, and retry the operation; or change the specification to "Object name".

---

**FMNDB474** /\* NULLABLE COLUMN MAPPING

**Explanation:** This is a message insert used by the FM/DB2 Unload utility when preparing JCL.

**User response:** No action required. This message may be issued when documenting the mapping of nullable DB2 columns in the DB2 object to corresponding fields in the template for the unloaded data.

---

**FMNDB477** /\* F (FOOTNOTE) -

**Explanation:** This is a message insert used by the FM/DB2 Unload utility when preparing JCL.

**User response:** No action required. This message may be issued when documenting the mapping of nullable DB2 columns in the DB2 object to corresponding fields in the template for the unloaded data.

---

**FMNDB478** /\* \* = FIELD CORRESPONDING TO NULL INDICATOR BYTE IS LARGER

**Explanation:** This is a message insert used by the FM/DB2 Unload utility when preparing JCL.

**User response:** No action required. This message may be issued when documenting the mapping of nullable DB2 columns in the DB2 object to corresponding fields in the template for the unloaded data.

---

**FMNDB479** /\* THAN ONE BYTE. INDICATOR MAPS TO LAST BYTE.

**Explanation:** This is a message insert used by the FM/DB2 Unload utility when preparing JCL.

**User response:** No action required. This message may be issued when documenting the mapping of nullable DB2 columns in the DB2 object to corresponding fields in the template for the unloaded data.



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**FMNDB480** WHERE clause too long (short). The WHERE clause is longer than 32767 bytes, and cannot be processed. Specify a shorter WHERE clause. (long).

**Explanation:** This message may be issued when exiting the ISPF edit session used to specify a WHERE clause in the FM/DB2 template editor (Column Selection/Edit panel). The WHERE clause exceeds the maximum allowable length of 32767 bytes, and cannot be processed.

**User response:** Specify a shorter WHERE clause. Remove any redundant "white space" in the clause and retry the operation.

---

**FMNDB481** Invalid reference (short). The correlation reference *Reference* is invalid. Valid values are #1 - *Maximum reference* inclusive. (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. When using an explicit table correlation reference (example #n, n=1, 2 ..) the n must not be greater than the number of DB2 objects entered when the function was first started. "n" must also be a numeric value, example #F is invalid.

**User response:** Correct the table correlation reference, and retry the operation.

---

**FMNDB482** Invalid column name (short). *Column name* is not a column of the referenced table. (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. A qualified column name was entered in the "Value" column, presumably to indicate a join between two columns. The table correlation reference is valid but the column name is not.

**User response:** Check the value entered for spelling or other errors. Check that the column name is a column of the table indicated by the table correlation reference.

---

**FMNDB483** Ambiguous reference (short). This column name appears in more than one of the selected tables. Use a correlation reference, eg #1.COLNAME to identify the required. (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. A value entered in the "Value" column matches more than one column name in the DB2 objects selected for prototyping. A table correlation reference needs to be used to remove any ambiguity.

**User response:** Precede the column name with a table correlation reference, example #n., where "n" is a positive integer.

---

**FMNDB484** Ambiguous input (short). The value specified is a column name, but can also be interpreted as a constant. To specify a constant enclose the value in quotes. To specify a column use a correlation reference, eg #1.COLNAME. (long).

**Explanation:** This message is issued by the FM/DB2 Basic SELECT Prototyping function. A value entered in the "Value" column matches a column name in a DB2 object selected for prototyping. There are two interpretations for the value entered:

1. A comparison between the column and a string constant.
2. A join between the column and the column name entered.

**User response:** Depending on context, either enclose the value in quotes, (to indicate the first interpretation shown above) or precede to the column name with a table correlation reference (example #n.) to indicate the second interpretation above.

---

**FMNDB490** Parameters have been reset to defaults.

**Explanation:** This message is issued in response to the RESET command entered on an FM/DB2 options panel. The values on the panel have been reset to the default values.

**User response:** No action required. Informational message.

---

**FMNDB491** RESET command failed.

**Explanation:** This message is issued in response to the RESET command, entered on an FM/DB2 options panel. The RESET operation failed, this is a "should not occur" error.

**User response:** Exit FM/DB2 completely. Start FM/DB2 again, and retry the operation. If the problem recurs, check for ISPF-related problems such as a full user ISPF profile data set. If there are no obvious external problems, contact IBM support.

---

**FMNDB500** Copying...

**Explanation:** This message is issued by the FM/DB2 copy utility to indicate that copy operations are in progress.

**User response:** No action required. Informational message.

---

**FMNDB501** *number of rows* rows

**Explanation:** This message is issued by the FM/DB2 copy utility to give an indication of progress for the current copy operation. *number of rows* is the number of rows that have been processed.

**User response:** No action required. Informational message.

---

**FMNDB502** *number of rows(s) copied (short). Number of rows row(s) copied from DB2 object source DB2 object to target DB2 object*

**Explanation:** This message is issued by the FM/DB2 copy utility, at the completion of the copy operation, to report the number of rows copied from *source DB2 object* to *target DB2 object*. This message indicates that there were no duplicate key or referential integrity errors encountered.

**User response:** No action required. Informational message.

---

**FMNDB503** *number of rows row(s) copied. insert string*

**Explanation:** This message is issued by the FM/DB2 copy utility, at the completion of the copy operation, to report the number of rows copied. *insert string* contains additional information, typically messages FMNDB504, FMNDB505, or FMNDB507.

**User response:** No action required. Informational message.

---

**FMNDB504** *count duplicate row(s) ignored.*

**Explanation:** This message is issued by the FM/DB2 copy utility, at the completion of the copy operation, to report the number of duplicate row errors that were ignored. This message may be issued as part of message FMNDB503.

**User response:** No action required. Informational message.

---

**FMNDB505** *count RI/Constraint errors.*

**Explanation:** This message is issued by the FM/DB2 copy utility, at the completion of the copy operation, to report the number of referential integrity, or constraint errors that were encountered. This message may be issued as part of message FMNDB503.

**User response:** No action required. Informational message.

---

**FMNDB506** *Copying*

**Explanation:** This is a message insert used to construct a larger message.

**User response:** No action required.

---

**FMNDB507** *count duplicate row(s) updated.*

**Explanation:** This message is issued by the FM/DB2 copy utility, at the completion of the copy operation, to report the number of duplicate rows that were

updated. This message may be issued as part of message FMNDB503.

**User response:** No action required. Informational message.

---

**FMNDB508** *->*

**Explanation:** This is a message insert used to construct a larger message.

**User response:** No action required.

---

**FMNDB509** *message*

**Explanation:** This is a message insert used by the FM/DB2 copy utility. It contains a larger message constructed for other messages.

**User response:** No action required.

---

**FMNDB510** *Function canceled (short). Copy function was canceled by user. (long).*

**Explanation:** The user terminated the FM/DB2 copy function by issuing the CANCEL command, typically by pressing the PF12 PFKey (assigned to CANCEL by default).

**User response:** No action required.

---

**FMNDB511** *Rollback completed (short) Copy of source DB2 object to target DB2 object was rolled back due to errors.*

**Explanation:** This message is issued by the FM/DB2 copy utility when the current copy operation was terminated because of errors. A DB2 ROLLBACK is issued automatically in this situation, and all copy operations are backed out.

**User response:** Determine why the copy operation was terminated, resolve the error condition, and retry the operation.

---

**FMNDB512** *Copy canceled (short) Output object target DB2 object cannot be same as input object source DB2 object.*

**Explanation:** The same DB2 object name was specified on the "from" and "to" panels of the FM/DB2 copy utility. Copy from an object to itself is not supported. The Copy operation was canceled.

**User response:** Specify different source or target DB2 objects, and retry the operation.

---

**FMNDB518** *Audit failure (short) Auditing to SMF failed - function terminated. Value returned by SMFWTM macro: RC=return code (Dec). (long)*

**Explanation:** FM/DB2 is set up to write audit records

to SMF for the current function. A failure occurred while attempting to write an audit record to SMF. The return code returned by the SFMWTM macro call is *return code*, expressed in decimal. The current FM/DB2 function is terminated.

**User response:** This error usually indicates a set up problem. Possible reasons for an auditing failure to SMF include:

1. The FMNSMF program is not located in an authorized library.
2. The FMN2POPT module does not have a valid number specified for the SMFNO parameter.
- 3.

Consult your System Programmer for assistance in resolving the cause of the error.

---

**FMNDB519 Audit failure (short) Auditing to SMF failed - function terminated. TSOLNK RC=*return code* (Dec) REASON CODE=*reason code*.**

**Explanation:** FM/DB2 is set up to write audit records to SMF for the current function. A failure occurred while attempting to write an audit record to SMF. The TSOLNK call resulted in return code *return code*, and reason code *reason code*, both expressed in decimal. The current FM/DB2 function is terminated.

**User response:** This error usually indicates a set up problem. Possible reasons for an auditing failure to SMF include:

- The FMNSMF program is not located in an authorized library.
- The FMN2POPT module does not have a valid number specified for the SMFNO parameter.
- 

Consult your System Programmer for assistance in resolving the cause of the error.

---

**FMNDB520 SQL statement too long (short) The SQL statement is > 32K-2 in length. The maximum length for an SQL statement for DB2 versions 6 or 7 is 32765 characters. The statement cannot be executed. (long)**

**Explanation:** FM/DB2 detected an SQL statement greater than the 32K-2 limit, which is applicable to DB2 versions prior to DB2 version 8. The SQL statement cannot be executed.

**User response:** Simplify the SQL statement, and retry the operation.

---

**FMNDB521 SQL statement too long (short) The SQL statement is > 2M in length. The maximum length for an SQL statement for DB2 versions 8 or later is 2097152 characters. The statement cannot be executed.**

**Explanation:** FM/DB2 detected an SQL statement greater than the 2M (2097152) limit, which is applicable to DB2 versions 8, and later. The SQL statement cannot be executed.

**User response:** Simplify the SQL statement, and retry the operation.

---

**FMNDB530 ALIAS**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB531 AUX. TABLE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB532 DATABASE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB533 FUNCTION**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB534 GBL. TMP. TABLE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB535 INDEX**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB536 PROCEDURE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB537 ROLE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB538 SEQUENCE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB539 STOGROUP**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB540 SYNONYM**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB541 TABLE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB542 TABLESPACE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB543 TRIGGER**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB544 TRUSTED CONTEXT**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB545 TYPE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

---

**FMNDB546 VIEW**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB550 COLLECTION**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB551 JAR**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB552 PACKAGE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB553 PLAN**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB554 SCHEMA**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB560 SYSTEM**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB561 USE**

**Explanation:** This is a message insert used by the FM/DB2 audit report.

**User response:** No action required.

---

**FMNDB600 Global Settings**

**Explanation:** This message appears on some FM/DB2 options panels to indicate that the global options are being processed. FM/DB2 offers two levels of option settings for most functions. These are:

1. Global options, selected using option 0 from the FM/DB2 main menu. These options are saved in

the ISPF profile data set for the user in the ISPF PROFILE pool, and persist between each FM/DB2 session.

2. Local options, selected from the function entry panel ("Edit options"). These options persist until the user exits the current FM/DB2 function, and overrides any Global options that may be in effect. See the File Manager User's Guide for DB2 data for a full explanation.

**User response:** No action required. Informational message.

---

**FMNDB601 Changes discarded (short) Invalid changes to the default high level qualifier have been discarded. (long)**

**Explanation:** An invalid value for the "default high level qualifier" field was specified, followed by an attempt to leave the panel. The invalid value has been discarded.

**User response:** Examine the value for "default high level qualifier" and re-enter the desired value. Press enter to validate the value, prior to leaving the panel.

---

**FMNDB602 Changes discarded (short) Invalid changes to the display width values have been discarded. (long).**

**Explanation:** An invalid value for one of the "Display width for varying columns" fields was entered on the "Object List Options (2 of 2)" panel, followed by an attempt to leave the panel. The invalid value (or values) has been discarded.

**User response:** Use the field level help for each field (place the cursor on the field, press the HELP key, PF1 by default) to determine the valid values for each field. After entering a new value, press ENTER to validate the values, prior to leaving the panel.

---

**FMNDB650 Table Edit.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB651 Table Browse.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB652 Select Statement Edit.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB653 Select Statement Browse.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB654 Table Edit (Related).**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB655 Table View.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB656 Select Statement View.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB660 DB2 Browse.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB661 DB2 Edit.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB662 Advanced SELECT Prototyping.**

**Explanation:** This is a message insert used as a panel title.

**User response:** No action required.

---

**FMNDB663 Create Table: Nulls and Default Values.**

**Explanation:** This is a message insert used as a panel title.

**User response:** No action required.

---

**FMNDB664 Create Table: Nulls**

**Explanation:** This is a message insert used as a panel title.

**User response:** No action required.



---

**FMNDB665 DB2 View.**

**Explanation:** This is a message insert used by the FM/DB2 editor as a panel title.

**User response:** No action required.

---

**FMNDB670 SQL Statement.**

**Explanation:** This is a message insert used in FM/DB2 panel text.

**User response:** No action required.

---

**FMNDB671 Record Number.**

**Explanation:** This is a message insert used in FM/DB2 panel text.

**User response:** No action required.

---

**FMNDB672 Press.**

**Explanation:** This is a message insert used to construct a larger message.

**User response:** No action required.

---

**FMNDB673 PF3 (End) or Enter.**

**Explanation:** This is a message insert used to construct a larger message.

**User response:** No action required.

---

**FMNDB674 PF12 (Cancel).**

**Explanation:** This is a message insert used to construct a larger message.

**User response:** No action required.

---

**FMNDB675 to terminate the import.**

**Explanation:** This is a message insert used in the FM/DB2 import utility to create a larger message.

**User response:** No action required.

---

**FMNDB700 Audit Trail Report.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB701 Formatted Audit Event Records.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

---

**FMNDB702 Date: *date*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB703 Time: *time*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB707 Summary Statistics.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB708 DB2 access commenced on *date* at *time* by user ID *TSO userid*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. It shows the start date *date*, and time *time*, when the FM/DB2 function being audited first accessed DB2, and the TSO user ID *TSO user ID* associated with the transaction.

**User response:** No action required.

---

**FMNDB709 DB2 access completed on *date* at *time*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. It shows the completion date *date*, and time *time*, for the FM/DB2 function being audited.

**User response:** No action required.

---

**FMNDB710 Audit trail for *function* *function*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. It shows the FM/DB2 function *function* for which the audit report applies.

**User response:** No action required.

---

**FMNDB711 Audit description: *description*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *description* is a user-specified value entered on the "Print Audit Trail" panel.

**User response:** No action required.

---

**FMNDB712 Data set name: *data set name*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *data set name* is the data set name used to produce the audit report, and is the value entered on the "Print Audit Trail" panel.

---

**User response:** No action required.

---

**FMNDB720 System Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB721 MVS System Id: *MVS ID*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *MVS ID* shows the z/OS system ID on which the FM/DB2 function was executed.

**User response:** No action required.

---

**FMNDB722 DB2 Subsystem: *DB2 SSID*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *DB2 SSID* is the DB2 subsystem or group identifier to which FM/DB2 was connected when the function being audited was executed.

**User response:** No action required.

---

**FMNDB723 Current SQLID: *SQLID*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *SQLID* shows the DB2 authid associated with the connection to DB2 when the FM/DB2 function was executed.

**User response:** No action required.

---

**FMNDB730 DB2 Object Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB731 Source DB2 Object Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB732 Target DB2 Object Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB733 Location: *location*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *location* is the remote server ID (which may be blank) that identifies the DB2 object processed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB734 DB2Owner: *owner*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *owner* is the owner of the DB2 object processed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB735 Name: *Name*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *name* is the name of the DB2 object processed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB736 Database: *database*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *database* is the database name, which may be blank, associated with the DB2 object processed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB737 Table Space: *table space*.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *table space* is the table space name, which may be blank, associated with the DB2 object processed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB738 Result Table Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB739 SELECT statement:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB740 Template Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB741 Source Template Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB742 Target Template Information:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB750 Audit event number: *number***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *number* is a positive integer. Each audit event is assigned a consecutive number starting at 1, the numbers increment.

**User response:** No action required.

---

**FMNDB751 Data action on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *action* is the type of operation. For example INSERT, DELETE, and UPDATE. *date* and *time* show the date and time when the SQL statement was executed./

**User response:** No action required.

---

**FMNDB752 All data action on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *action* is the type of operation. For example FETCH, or CHANGE. *date*, and *time*<*mv*> show the date and time when the SQL statement was executed.

**User response:** No action required.

---

**FMNDB753 COMMIT issued on date at time, SQLCODE=SQLCODE.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A DB2 COMMIT was issued on date *date* at time *time*. The SQLCODE associated with the COMMIT was *SQLCODE*.

**User response:** No action required.

---

**FMNDB754 ROLLBACK issued on date at time, SQLCODE=SQLCODE.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A DB2 ROLLBACK was issued on date *date* at time *time*. The SQLCODE associated with the ROLLBACK was *SQLCODE*.

**User response:** No action required.

---

**FMNDB755 All pending changes committed.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

---

**FMNDB756 All pending changes backed out. \*\*\***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB757 SQLCODE=SQLCODE, row count row(s) affected.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *SQLCODE* is the SQLCODE associated with an SQL statement, which might have affected 1 or more rows. *row count* shows the number of rows, as reported by DB2, that were affected by the SQL statement. For SQL statements that affect DB2 objects subject to referential integrity constraints, the row count value does not show rows affected in objects other than the primary object affected by the SQL statement./

**User response:** No action required.

---

**FMNDB758 DB2 command issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. It shows the date *date* and time *time* that a DB2 command was issued.

**User response:** No action required.

---

**FMNDB759 SQLCODE=SQLCODE, mass delete.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *SQLCODE* shows the SQLCODE for a "mass delete" SQL statement, such as "DELETE \* FROM *some DB2 object*."

**User response:** No action required.

---

**FMNDB760 SQL statement:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB761 Column Name Key Type Original Data**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB762 DB2 command:**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---



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**FMNDB763 \*\*\* excludes rows deleted via mass delete \*\*\***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB764 DDL statements: count**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of DDL SQL statements issued by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB765 Privilege statements: count**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of SQL statements issued by the FM/DB2 function that might affect DB2 privileges, typically GRANT and REVOKE.

**User response:** No action required.

---

**FMNDB768 DB2 commands: count**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of DB2 commands issued by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB769 updated**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB770 CREATE object type issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A CREATE statement for object *object type* was issued on date *date* at time *time*.

**User response:** No action required.

---

**FMNDB771 DROP object type issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A DROP statement for object *object type* was issued on date *date* at time *time*.

**User response:** No action required.

---

---

**FMNDB772 ALTER object type issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. An ALTER statement for object *object type* as issued on date *date* at time *time*.

**User response:** No action required.

---

**FMNDB773 RENAME object type issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A RENAME statement for object *object type* was issued on date *date* at time *time*.

**User response:** No action required.

---

**FMNDB774 GRANT issued on date at time.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A GRANT statement was issued on date *date* at time *time*.

**User response:** No action required.

---

**FMNDB775 REVOKE issued on date at time**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. A REVOKE statement was issued on date *date* at time *time*.

**User response:** No action required.

---

**FMNDB776 SQLCODE=+100, no matching rows. \*\***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB777 SQLCODE=+100, no rows fetched. \*\***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB778 SQLCODE=SQLCODE, successful execution.**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. An SQL statement was processed, the SQLCODE was *SQLCODE*; the statement was successfully executed.

**User response:** No action required.

---

**FMNDB779 SQLCODE=SQLCODE, statement failed. \*\*\***

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. An SQL statement was processed, the SQLCODE was *SQLCODE*. The statement was not successfully executed.

**User response:** No action required.

---

**FMNDB780 Total SQL/DB2 statements:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the total of DB2 and SQL statements executed by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB781 Rows inserted:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows how many rows were inserted by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB782 Rows deleted:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows how many rows were deleted by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB783 Rows updated:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows how many rows were updated by the FM/DB2 function./

**User response:** No action required.

---

**FMNDB784 TOTAL Data base changes:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the total number of changes made by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB785 Records bypassed:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of records bypassed, as a result of record selection./

**User response:** No action required.

---

**FMNDB786 Row count (in):** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of rows read by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB787 Row count editor**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of rows read by the FM/DB2 editor.

**User response:** No action required.

---

**FMNDB788 Row count (out):** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of rows written by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB789 Rollbacks reported:** *count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *count* shows the number of ROLLBACK statements issued by the FM/DB2 function.

**User response:** No action required.

---

**FMNDB790 Audit Trail Report Options**

**Explanation:** This is a message insert used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB791 Maximum Print Lines per Page:** *line count*

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. *line count* is the maximum number of print lines per page of the audit report.

**User response:** No action required.

---

**FMNDB792 Print Only Changed Fields on an Update:** YES|NO

**Explanation:** This is a message insert used in the FM/DB2 audit report utility. YES indicates that only those fields that were changed by an UPDATE operation are shown in the audit report.

**User response:** No action required.

---

**FMNDB800** *count* rows exported (short) *count* row(s) exported from DB2 object *source* DB2 object to file *file name*. (long).

**Explanation:** This message is issued at the end of an FM/DB2 export function. The number of rows exported, *count* the DB2 object from which the rows were exported, *source* DB2 object and the output file name that contains the exported data, *file name* are shown.

**User response:** No action required.

---

**FMNDB801** Export canceled (short) Export function was canceled by the user, or error encountered while processing the copybook. (long).

**Explanation:** This message is issued by the FM/DB2 export utility. The current FM/DB2 export function is canceled and the FM/DB2 export function entry panel is redisplayed.

**User response:** If the user pressed the END or CANCEL PFkeys on the export "To" panel, none. If the user pressed ENTER on the export "To" panel, examine any copybook or template specified for the export data set for errors.

---

**FMNDB802** Exporting...

**Explanation:** This message is issued by the FM/DB2 export utility to indicate that export operations are in progress.

**User response:** No action required. Informational message.

---

**FMNDB803** *count rows imported (short) count rows imported, from file input file name to DB2 object target DB2 object. duplicate count duplicate rows not imported. error count rows in error not imported. selection count rows dropped via record selection. REXX drop count rows dropped by REXX proc. (long).*

**Explanation:** This message is issued at the end the FM/DB2 import utility, and shows summary statistics for the import operation.

- *count* is the number of rows imported.
- *duplicate count* is the number of duplicate row errors that were encountered. The record that caused the duplicate row error has not been imported.
- *error count* is the number of records that generated errors other than a duplicate row error. The record that caused the error has not been imported.
- *selection count* is the number of records (rows) that were dropped as a result of record selection.
- *REXX drop count* is the number of records (rows) that were dropped because of user-specified processing in the REXX procedure. The same information is presented on the "Import Report" panel. This message is issued when the Update option for duplicate key errors is not selected on the import options panel.

**User response:** No action required.

---

**FMNDB804** Import canceled (short) Import function was canceled by the user. (long).

**Explanation:** The user canceled the import operation, by pressing the END or CANCEL PFkey.

**User response:** No action required. Informational message.

---

**FMNDB805** Importing...

**Explanation:** This message is issued by the FM/DB2 import utility to indicate that import operations are in progress.

**User response:** No action required. Informational message.

---

**FMNDB806** Rollback completed (short) Import of import file name to target DB2 object was rolled back due to errors. *count rows rolled back. duplicate count duplicate rows not imported. updated count duplicate rows updated. not updated count duplicate rows not updated. error count rows in error not imported. drop count rows dropped by record selection. REXX drop count rows dropped by REXX procedure. Note, that PF12/CANCEL on SQL error panel will skip each row in error.*

**Explanation:** This is a message insert, used in the FM/DB2 audit report utility.

**User response:** No action required.

---

**FMNDB807** *row count rows created (short) row count rows created, in DB2 object output DB2 object name. duplicate count duplicate rows not created. error count in error not created.*

**Explanation:** This message is issued by the FM/DB2 data create utility. *row count* is the number of rows that were inserted (created) in the output DB2 object *output DB2 object name*.

- *duplicate count* is the number of rows that could not be inserted because of duplicate key (SQLCODE-803) errors.
- *error count* is the number of rows that could not be inserted because of errors other than duplicate key errors.

**User response:** No action required. Informational message. If there are multiple duplicate key errors, you can edit the template for those columns that form part of the unique index keys to specify a pattern to be used when creating values for that column.

---

---

**FMNDB808** Create canceled (short) Create function was canceled by the user.

**Explanation:** The user canceled the FM/DB2 data create function, typically by pressing the PF key assigned to CANCEL.

**User response:** No action required. Informational message.

---

**FMNDB809** Creating...

**Explanation:** This message is issued by the FM/DB2 data create utility to indicate that data create operations are in progress.

**User response:** No action required. Informational message.

---

**FMNDB810** No rows created (short) Create of *row count* rows was rolled back due to error. Note that PF12/CANCEL on SQL error panel will skip each row in error.

**Explanation:** The current FM/DB2 data create function has been terminated because of errors. No rows have been created in the output DB2 object because a DB2 ROLLBACK statement was issued, and this backed out all uncommitted changes. Prior to the error condition that caused the function to be terminated, *row count* rows had been inserted into the output DB2 object.

**User response:** If the function was executed online, the failing operation will have produced an SQL error, displayed to the user in the SQL error pop-up panel. Look up the SQLCODE shown and respond as indicated.

---

**FMNDB811** *row count* duplicate rows not imported.

**Explanation:** The FM/DB2 import utility, executing in batch mode, did not import *row count* rows because of duplicate key (SQLCODE-803) errors.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility when run in batch mode. If duplicate key errors were not expected, examine the input data to determine why the errors occurred.

---

**FMNDB812** *row count* row(s) in error not imported.

**Explanation:** The FM/DB2 import utility, executing in batch mode, did not import *row count* rows because of unspecified SQL errors.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility when run in batch mode. The presence of this message usually indicates a problem with the input data, which should be examined to determine why the errors occurred.

---

**FMNDB813** *row count* row(s) dropped via record selection.

**Explanation:** The FM/DB2 import utility, executing in batch mode, did not import *row count* rows because the corresponding input record was dropped as part of the record selection process.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility when run in batch mode. When record selection criteria, or a REXX exec, is specified for the input template, this message indicates that one or more records did not meet the record selection criteria, or were dropped as part of the REXX procedure processing. If no REXX procedure was specified this message may indicate a mismatch between the input data and its associated template.

---

**FMNDB814** *row count* row(s) dropped via REXX proc.

**Explanation:** The FM/DB2 import utility, executing in batch mode, did not import *row count* rows because the corresponding input record was dropped as part of the associated REXX procedure processing.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility when run in batch mode. The user response depends on context. It may be reasonable for records to be dropped. If, however, records should not be dropped as part of the REXX procedure processing, examine the input data to determine why the records were dropped.

---

**FMNDB815** *row count* duplicate row(s) not created.

**Explanation:** The FM/DB2 data create utility, executing in batch mode, did not create *row count* rows because DB2 raised a duplicate key error (SQLCODE-803) when FM/DB2 attempted to insert the newly created row in the target DB2 object.

**User response:** This is one of several messages that may be issued by the FM/DB2 data create utility when run in batch mode. The user response depends on context. DB2 will always reject rows that violate uniqueness constraints. When many duplicate row errors are received consider adjusting the input parameters to avoid duplicate values for any index columns.

---

**FMNDB816** *row count* row(s) in error not created.

**Explanation:** The FM/DB2 data create utility, executing in batch mode, did not create *row count* rows because DB2 raised an error (other than SQLCODE-803) when FM/DB2 attempted to insert the newly created row in the target DB2 object.

**User response:** This is one of several messages that may be issued by the FM/DB2 data create utility when run in batch mode. This message usually indicates an error. DB2 may reject the insert of a row for many



reasons. Note, that the SQL error issued by DB2 is NOT SQLCODE-803. Duplicate row errors are reported separately. Examples of error SQLCODEs that might result in this message include: -530, -531, and -532 (referential integrity errors).

---

**FMNDB817** *row count existing rows(s) updated.*

**Explanation:** The FM/DB2 import utility, executing in batch mode, updated *row count* rows. Only columns that are not part of any unique index key are updated.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility, when run in batch mode. The user response depends on context. In most cases, the update of existing rows is best. If, however, the import operation is not expected to cause duplicate key errors (SQLCODE-803), compare the input records and DB2 object, to discover why there are duplicates.

---

**FMNDB818** *row count existing rows(s) not updated.*

**Explanation:** The FM/DB2 import utility, executing in batch mode, attempted to update existing rows after the insert operation for the record failed with SQLCODE-803 (duplicate key error). The update operation failed.

**User response:** This is one of several messages that may be issued by the FM/DB2 import utility, when run in batch mode. This message usually indicates an error. DB2 may reject the update of a row for many reasons. Examples of error SQLCODEs that might result in this message include -530, -531, and -532 (referential integrity errors).

---

**FMNDB819** *row count import/updt(d) (short) row count rows imported, from file input data set name to DB2 object target DB2 object name. duplicate row count duplicate rows updated. duplicate error count duplicate rows not updated. error row count rows in error not imported. dropped record count rows dropped by record selection. REXX drop count rows) dropped by REXX procedure.*

**Explanation:** This message is issued by the FM/DB2 import utility, when executed online. It summarises the statistics for the import operation just completed. This message is issued when the "update existing rows" option is selected, and when no rows were inserted, or updated. *row count* is the number of rows imported or updated. In this case, 0.

- *duplicate row count* is the number of records that generated SQLCODE-803 (duplicate key) errors.
- *duplicate error count* is the number of records for which the update of an existing row failed.

- *error row count* is the number of records that generated errors other than SQLCODE-803 for the INSERT operation.
- *dropped record count* is the number of records that were not considered (dropped) as a result of record selection.
- *REXX drop count* is the number of records that were dropped via the user-specified REXX procedure.

**User response:** This message is issued when no rows were inserted, and no rows were updated. The user response depends on context. If insert or updates were expected, examine the input data to determine why no records were processed.

---

**FMNDB826** **All columns selected (short) No columns were selected in the template for DB2 object name. Processing cannot proceed without at least one selected column. FM/DB2 has automatically selected all columns for processing.**

**Explanation:** This message is issued by either the FM/DB2 export, or FM/DB2 UNLOAD utilities. The template editor was used to deselect all columns, followed by an attempt to execute the function with the modified template. Since an FM/DB2 function requires at least one selected column to proceed, all columns are automatically selected and this message is issued.

**User response:** No action required. Informational message. By default, all columns of a DB2 object are selected for processing. While it is valid to deselect some of the columns in the DB2 object, it is invalid to deselect all columns, since this results in a "no-operation" condition.

---

**FMNDB827** **Import to view failed (short) The import operation has been canceled. Import to a view is only supported if the view is defined directly on a table. Repeat the operation using the actual table that the view refers to.**

**Explanation:** The FM/DB2 import utility was used to import data into a DB2 view. The DB2 view refers to more than one DB2 table, or refers to one or more views. Import to this type of view is not supported. The import operation is canceled.

**User response:** In general, import to a DB2 view defined as "SELECT \* FROM DB2 table name" is supported. Import to views that refer to multiple DB2 tables, or views, is not supported. Where possible, use the FM/DB2 import utility with a table name, rather than a dependent view.

---

**FMNDB828 Remapping required (short)** No columns in the target table are mapped to any fields in the input template. This can occur if the column names in the target object are different to the field names in the input template. Edit the template for the target object to set the mapping between columns/fields in the target/input templates.

**Explanation:** The FM/DB2 import utility was used with an input template that has field names that do not match any of the columns in the target DB2 object. The automatic field mapping process used by FM/DB2, cannot reliably determine which fields in the input template correspond with columns in the target DB2 object. Manual mapping of each field in the input template to a column in the target DB2 object is required.

**User response:** This message may be issued in the situation where the wrong input file template is specified for an FM/DB2 import function. Advanced usage of the FM/DB2 import utility allows individual mapping of each column in the target DB2 object to a corresponding field of the input template. The column and field names need not match, nor the relative positions of the columns in the DB2 object and fields in the input record. If this is the intended usage, use the template editor ("edit template mapping") to set the relationship between columns and fields, and retry the operation.

---

**FMNDB829 Invalid value (short)** The valid values are ALL or a number in the range 0-2147483647. (long).

**Explanation:** An invalid value was entered in the "Max duplicates" field of the "Copy Options" panel. The valid values are "ALL" or an integer in the range 0-2147483647, inclusive.

**User response:** Correct the invalid value.

---

**FMNDB831 Browse substituted (short)** The DB2 result table is not updateable, specifically because not all columns of the first table named in the from clause are present, nor are all columns of any unique index(es) defined on this table. Browse has been substituted for edit. (long).

**Explanation:** A SELECT statement was entered using one of the FM/DB2 functions that allow free-form SQL statements to be processed. When FM/DB2 uses the editor to display the result table from SELECT statement, edit operations may not be possible for free-form SQL statements. This message occurs when the conditions listed in the message are not met. For tables with unique indexes defined, FM/DB2 can use the values in the columns that comprise the unique

index to uniquely identify any row of the table. However, this requires that every column in the unique index key is represented in the result table. If reliable edit is not possible, FM/DB2 converts the edit session to browse to avoid any possibility of data corruption.

**User response:** No action required. Informational message. If edit operations of the result table are required, the preferred method is to edit the DB2 object directly.

---

**FMNDB832 Update not possible (short)** FM/DB2 cannot update the data in the row(s) marked with =INERR. This error may occur attempting to edit the result table from an arbitrary select statement entered using option 4.2, 4.3 or 4.4. You should cancel the current edit session and then edit the underlying DB2 object directly.

**Explanation:** An attempt was made to update data in the row of a result table for an SQL statement entered using FM/DB2 options 4.2, 4.3, or 4.4. The update failed because DB2 rejected the update. There are various reasons why this error may occur, including editing the result table for a join. The update operation cannot be performed.

**User response:** If edit operations of the result table are required, the preferred method is to edit the DB2 object directly.

---

**FMNDB833 Delete not possible (short)** FM/DB2 cannot delete the data in the row(s) marked with =INERR. This error may occur attempting to edit the result table from an arbitrary select statement entered using option 4.2, 4.3 or 4.4. You should cancel the current edit session and then edit the underlying DB2 object directly.

**Explanation:** An attempt was made to delete a row of a result table for an SQL statement entered using FM/DB2 options 4.2, 4.3, or 4.4. The update failed because DB2 rejected the delete. There are various reasons why this error may occur, including editing the result table for a join. The update operation cannot be performed.

**User response:** If edit operations of the result table are required, the preferred method is to edit the DB2 object directly.

---

**FMNDB835 Parameter marker invalid (short)** The SELECT statement contains one or more "?". DB2 interprets these as parameter markers, resulting in an SQL error. Replace the "?" with constants and rerun the statement.

**Explanation:** A SELECT statement was entered using FM/DB2 options 4.3, or 4.4, and possibly other options. The SELECT statement includes DB2 parameter markers ('?'). While the use of DB2 parameter markers is valid when using, for example, an application programming language, the use of DB2 parameter markers in SELECT statements processed by FM/DB2 is invalid.

**User response:** Locate the DB2 parameter markers in the SELECT statement. Replace each occurrence with a constant of the appropriate type. Rerun the statement.

---

**FMNDB836 Browse substituted (short) This version of FM/DB2 does not support new DB2 data types introduced with DB2 version 9. Browse has been substituted for edit. (long).**

**Explanation:** FM/DB2 detected a data type in the DB2 object being edited that is not currently supported. To avoid the possibility of data corruption, FM/DB2 has substituted browse for edit.

**User response:** Determine which column has the unsupported data type. Contact your IBM sales representative for information about later versions of FM/DB2 which support the new data type.

---

**FMNDB837 XML column(s) (short) This version of FM/DB2 does not support the XML data type introduced with DB2 version 9. The function cannot be performed.**

**Explanation:** FM/DB2 detected one or more XML columns in the object being processed by the current FM/DB2 function (editor, copy, import, export, and print). XML columns are not supported. The function cannot be performed, and processing is terminated.

**User response:** Specify a DB2 object that does not include XML columns.

---

**FMNDB838 Duplicate count reached (short) The specified duplicate count was reached. The import has been canceled. (long).**

**Explanation:** An FM/DB2 import was specified with a non-zero "Max duplicate" count. During the processing of the input data, the number of duplicate row errors reached the specified "Max duplicate" value. The import operation if canceled.

**User response:** The "Max duplicate" count value is specified on the Import Options panel, selected using the "edit options" field on the Import function entry panel. The response depends on the context of when duplicate row errors are expected. Rerun the import after increasing the "Max duplicate" value. When duplicate row errors are not expected, examine the input data to determine why duplicate row errors are occurring.

---

**FMNDB839 Unable to process (short) The DB2 object contains one or more LOB columns. There is insufficient memory available for FM/DB2 to process data from this object, because of the large size of the LOB column(s). Refer to the Edit Tutorial, General information, Restrictions for additional information on how to avoid this problem.**

**Explanation:** FM/DB2 does not support the processing of DB2 objects with LOB columns. The function cannot be performed and processing is terminated.

**User response:** Specify a DB2 object that does not include LOB columns.

---

**FMNDB840 Format not for template (short) The Data Format is not compatible with that used to create the template. Template is *template type*.**

**Explanation:** This message is issued by the FM/DB2 import utility when there is a mismatch between the template describing the input data, and the data format option for the import data set. The import cannot be processed, and the import is canceled. The type of template specified is *template type*, which will be one of the following: DB2 Unload; DB2 DSNTIAUL; User defined; Base; FM/DB2 SQLDA; Other. (long).

**User response:** The data format for the input data set is specified on the Import options panel, selected using the "edit options" field on the Import function entry panel. The value specified must match the actual data format of the input data. It must also match the type of template specified in the template, or copybook, specified on the import function entry panel. Verify that the specified template correctly describes the input data. Determine the data format of the input data, use that information to set the appropriate data format value on the Import options panel, and retry the import operation.

---

**FMNDB841 DB2 unload.**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** No action required.

---

**FMNDB842 DB2 DSNTIAUL.**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** No action required.

---

**FMNDB843 User defined.**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** No action required.

---

**FMNDB844 BASE.**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** No action required.

---

**FMNDB845 FM/DB2 (SQLDA).**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** No action required.

---

**FMNDB846 OTHER.**

**Explanation:** This is a message insert used in message FMNDB840.

**User response:** None

---

**FMNDB847 Batch, using DB2 UNLOAD**

**Explanation:** This is a message insert, displayed on the first export options panel.

**User response:** No action required.

---

**FMNDB848 Edit DB2 UNLOAD options**

**Explanation:** This is a message insert, displayed on the first export options panel.

**User response:** No action required.

---

**FMNDB849 Incompatible options (short) The data format must be 2 (DB2 unload format) when execution option 3 (Batch, using DB2 UNLOAD) is selected. (long).**

**Explanation:** The FM/DB2 export function can be used to generate a DB2 utility job that will run the DB2 UNLOAD utility for a DB2 table. When this option is selected, the format of the output data is determined by DB2. Therefore, the data format must be set to '2' (DB2 unload format). The data format for the output data set is specified on the first export options panel, selected using the "edit options" field on the Export function entry panel

**User response:** Adjust the data format option as indicated, and retry the operation. Note, that it is also possible to use the FM/DB2 export function to export data in "DB2 unload format", without running a DB2 batch job. If this is what is intended, set the execution option on the first export options panel to either '1' (online) or '2' (batch), and retry the operation.

---

**FMNDB850 Must be sequential file (short) The DB2 UNLOAD utility does not support unload of data to a partitioned data set. (long).**

**Explanation:** The FM/DB2 export utility was executed with an execution option of '3' (Batch, using DB2 unload). The output data set specified on the export 'To' panel, is a partitioned data set includes a member name. While the FM/DB2 export utility can export data in DB2 unload format to a member of a partitioned data set, this is not supported by the DB2 UNLOAD utility.

**User response:** Specify a sequential file (Data set organization of PS), rather than a partitioned data set (Data set organization of PO), for the output data set. Retry the operation.

---

**FMNDB851 Must be sequential file (short) The DB2 UNLOAD utility requires that the unload data set be a sequential file (DSORG=PS).**

**Explanation:** The FM/DB2 export utility was executed with an execution option of '3' (Batch, using DB2 unload). The output data set specified on the export 'To' panel, is not a sequential data set. While the FM/DB2 export utility can export data in DB2 unload format to non-sequential data sets, the only data set type supported by the DB2 UNLOAD utility is sequential.

**User response:** Check the type for the output data set specified for the DB2 unload operation on the FM/DB2 export 'To' panel. Ensure that a sequential file (Data set organization of PS) is specified. Retry the operation.

---

**FMNDB852 Not required (short) A query number value is only required with the EXPLAIN primary command. (long).**

**Explanation:** An SQL statement and query number value were entered on the "Enter, Execute and Explain SQL" panel (FM/DB2 option 4.3). A query number is only required when the EXPLAIN primary command is issued.

**User response:** Remove the query number and retry the operation. If the intention was to EXPLAIN the SQL statement, type 'EXPLAIN' on the command line, and press enter.

---

**FMNDB853 Delete failed (short) The deletion of all rows from the DB2 object failed - the import function has been canceled. (long).**

**Explanation:** The "Delete existing rows" option was specified for an FM/DB2 import. When FM/DB2 attempted to delete all rows from the target DB2 object, DB2 rejected the operation. The import cannot proceed

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and the import is canceled. No data has been imported.

**User response:** There are many reasons why DB2 might reject a 'DELETE \* FROM *object name*' statement, including referential integrity errors, locking problems, and unavailable resources. Retry the operation. If the problem persists, issue the 'DELETE \* FROM *object name*' directly using FM/DB2 options 4.3, 4.4, or DB2 SPUFI. If the operation fails, use the SQLCODE to determine the cause of the failure.

---

**FMNDB855** *row count rows+hdr exported (short) Row countrow(s) and column header row exported from DB2 object object nameto file data set name. (long).*

**Explanation:** This message is issued by the FM/DB2 export function and is specific for an export with CSV format and the "Include column headers" option selected. FM/DB2 exported *row count* rows from DB2 object *object name* to data set *data set name*. The first row exported is a header row, containing the names of the DB2 columns in place of the data for those columns.

**User response:** No action required. Informational message.

---

**FMNDB856** **Invalid character ' or " (short) The Delimited Variables (CSV) separator cannot contain either a single quote (') or double quote ("). Choose another value. (long).**

**Explanation:** The user entered a value in the "Separator character" field on the second FM/DB2 Export options panel. This field is used to enter a one or two character value for the separator character in "delimited variables (CSV)" export format. The value entered contains either a single or double quote, which is not supported.

**User response:** The delimited variables (CSV, comma separated variables) format is loosely defined. In situations where the default separator character (comma) is inappropriate, FM/DB2 allows the specification of a one, or two, character alternative value. The separator value cannot include either a single, or double quote, because this causes syntactical ambiguity when the exported data also includes single or double quotes, either within the data, or inserted to encapsulate the data. Select another value.

---

**FMNDB858** **Must be numeric, >0 (short) The value entered must be an integer in the range 1-2147483647. (long).**

**Explanation:** A value entered in the "start position" field on the editor function entry panel, or the "create count" field on the data create function entry panel, is invalid. A numeric value is required, which must be a positive integer in the range 1-2147483647, inclusive.

**User response:** Correct the value, retry the operation.

---

**FMNDB859** **Must be numeric, >=0 (short) The value entered must be an integer in the range 0-2147483647. You can specify 0, \* or ALL to indicate all rows. (long).**

**Explanation:** The value entered in a field on an FM/DB2 function entry panel is invalid. A numeric value is required, which must be a non-negative integer in the range 0-2147483647, inclusive. This message is issued for various "row count" input fields. A value of \* and ALL can also be entered as synonyms for 0. These values indicate that there is no limit to the number of rows or records to be processed.

**User response:** Correct the value, retry the operation.

---

**FMNDB860** **Audit trail for FM/DB2 browse function.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB861** **Audit trail for FM/DB2 view function.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB862** **Audit trail for FM/DB2 edit function.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB863** **Audit trail for FM/DB2 copy utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB864** **Audit trail for FM/DB2 import utility**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB865** **Audit trail for FM/DB2 export utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

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**FMNDB866 Audit trail for FM/DB2 data create utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB867 Audit trail for FM/DB2 DB2 commands utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB868 Audit trail for FM/DB2 DB2 objects utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

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**FMNDB869 Audit trail for FM/DB2 DB2 privileges utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB870 Audit trail for FM/DB2 "Enter, Execute and Explain SQL" utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB871 Audit trail for FM/DB2 "Edit/Execute SQL (Data Set)" utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

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**FMNDB872 Audit trail for FM/DB2 object list utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

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**FMNDB873 Audit trail for FM/DB2 print utility.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

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**FMNDB874 Audit trail for FM/DB2 basic SQL prototyper.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB875 Audit trail for FM/DB2 advanced SQL prototyper.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report relates to the specified function.

**User response:** No action required.

---

**FMNDB879 Audit trail for File Manager DB2 component.**

**Explanation:** This is a message issued by the FM/DB2 audit report, indicating the audit report pertains to FM/DB2 component.

**User response:** No action required.

---

**FMNDB890 DB2 subsystem DB2 SSID not defined to z/OS?.**

**Explanation:** This message is issued by an FM/DB2 batch job, when connection to DB2 system DB2 SSID failed. One reason for this message being issued is that DB2 SSID does not exist (has not been defined to the local z/OS system). This might occur in sites running multiple LPARs with shared DASD, where DB2 systems are available on some, but not other, z/OS systems.

**User response:** Check that the DB2 SSID specified as a parameter is defined to the z/OS system where the batch job was executed. If this is not the problem, look up DB2 error code '00F30006' in the DB2 Codes manual and proceed as directed for that error.

---

**FMNDB900 Own authorization ID (short) An authorization ID cannot grant a privilege to itself. (long).**

**Explanation:** This message is issued by the FM/DB2 privileges function, in the situation where "An authorization ID or a role attempted to execute a GRANT statement in which that ID itself appears as one of the entries in the list of 'grantee' authorization IDs or role names".

---

**User response:** Respond as for SQLCODE-554. The usual remedy is to remove the user current DB2 authid/role from the list of target DB2 authids/roles.

---

**FMNDB903 Identifier too long (short)** The identifier is too long. See the SQL Reference for information about the maximum lengths for identifiers. DB2 returned an SQL code of -107 for SQL statement *SQL statement*. (long).

**Explanation:** This message is issued when an SQL statement contains an identifier that is too long. When connected to DB2 V8 systems or later, this error is unlikely, given the large maximum lengths for most DB2 identifiers, compared to the corresponding DB2 V7 values.

**User response:** Respond as for SQLCODE-107

---

**FMNDB904 Not authorized (short)** Your authorization ID does not have the authority to change the privileges for this object. DB2 returned an SQL code of -551 for SQL statement *SL statement*(long)

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. The DB2 authorization IDs for the current user do not have the authority to change (GRANT or REVOKE) for the object.

**User response:** Respond as for SQLCODE-551. See your DB2 System Administrator.

---

**FMNDB905 Object not found (short)** The specified DB2 object does not exist. DB2 returned an SQL code of -204 for the SQL statement *SL statement* long)

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. The DB2 object for which the privileges are to be changed could not be found (SQLCODE-204).

**User response:** Respond as for SQLCODE-204. Check the DB2 object name.

---

**FMNDB907 Cannot be revoked (short)** You cannot revoke the specified privilege because the revokee does not possess the privilege or because the specified DB2 authid did not grant the privilege. DB2 returned an SQL code of -556 for SQL statement *SL Statement*. (long).

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. The privilege cannot be revoked.

**User response:** Respond as for SQLCODE-556. Refer to the SQL Codes manual, for the appropriate version

of DB2, for a detailed list of possible causes of this error.

---

**FMNDB909 Not authorized (short)** Your authorization ID does not have the privilege to issue a REVOKE statement with the BY clause. DB2 returned an SQL code of -552 for SQL statement *SL statement*.long

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. The privilege cannot be revoked.

**User response:** Respond as for SQLCODE-552.

---

**FMNDB910 Privilege conflict (short)** One or more privileges conflict with one or more other privileges. (long).

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. An example that causes this error is selecting the 'ALL' option for a privilege, as well as one or more of the individual privileges that are included when 'ALL' is specified.

**User response:** Correct the specification of the privileges to be processed. In general selecting the 'ALL' option means that you should deselect all of the privileges that are included when 'ALL' is specified.

---

**FMNDB911 Not required (short)** This field should be blank for the specified option. (long).

**Explanation:** On the "Alter Table - VALIDPROC" panel, the "type of VALIDPROC" is set to 1, and a value is also specified for "program name". A value for "program name" is only required when the "type of VALID-PROC" is set to 2.

**User response:** Check the "type of VALIDPROC" specification. If NULL is the intended specification, remove the value from the "program name" field, and retry the operation. If the intention is to add a program name, change the "type of VALIDPROC" specification to 2, and retry the operation.

---

**FMNDB913 Invalid option (short)** The selected option is not one of the listed values or the object type is not supported on the remote DB2 system you specified. This error can occur when you try to list certain DB2 objects on a remote DB2 system that is at an earlier release of DB2 than the system to which you are connected.

**Explanation:** This message is issued by the FM/DB2 Object Privileges utility. The value entered in the "object type" field is invalid. The request cannot be processed.

**User response:** The valid options for the "Object type"

field are listed on the panel. Specify one of the values listed (1-15 inclusive).

---

**FMNDB914 Different DB2 release (short) The release level of the remote DB2 system is different than the release level of the DB2 system to which you are connected. The choice of DB2 object types has been refreshed to show those object types supported on the remote system. Press ENTER again to get the requested list. (long).**

**Explanation:** This message is issued by the FM/DB2 Object List and Object Privileges utilities when the user enters a remote location value. FM/DB2 connects to the specified location and compares the DB2 version of the remote location against the version of the currently connected DB2 system. When the values are different this message is issued.

**User response:** No action required. Informational message. Press enter to refresh the list of available object types.

---

**FMNDB915 Empty table (short) The DB2 object contains no rows, or no rows match the specified row selection criteria. (long).**

**Explanation:** This message is issued by the FM/DB2 editor when the result table for an object or select statement contains no rows.

**User response:** No action required. Informational message.

---

**FMNDB916 Excluded rows shadow is off. There are no unexcluded rows to display. (long).**

**Explanation:** In an FM/DB2 editor session, the shadow-line for excluded-rows has been turned off, and there are no rows to display. Note, that when the excluded-row shadow-line has been turned off, the string 'SHAD' appears immediately to the left of "Format", at the top right of the display, in TABL mode. For those familiar with ISPF shadow lines, the FM/DB2 editor allows the display of the shadow-line indicator to be suppressed, using a command like "SHADOW X OFF". This is not supported in the ISPF editor. Excluded lines are always indicated with a shadow-line. When excluded-row shadow-lines are turned off and when all of the rows in the current editor session are shadow-lines, the editor display appears as though there are no rows in the table (no shadow-line indicator). This message is displayed to alert the user to the fact that there are rows in the result table, even though there are no lines displayed.

**User response:** No action required. Informational message. You can turn on the shadow-line indicator with "SHADOW X ON".

---

**FMNDB917 No rows to display.**

**Explanation:** In an FM/DB2 editor session, the shadow-line for excluded-rows is turned on, and there are no rows to display. See also the message description for FMNDB916. This message is typically issued when edit operations have deleted all rows from the current editor session.

**User response:** No action required. Informational message.

---

**FMNDB918 Excluded rows shadow is off. Either no unexcluded rows to display, or no rows match the filter specification. (long).**

**Explanation:** In an FM/DB2 object list/privileges display, the shadow-line for excluded-rows has been turned off, and there are no rows to display. Note, that when the excluded-row shadow line has been turned off the string 'SHAD' appears immediately to the left of "Format", at the top right of the display, in TABL mode. The FM/DB2 object list/privileges utilities use the FM/DB2 editor to display lists of objects and privileges. When a filter value is specified for any column, the editor display is adjusted to show only those rows that match the filter value for that column. Any nonmatching rows are converted to excluded-rows, and these rows do NOT produce a shadow-line. This occurs regardless of the current setting for the excluded-row shadow-line. For those familiar with ISPF shadow-lines, the FM/DB2 editor allows the display of the shadow-line indicator to be suppressed, using a command like "SHADOW X OFF". This is not supported in the ISPF editor. Excluded-lines are always indicated with a shadow-line. When all of the rows in the current display are shadow-lines, the editor display appears as though there are no rows object list/privilege display (no shadow-line indicator). This message is displayed to alert the user to the fact that there are rows in the object list/privilege display, even though there are no lines displayed. This message is displayed when either:

- A filter value entered for a column results in no matches, or;
- When all rows are excluded.

**User response:** No action required. Informational message.

---

**FMNDB919 No rows to display, or no rows match the filter specification. (long).**

**Explanation:** In an FM/DB2 object/privileges display, the shadow-line for excluded-rows is turned on, and there are no rows to display. The FM/DB2 object list/privileges utilities use the FM/DB2 editor to display lists of objects and privileges. See also the message description for 945. This message is displayed when a filter value entered for a column results in no matches.



**User response:** No action required. Informational message.

---

**FMNDB921 No rows match key (short)** There are no rows in the parent table that match the foreign key value. This can occur when a foreign key column(s) has the NULL value. (long).

**Explanation:** A related edit session of a parent table has no rows that match a foreign key in a dependent table.

**User response:** No action required. As noted in the long message text, this condition can occur when a foreign key value in the dependent table is NULL.

---

**FMNDB922 No rows match key (short)** There are no rows in the dependent table that match the primary/parent key value. (long).

**Explanation:** A related edit session of a dependent table has no rows with a foreign key that match the primary or parent key value in the parent table.

**User response:** No action required. A parent/primary key value may exist for which there are no corresponding rows (in terms of foreign key value) in the dependent table.

---

**FMNDB923 Already granted warning (short)** At least one of the authid(s) or role(s) already possesses the privilege(s) from the grantor.

**Explanation:** This message is issued by the FM/DB2 Object privileges utility when a GRANT statement returns an SQLCODE+562. This is a warning condition indicating that the GRANT has already been executed for one or more privilege/authid/role combination. The execution of the SQL statement is successful. Any privileges previously held by the target DB2 authids/roles from the grantor are retained (not changed). Any new privileges specified have been successfully GRANTED.

**User response:** No action required. When there are multiple DB2 authids or roles as target for the GRANT, or multiple privileges being GRANTED, it is not possible to determine which privileges were previously available.

---

**FMNDB924 Grant option warning (short)** The WITH GRANT OPTION was ignored for one or more of the privilege(s). (long).

**Explanation:** A GRANT statement generated by the FM/DB2 privileges utility was executed. The statement included the "WITH GRANT OPTION" clause. DB2 returned SQLCODE+558. This is a warning condition indicating that the "WITH GRANT OPTION" clause is redundant. The GRANT statement was successfully

executed. An example of an operation that results in this warning condition is attempting to grant the SYSADM privilege to a DB2 authid, with "WITH GRANT OPTION". The FM/DB2 privileges Grant panels allow either 'Y', or 'G', to be specified against the various DB2 privileges; 'Y' corresponds to "GRANT" while 'G' corresponds to "GRANT" and "WITH GRANT OPTION".

**User response:** No action required.

---

**FMNDB925 Not authorized (short)** Your authorization ID does not have the authority to GRANT|REVOKE the privilege type system privilege. DB2 returned an SQL code of -552 for SQL statement *SL statement*.

**Explanation:** The FM/DB2 privileges utility attempted to execute SQL statement *SL statement*. Execution failed with DB2 returning SQLCODE -552, which indicates that the user does not have the authority to execute the statement.

**User response:** This is an error condition. Consult with your DB2 security administrator to obtain the necessary DB2 authority to execute the statement.

---

**FMNDB926 Own authorization ID (short)** An authorization ID cannot revoke a privilege from itself. (long).

**Explanation:** The FM/DB2 privileges utility was used to issue a REVOKE statement. Execution of the statement failed with DB2 returning SQLCODE-555. This error is issued when the REVOKE statement would have the effect of removing a privilege from a DB2 authid or role that is possessed by the same DB2 authid or role. This is not supported.

**User response:** Examine the grantees and remove the DB2 authid or role that corresponds to the current DB2 authid or role of the user.

---

**FMNDB927 Invalid name (short)** The name is invalid. A database/table space/plan name must be an SQL ordinary identifier - no lower case characters. See the SQL Reference manual for a definition. DB2 returned an SQL code of -113 for SQL statement *SQL statement*.

**Explanation:** A database/table space/plan name entered using the FM/DB2 object privileges utility is invalid. An SQL ordinary identifier is required. See the SQL Reference for a definition. An ordinary identifier is an uppercase letter, followed by zero or more characters, each of which is an uppercase letter, a digit, or the underscore character.

**User response:** Correct the name and retry the operation.

---

**FMNDB928** **Insufficient authority (short).** You cannot revoke this privilege. The current SQLID (*D2 authid*) does not have SYSADM or SYSCTRL authority. You can only revoke a privilege when the current SQLID (*DB2 authid*) originally granted the privilege. (long).

**Explanation:** The FM/DB2 privileges utility was used to attempt to issue a REVOKE statement. The user current DB2 authid *D2 authid*, is different to the DB2 authid originally used to grant the privilege. While it is possible to revoke a privilege originally granted by another DB2 authid, this requires SYSADM or SYSCTRL authority, which the current *DB2 authid* does not have. The statement cannot be executed.

**User response:** In general, without either SYSADM or SYSCTRL authority, you will be unable to revoke DB2 privileges granted by another DB2 authid. Consult with your DB2 Security Administrator to obtain the necessary DB2 authority to execute the statement.

---

**FMNDB940** **Invalid PIECESIZE (short).** PIECESIZE in *Klobytes | Megabytes | Gigabytes* must be a multiple of 2 between *mn value* and *mx value*. (long).

**Explanation:** An invalid value was entered for "piecesize" on the "Create Index: Type" panel (DB2 Object Functions). *mn value* and *mx value* show the minimum and maximum values that can be used for the specified space-multiplier, which will be either kilobytes, megabytes, or gigabytes.

**User response:** Select an integer value between the two values shown that is a power of 2. For kilobytes, valid values are: 256, 512, 1024, .. 67,108,864. For Megabytes valid values are: 1, 2, 4 .. 65,536. For Gigabytes, valid values are: 1, 2, 4 .. 64.

---

**FMNDB941** **Invalid combination (short)** A VCAT name cannot be specified with a storage group name, primary, or secondary space requirements, or the ERASE option.

**Explanation:** An invalid combination of values was entered when attempting to create a table space, or index, using the DB2 Object Functions. When creating either a table space, or index, a VCAT name can be specified, indicating that space allocation is under user control. Otherwise, the VCAT name must be blank, and a storage group name can be specified, indicating that space allocation is controlled by DB2. In the latter case, primary and secondary space values may also be entered.

**User response:** Decide whether a VCAT name or storage group name is appropriate. In the former case do not specify any of: storage group name, primary or secondary space allocation values. In the latter case do

not specify a VCAT name value.

---

**FMNDB942** **Storage group required (short)** Primary and secondary space requirements, and the ERASE option can only be specified if a storage group name is also specified. (long)

**Explanation:** An invalid combination of values was entered when attempting to create an index using the DB2 Object Functions. Either:

1. One or more non-blank values have been specified for "Primary space" or "Secondary space" on the "Create Index:Allocation" panel. However the "Storage group name" value is blank. You must enter a "storage group name" if you intend to specify space allocation values.
2. One or more non-blank values have been specified for "Primary space", "Secondary space", or "Erase data" on the "Create Index: Partitions" panel. However, the "Storage group name" value is blank. You must enter a "storage group name" if you intend to specify space allocation or an "Erase data" value."

**User response:** Enter a valid storage group name. Alternatively do not specify "Primary space" "Secondary space" or "Erase data" values.

---

**FMNDB943** **Invalid selection (short)** Select or deselect columns using the character "S". Order columns explicitly in the *key | index* using numerics.

**Explanation:** An invalid character was entered in either the Create Table, or Create Index functions, of the DB2 Objects utility.

**User response:** You can select a column by typing an 'S' in the appropriate field. All other letters are invalid. If a column has previously been selected, you deselect it by typing 'S' in the appropriate field. Once a column has been selected, you can enter any numeric (1, 2, 3, and so on) to specify the order of the columns in the index, or key. On the "Create Table: Unique Constraints" panel you can also select a column by typing any numeric in the appropriate field, and deselect a column by removing the number in the appropriate field.

---

**FMNDB944** **Already used (short).** Order number *number* was already set for column *column name* on row *row number* of the display.

**Explanation:** An invalid number was entered in either the "Create Table" or "Create Index" functions of the DB2 Objects utility. When defining an index, or key with multiple columns, the order of the columns in the index, or key, is specified using numbers. Thus, for an index comprising three columns (COL4, COL7 and COL10), you would enter the numbers 1, 2 and 3 (in

some combination) against those three columns.

**User response:** The number for the column has already been used for another column. Determine which columns should be in the index or key, then assign a unique number to each column. The column with the lowest used number will be the first column in the index or key, followed by the column with next-lowest-used number, and so on.

---

**FMNDB945 Maximum partitions (short). The insert (I) or repeat (R) command cannot be executed because the maximum number of partitions allowed by DB2 has already been defined. (long).**

**Explanation:** The user issued the 'I' or 'R' command against the 254th row on the "Create Index: Partitions" panel of the DB2 Objects utility. The maximum number of partitions that can be defined is 254 (DB2 version 7), so extra partitions cannot be added.

**User response:** No action required.

---

**FMNDB946 Invalid value (short). Enter one of the listed values: *list of valid values*. (long).**

**Explanation:** An invalid value was entered for a field in the DB2 Objects function. *list of valid values* contains the acceptable values for the field in error.

**User response:** Specify a value shown in *list of valid values*.

---

**FMNDB947 Set columns/partitions (short). You must use option 2 to select the columns comprising the index and option 5 to define the partitions before assigning partition values. (long).**

**Explanation:** The user selected option 6 on the "Create Index" panel of the DB2 Objects function. Either the columns that should comprise the index, or the partitions for the index, have not been defined. Both tasks must be completed before partition values may be assigned.

**User response:** Select option 2 to confirm that the columns that should comprise the index have been identified; then select option 5 to define the partitions for the new index.

---

**FMNDB948 IT:Define &\$ITEM:TE &\$ITEM---17 T:You must use option &\$OPTN to define the &\$ITEM for the &\$OBJ :TE T:before using this option.:TE**

**Explanation:** T

**User response:** I

---

**FMNDB949 Table not found (short). The table to be indexed was not found in the DB2 catalog. (long).**

**Explanation:** The user entered a table name on the "Create Index" panel of the DB2 Objects function. That table name does not exist on the current server.

**User response:** Check the table name for spelling mistakes. You can use the FM/DB2 Object List utility to show all table names defined at the current DB2 server if required. Correct the table name and retry the operation.

---

**FMNDB950 Set partition values (short) Partitions have been defined for this index using option 5. You must set partition values using option 6 before you can define the index.**

**Explanation:** This message is issued by the "Create Index" dialog (DB2 Object Functions). For a partitioned index, the number of partitions is set using option 5 (Partitions). Once the partitions are defined, you also need to set the maximum values for each partition using option 6 (Partition values). The index cannot be created until the partition values have been specified.

**User response:** If a partitioned index is required, select option 6 (Partition values), and specified appropriate values. If a non-partitioned index is required, select option 5 (Partitions), and delete all but one partition entry.

---

**FMNDB951 Update partition values (short) The column selections or partition definitions have changed since the partition values were set. You must reset the partition values using option 6 before you can define the index.**

**Explanation:** This message is issued by the "Create Index" dialog (DB2 Object Functions). Partition values have been set for all partitions and columns previously specified. However, a subsequent change has invalidated the partition values. There are two possibilities:

1. The columns specified for the new index have changed (columns added or deleted).
2. The partitions specified using option 5 (Partitions) have changed. The index cannot be created until the partition values have been specified.

**User response:** If a partitioned index is required, select option 6 (Partition values) and specified appropriate values. If a non-partitioned index is required, select option 5 (Partitions) and delete all but one partition entry.

---

**FMNDB952 Conflicting selection (short) *value 1 > is not valid because value 2.***

**Explanation:** This message is issued in many places within the DB2 Object Function dialog. The SQL syntax used to create the object has restrictions on the use of both *value 1* and *value 2*. In most cases you can resolve the error by specifying either *value 1* or *value 2*, but not both. The Object cannot be created until the conflicting selections are resolved.

**User response:** Determine which of the two selections is appropriate and remove the unwanted selection. Retry the operation. If the appropriate choice cannot be determined, refer to the SQL Reference manual for the appropriate version of DB2.

---

**FMNDB953 Errors retained (short) Invalid data has been saved because the CANCEL command was entered in response to an input verification message. The *statement type statement* may be invalid if executed: return to the previous panel and correct the error, or return to the *panel name* panel and start from the beginning.**

**Explanation:** This message is issued in many places within the DB2 Object Function dialog. An invalid value was entered on an option panel for the current CREATE or DROP function, followed by the user pressing CANCEL (PF12 by default) to return to the option selection panel for the current CREATE or DROP function. The invalid value is unresolved and may cause problems if an attempt is made to execute the current CREATE or DROP function.

**User response:** In most cases the problem can be resolved by reselecting the previous option panel (where CANCEL was entered), and correcting the invalid values entered there. If this does not resolve the problem, return to the DB2 Object Functions panel and restart the operation.

---

**FMNDB954 No suitable rows (short). The current table definition does not contain columns specified as not null. Use option 2 to define not null columns before defining :primary/unique keys. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions). The user selected the "unique constraints" option after previously defining columns for the new table using option 1 (Columns). A column can only be included in a unique constraint key if it is defined as NOT NULL, and none of the columns currently defined for the new table meet this requirement.

**User response:** Select option 2 (Nulls/Default values) and set the Null status for each column as appropriate.

You will need to specify either NN (NOT NULL) or ND (NOT NULL WITH DEFAULT) for at least one column to be able to specify a unique constraint for the new table.

---

**FMNDB955 No suitable rows (short). The current table definition does not contain any non-ROWID, non-LOB columns specified as not null, nor any identity columns. Use option 2 to define not null columns, or option 8 to define identity columns before defining primary/unique keys. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions). The user selected the "unique constraints" option after previously defining columns for the new table using option 1 (Columns). A column can only be included in a unique constraint key if it is defined as NOT NULL, and none of the columns currently defined for the new table meet this requirement. This message is issued when there are columns defined as ROWID, or CLOB/DBCLOB, BLOB.

**User response:** Select option 2 (Nulls/Default values), and set the Null status for each column as appropriate. You will need to specify either NN (NOT NULL) or ND (NOT NULL WITH DEFAULT) for at least one column to be able to specify a unique constraint for the new table. You can also define numeric columns as IDENTITY columns using option 8 (Generate values). An IDENTITY column can be included in a unique constraint.

---

**FMNDB956 Too many selections (short). You have already selected *Max column count* columns for this key, which is the maximum allowed by DB2. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), usually when defining columns to be included in the primary key, or other unique constraint defined for the table. *Max column count* is 64 for DB2 for z/OS versions 8 - 10 inclusive.

**User response:** Reduce the number of columns in the primary key or unique constraint.

---

**FMNDB957 Table/view not found (short). The model table/view was not found in the DB2 catalog. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), when a model table name is entered, but the DB2 object does not exist.

**User response:** Correct the DB2 object name, retry the operation. You can use the Object List utility (Option



3.4) to show all the DB2 objects (tables/views/aliases ) defined at the local server.

---

**FMNDB958 Too many constraints (short) Too many unique constraints have been found in model tables. Only the first three unique constraints found in the DB2 catalog have been loaded.**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), when a model table name is entered and a load of the information for the model table is requested. The "Create table" dialog supports a maximum of three unique constraints for any table being defined. This message might be issued for the load of a single DB2 object, with 4 or more unique constraints defined, or when multiple loads are requested.

**User response:** This is an informational message. In the unlikely event that 4 or more unique constraints need to be defined for the table being created, consider defining the table with 3 initial constraints, and using ALTER TABLE to add any additional constraints.

---

**FMNDB959 Invalid option (short). Only column information can be loaded when the add option is selected and columns have already been defined or loaded. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), when a model table name is entered. The user loaded information for one model table, then attempted to add load additional information for another. For the second and subsequent loads, only the "Basic table information" and "Column information" options can be selected.

**User response:** You can only load "Primary key information", "Unique key information", "Referential constraints" and "Check constraint" information for the first model table specified. Deselect the option for all of the above and retry the operation. Alternatively set the Refresh or Add option to Refresh and repeat the operation. This will replace any existing information with that for the current model table.

---

**FMNDB960 Too many constraints (short) Too many table foreign keys have been defined for this table. The number of table foreign keys is limited to the number of ISPF tables named FMN2CTnn that can be created.**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions). An attempt was made to create more than 100 foreign keys for the current table. While there is no DB2 limit on the number of foreign keys, the "Create Table" dialog is limited to a maximum of 100 foreign keys.

**User response:** Review the number of foreign keys

that have been specified, reduce the number to 100 or less.

---

**FMNDB961 Order required (short) A referenced column name has been entered for this column, but no order. An order is required if the column is to be included in the foreign key.**

**Explanation:** This message is issued on the "Create Table: Table Referential Constraint" panel. When creating a table referential constraint that includes more than one column (the usual usage is for a multiple-column foreign key definition), an order specification is required for every column that is part of the foreign key being defined.

**User response:** Specify an order for every column that is to be part of the foreign key.

---

**FMNDB962 Ref. column required (short). If any of the foreign key columns reference a specific column in the parent table, then all of the foreign key columns must do so. (long).**

**Explanation:** This message is issued on the "Create Table: Table Referential Constraint" panel. When creating a table referential constraint that includes more than one column (the usual usage is for a multiple-column foreign key definition), an order specification for a column was entered without a corresponding entry in the Parent Key column field.

**User response:** Specify a column name in the Parent Key column field, for every column that is to be part of the foreign key.

---

**FMNDB963 No columns selected (short). No columns have been selected to define the foreign key for this constraint. (long).**

**Explanation:** This message is issued when creating referential constraints for a table (Create Table dialog of DB2 Object functions). The user created a new constraint name and specified the parent table for the relationship. However no foreign key columns have been defined.

**User response:** Use the 's' command to select the new constraint entry. When the "Create Table: Table Referential Constraint" panel is displayed, select the columns that comprise the foreign key, and enter the names of the corresponding columns in the parent table.

---

**FMNDB964** Some data not loaded (short). The DB2 catalog did not contain any information for the model table or view for at least one of the model load options specified. For example, check constraints were requested but the referenced model table has no check constraints. (long).

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), when a model table name is entered, and a load of existing DB2 object information is requested.

**User response:** No action required. Informational message.

---

**FMNDB965** No suitable rows (short) The current table definition does not contain any short string columns specified as not null. Use option 2 to define not null columns before defining Procedure Exits.

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions). The user selected option 7 (Procedure exits). However, there are no suitable columns defined on which a procedure exit can be defined. A procedure exit cannot be defined unless a suitable column is defined.

**User response:** Option 7 (Procedure exits) allows a FIELDPROC specification for suitable columns of the table. In general, only character (CHARACTER/GRAPHIC) columns of length <=255, defined as NOT NULL, or NOT NULL WITH DEFAULT, are suitable. Define a suitable column using options 1 (Columns) and 2 (Nulls/Default values) and then reselect option 7.

---

**FMNDB966** External name required (short). Specify an external name for the *object type* using option *number* before using this option. This is required because the specified name exceeds eight characters. (long).

**Explanation:** This message is issued by the "Create Function" and "Create Stored Procedure" dialogs of the DB2 Object Functions. The length of the name for the function, or stored procedure, exceeds 8 characters. In this situation an external name for the function must also be specified. *object type* is either "function" or "stored procedure", depending on the Object function. *number* is 4 when creating a function, and 3 when creating a stored procedure.

**User response:** Select the specified option, and enter an external name for the function or stored procedure. Consult the DB2 for z/OS SQL Reference for the appropriate version of DB2 for details of acceptable formats for the external name value.

---

**FMNDB967** String too long (short). The string constant specified as a default value is too long for the associated string column. (long).

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a character data type column. The default value is too long. For example, specifying a default value of 'ABCDE' (length 5) for a CHAR(3) (length 3) column.

**User response:** Compare the length of the default value string, and the maximum length for the column, as defined in the length field for the data type. Adjust either value as appropriate.

---

**FMNDB968** Invalid data (short). The decimal number specified as a default value is invalid or out of range for the associated decimal number column. (long).

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a DECIMAL data type column. The specified default value is invalid in the context of the precision and scale specified for the column.

**User response:** Compare the definition for the DECIMAL column with the implied precision, and scale from the default value. Adjust either the data type (precision and scale) in the column, or the default value.

---

**FMNDB969** Invalid *DATE | TIME | TIMESTAMP* (short)  
*The format of the  
DATE | TIME | TIMESTAMP field or the  
data it contains is invalid.*

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a DATE, TIME, or TIMESTAMP data type column. The specified default value is invalid.

**User response:** Examine the default value entered and the data type for the column. The two possible causes of this error are:

1. An invalid format. Example: '12/10/2001' is not a valid format for a TIME column.
2. An invalid value. Example: '32/11/2001' is an invalid date, since 32 is not a valid day (or month).

Consult the DB2 for z/OS SQL Reference for the appropriate version of DB2 for a detailed description of valid DATE/TIME and TIMESTAMP constants, including supported formats.

---

**FMNDB970** **Date/time not validated (short). The default values for one or more date or time fields were not validated because the DB2 subsystem date/time format is LOCAL or unknown.**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a DATE or TIME column. The DB2 default for either the DATE or TIME format is either LOCAL, or unknown. In either case, the panel logic cannot validate the specified default value.

**User response:** No action required. Informational message. If any default value entered is invalid, an SQL error will occur when the attempt is made to create the DB2 object.

---

**FMNDB971** **Date/time not validated (short) The specified default date or time value was not validated because the DB2 subsystem date/time format is LOCAL or unknown. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a DATE, TIME, or TIMESTAMP column. This message is issued on pop-up panel "Create Table: Default Value". The DB2 default for either the DATE or TIME format is either LOCAL, or unknown. In either case, the panel logic cannot validate the specified default value.

**User response:** No action required. Informational message. If any default value entered is invalid an SQL error will occur when the attempt is made to create the DB2 object.

---

**FMNDB972** **Invalid data (short). The floating point number specified as a default value is invalid or outside the range supported by DB2. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when specifying a default value for a binary floating point column (REAL, FLOAT, DOUBLE). The specified default value is outside the range supported by DB2.

**User response:** The limits for floating point constants are documented in "Limits in DB2 for z/OS", in the DB2 for z/OS SQL Reference manual, for the appropriate version of DB2. Compare the specified default value against the documented values, and adjust as appropriate.

---

**FMNDB973** **GENERATED ALWAYS added (short). The GENERATED ALWAYS clause has been added to the definition of the column with a data type of ROWID. To change the GENERATED clause select option 8. (long).**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions), when adding a column definition for a ROWID column.

**User response:** No action required. Informational message. In most cases it should not be necessary to modify the GENERATED clause for a ROWID column. Option 8 (Generated Values) allows the GENERATED clause to be modified.

---

**FMNDB974** **Invalid database name (short). You cannot specify the name of an implicitly created database when creating a table. Implicitly created database names have the form DSNxxxxx, where xxxxx is any 5 numeric digits. (long)**

**Explanation:** This message is issued by the "Create Table" dialog (DB2 Object Functions) when attempting to create a table. The database name specified is invalid because it has the form 'DSNxxxxx', where xxxxx is 00000-99999 inclusive. Names of this form are reserved for use by DB2, as implicitly created database names. The table cannot be created.

**User response:** Specify a different DB2 database name, or remove the database name completely if an implicitly required database is acceptable.

---

**FMNDB980** **Invalid value (A/D) (short). The valid values for the A/D field are A, for ascending; D, for descending, or blank. (long).**

**Explanation:** This message is issued on the "Column Selection/Edit" panel, when a value other than 'A' or 'D' is entered in the "A/D" column.

**User response:** The "A/D" column in the "Column Selection/Edit" panel is used to specify the sort order for columns included in the ORDER BY clause. The valid values are 'A' for ascending (the default) or 'D' for descending. Specify one of these values, or leave the field blank for the default behaviour.

---

**FMNDB981** **Enter sort order (short). A sort order is required when a sort column is specified (A or D in the A/D field). Enter a number in the range 1..999. (long).**

**Explanation:** The 'Order' column in the "Column Selection/Edit" panel is used to specify the sort sequence for columns included in the ORDER BY clause. The user specified either 'A' or 'D' in the "A/D" column, but no value in the 'Order' column.

**User response:** Enter a number in the 'Order' column for every column that also has a non-blank value in the "A/D" column.

---

**FMNDB990** Mutually exclusive value (short). Specify a **JOBNAME** value, or an **ADDRESS** value, but not both. (long).

**Explanation:** This message is issued by the "Create Trusted Context" dialog (DB2 Object Functions). A value was entered for both the **JOBNAME** and **ADDRESS** fields, however only one value is acceptable.

**User response:** Specify either a **JOBNAME** value; or an **ADDRESS** value, but not both. The syntax for the **CREATE TRUSTED CONTEXT** SQL statement can be found in the DB2 for z/OS SQL Reference manual for the appropriate version of DB2.

---

**FMNDB991** Value required (short). Either a **JOBNAME** value or an **ADDRESS** value is required. (long).

**Explanation:** This message is issued by the "Create Trusted Context" dialog (DB2 Object Functions). No value was entered in either the **JOBNAME** or **ADDRESS** fields; a value is required for one.

**User response:** Specify either a **JOBNAME** value; or an **ADDRESS** value, but not both. The syntax for the **CREATE TRUSTED CONTEXT** SQL statement can be found in the DB2 for z/OS SQL Reference manual for the appropriate version of DB2.

---

**FMNDB992** Value not required (short). Do not specify a "Default Role Name" value when the "No Default Role" option is selected. (long).

**Explanation:** This message is issued by the "Create Trusted Context" dialog (DB2 Object Functions). The user selected the "No default role" option, and also entered a value in the "Default role name" field. The two selections are mutually exclusive.

**User response:** If a default role name is to be specified, deselect the "No default role" option. If there is to be no default role name, remove the "Default role name".

---

**FMNDB993** Value not required (short). Do not specify a "Security Label Name" value when the "No Default Security Label" option" is selected. (long)/msgtext>

**Explanation:** This message is issued by the "Create Trusted Context" dialog (DB2 Object Functions). The user selected the "No default security label" option, and also entered a value in the "Security label name" field. The two selections are mutually exclusive.

**User response:** If a default security label name is to be specified, deselect the "No default security label" option. If there is to be no default security label, remove the "Security label name".

---

**FMNDB994** Value not required (short). Do not select the "Without authentication" option when the "PUBLIC" option" is selected. (long).

**Explanation:** This message is issued by the "Create Trusted Context" dialog (DB2 Object Functions). The user did not select the "PUBLIC" use option, and selected the "Without authentication" option. The second selection requires that the first option also be selected.

**User response:** The valid choices for the two options ("PUBLIC" and "Without authentication") are: 1). Both options not selected. 2) Both options selected. 3) Only the first option selected.

---

**FMNDC000** Count rows

**Explanation:** This message is issued by the FM/DB2 Print function; it shows the progressive total when rows are being printed.

**User response:** No action required. Informational message.

---

**FMNDC001** :Count row(s) printed (short). Countrow(s) printed from DB2 object DB2 Object name. (long).

**Explanation:** This message is issued by the FM/DB2 Print function; it shows the total number of rows printed and is issued when printing is complete.

**User response:** No action required. Informational message.

---

**FMNDC002** Object list printed.

**Explanation:** This message is issued when a list of DB2 objects is printed by the FM/DB2 Object List utility (P command). The requested object list was successfully printed.

**User response:** No action required. Informational message.

---

**FMNDC010** DB2 SSID: DB2 SSID SQL ID: SQLID

**Explanation:** This is a message insert used by the FM/DB2 Print utility. It shows the DB2 SSID of the currently connected DB2 system, and the user current DB2 SQLID.

**User response:** No action required. Informational message.

---

**FMNDC011** Location: Location Table/View: Object Name

**Explanation:** This is a message insert used by the FM/DB2 Print utility. It shows the DB2 server name (Location) of the DB2 object being printed (blank indicates the locally connected DB2 system) and the DB2 Object



*Name Object Name being printed.*

**User response:** No action required. Informational message.

---

**FMNDC012 Row Number -**

**Explanation:** This is a message insert used by the FM/DB2 Print utility. It shows the row number for the row being printed.

**User response:** No action required. Informational message.

---

**FMNDC013 Location:** *Location Object Name: Object Name*

**Explanation:** This is a message insert used by the FM/DB2 Print utility. It shows the DB2 server name (*Location*) of the DB2 object being printed (*blank indicates the locally connected DB2 system*) and the DB2 Object Name *Object Name* being printed.

**User response:** No action required. Informational message.

---

**FMNDC100 Number of rows to browse**

**Explanation:** This is a translatable message displayed on the FM/DB2 editor function entry panel.

**User response:** No action required. Panel text.

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**FMNDC101 Number of rows to edit**

**Explanation:** This is a translatable message displayed on the FM/DB2 editor function entry panel.

**User response:** No action required. Panel text.

---

**FMNDC102 Option fixed at install time**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

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**FMNDC103 Format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDC104 Initially ON**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

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**FMNDC105 Enter "/" to select option**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

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**FMNDC106 Number of rows to view**

**Explanation:** This is a translatable message displayed on the FM/DB2 editor function entry panel.

**User response:** No action required. Panel text.

---

**FMNDC107 Select value**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

---

**FMNDC108 Scroll**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDC110 Skip locked rows**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

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**FMNDC111 Keep locks option**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

---

**FMNDC112 1. Use/Keep share locks**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

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**FMNDC113 2. Use/Keep update locks**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

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**FMNDC114 3. Use/Keep exclusive locks**

**Explanation:** This is a translatable message displayed on FM/DB2 editor options panels.

**User response:** No action required. Panel text.

---

**FMNDC170** Changes discarded (short). The invalid change to the data format option has been discarded. Enter one of the following values: 1, 2, 3, 4. (long).

**Explanation:** The user made an invalid change to the "Data format" value on the Import options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the import options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC171** Changes discarded (short). The invalid change to the duplicate key processing option has been discarded. Enter one of the following values: 1, 2. (long).

**Explanation:** The user made an invalid change to the "Duplicate key processing" value on the Import options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the import options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC172** Changes discarded (short). The invalid change to the maximum duplicates option has been discarded. Enter one of the following values: \*, ALL, or a number in the range 0-2147483647 inclusive. (long).

**Explanation:** The user made an invalid change to the "Max duplicates" value on the Import options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the import options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC174** Changes discarded (short). The invalid change to the auto-commit count option has been discarded. Enter a number in the range 0-2147483647 inclusive. (long).

**Explanation:** The user made an invalid change to the "Auto commit count" value on the Import options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the import options panel is re-displayed.

**User response:** No action required. Informational message. After making changes to the options, press

ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC180** Enter a value (short). A value is required. Enter a frequency between 0 and 1 exclusive. As an example 0.1 will sample approximately 10% of rows. (long).

**Explanation:** The user selected "random sampling" on the FM/DB2 Editor options panel, but did not enter a value for "sampling frequency". A sampling frequency is required when using random sampling.

**User response:** Enter a decimal value between 0.0 and 1.0. As an example, enter 0.1 will result in approximately 10% of the rows in the object being sampled. These rows will appear in the FM/DB2 editor session. Higher values will result in more rows being sampled; lower values will result in less rows being sampled.

---

**FMNDC181** Invalid value (short). Valid frequencies are 0.000000001 - 0.999999999 inclusive. Enter a value within these limits. (long).

**Explanation:** The user selected "random sampling" on the FM/DB2 Editor options panel, but did not enter a valid value for "sampling frequency". A valid sampling frequency is a decimal number between 0.0 and 1.0; with 9 digits of precision after the decimal point.

**User response:** Enter a decimal value between 0.0 and 1.0. As an example, enter 0.1 will result in approximately 10% of the rows in the object being sampled. These rows will appear in the FM/DB2 editor session. Higher values will result in more rows being sampled; lower values will result in less rows being sampled.

---

**FMNDC182** Enter a number (short). Enter a number (seed) to start the generation of pseudo-random numbers, or 0 to use a seed derived from the system clock. Valid values are 0-2147483647 inclusive. (long).

**Explanation:** The user selected "random sampling" on the FM/DB2 Editor options panel, but did not enter a valid value for "sampling seed". The seed value is used to initiate the pseudo-random number generator.

**User response:** Enter an integer between 0-2147483647 inclusive. A value of 0 sets the seed to a value based on the current value of the system clock on the computer, accurate to the microsecond, and is therefore a random value for most purposes. Any other value will result in repeatable behaviour, in terms of the rows sampled, for a given DB2 object and the same sampling frequency.

---

**FMNDC183** Changes discarded (short). The invalid change to the Initial skip count has been discarded. The Initial skip count value must be in the range 0-999999999. (long).

**Explanation:** The user made an invalid change to the "Initial skip count" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC184** Changes discarded (short). The invalid change to the Include count has been discarded. The Include count value must be in the range 1-999999999. (long).

**Explanation:** The user made an invalid change to the "Include count" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC185** Changes discarded (short). The invalid change to the Skip count has been discarded. The Skip count value must be in the range 0-999999999. (long).

**Explanation:** The user made an invalid change to the "Skip count" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC186** Changes discarded (short). The invalid change to the Sampling limit has been discarded. The Sampling limit value must be in the range 0-999999999. (long).

**Explanation:** The user made an invalid change to the "Sampling limit" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press

ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC187** Changes discarded (short). The invalid change to the Sampling frequency has been discarded. The Sampling frequency value must be in the range 0.000000001 - 0.999999999. (long).

**Explanation:** The user made an invalid change to the "Sampling frequency" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC188** Changes discarded (short). The invalid change to the Sampling seed has been discarded. The Sampling seed value must be in the range 0-2147483647. (long).

**Explanation:** The user made an invalid change to the "Sampling seed" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC189** Changes discarded (short). The invalid change to the Change count before auto commit has been discarded. The Change count before auto commit value must be in the range 0-2147483647. (long).

**Explanation:** The user made an invalid change to the "Change count before auto commit" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC190** Changes discarded (short). The invalid change to the Prefix Length option has been discarded. (long).

**Explanation:** The user made an invalid change to the "Prefix length" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor

options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC191** Changes discarded (short). The invalid change to the input/display characters has been discarded. The input/display delimiter characters must be non-blank and unique. (long).

**Explanation:** The user made an invalid change to the String delimiter and/or Null column indicator input/display characters on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC192** Changes discarded (short). The invalid change to the Edit locking option has been discarded. Enter one of the listed values for the Edit locking option. (long).

**Explanation:** The user made an invalid change to the "Edit locking" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC193** Changes discarded (short). The invalid change to the "Optimization for" value has been discarded. Enter a number in the range 0-999999 inclusive. Use 0 if no optimization clause is required. (long).

**Explanation:** The user made an invalid change to the "Optimization for" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC194** Changes discarded (short). The invalid change to the Keep locks option has been discarded. Enter one of the listed values for the Keep locks option. (long).

**Explanation:** The user made an invalid change to the "Keep locks" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC195** Changes discarded (short). The invalid change to the Scrollable cursor type option has been discarded. Enter one of the listed values for the Scrollable cursor type option. (long).

**Explanation:** The user made an invalid change to the "Scrollable cursor type" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor option's panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC196** Changes discarded (short). The invalid change to the Data sampling type option has been discarded. Enter one of the listed values for the Data sampling type option. (long).

**Explanation:** The user made an invalid change to the "Data sampling type" value on an Editor options panel, and then pressed the PFKey assigned to END (or typed END). The invalid value is discarded and the editor options panel is redisplayed.

**User response:** No action required. Informational message. After making changes to the options, press ENTER to validate the changes before attempting to exit the panel.

---

**FMNDC197** Enter a positive number (short). A positive number is required for this option when clustered sampling is selected. Enter a number in the range 1-999999999 inclusive. (long).

**Explanation:** The user selected "clustered sampling" on an FM/DB2 Editor options panel, but entered an invalid value for one of the "Include count" field. A positive integer value in the indicated range is required.

**User response:** Enter a positive integer value in the



range 1-999999999 inclusive.

---

**FMNDC198 Invalid value or number (short). A number is required for this option.**  
**Valid values are** *range inclusive. (long).*

**Explanation:** The user selected "cluster sampling", or "random sampling" on an FM/DB2 Editor options panel, but entered an invalid value in one of the other sampling fields. Valid values for the indicated field are shown in the message *range*.

**User response:** Enter a value in the range shown in the long message. To access the long message, press the PFKey assigned to HELP (typically PF1), or type HELP on the command line, followed by ENTER.

---

**FMNDC199 Enter a number (short). A number is required for the optimization clause.**  
**Valid values are** 0-999999 inclusive. Use 0 if no optimization clause is required. (long).

**Explanation:** The user cleared the "Optimize for" value on an FM/DB2 Editor options panel (and pressed ENTER). A value is required for this field.

**User response:** Enter a value in the range 0-999999 inclusive. Specifying 0 results in no "OPTIMIZE FOR nn ROWS" clause being added to the SELECT statement used to fetch the data for the current editor session. In some situations specifying a small value (eg 1) may change the access path used by DB2 when retrieving the data, thereby improving the response time. See the DB2 SQL Reference manual for a more complete explanation.

---

**FMNDC200 Invalid label range (short). The label range entered is invalid. Press help for more information. (long)**

**Explanation:** The user entered the EXPORT editor primary command, with labels. The labels specified are invalid. The export command cannot be performed.

**User response:** Check the labels specified carefully. One common cause of this error is specifying a label that does not exist. You can press the PFKey assigned to HELP (PF1 by default) to display additional help for this error.

---

**FMNDC201 NX|X|EX invalid (short). The NX|X|EX parameters cannot be specified when in SNGL mode. Press help for more information. (long).**

**Explanation:** The user entered the EXPORT editor primary command, in SNGL mode, with the NX, X or EX option. The excluded or not-excluded row options are not applicable in SNGL mode. The export command cannot be performed.

**User response:** Change the display mode to TABL and

re-issue the command. Alternatively, remove the excluded or not-excluded option and re-issue the command. You can press the PFKey assigned to HELP (PF1 by default) to display additional help for this error.

---

**FMNDC202 Not in zoom mode (short). The export primary command is invalid in Zoom mode. (long).**

**Explanation:** The user entered the EXPORT editor primary command, in ZOOM mode, which is not supported. The export command cannot be performed.

**User response:** Return to either TABL or SNGL display modes and re-issue the command. You can press the PFKey assigned to HELP (PF1 by default) to display additional help for this error.

---

**FMNDC203 No labels (short). Labels cannot be specified when in SNGL mode. Press help for more information. (long).**

**Explanation:** The user entered the EXPORT editor primary command, in SNGL mode, with a label range. Labels may only be specified for the EXPORT command in TABL display mode. The export command cannot be performed.

**User response:** Return to TABL display mode and re-issue the command. You can press the PFKey assigned to HELP (PF1 by default) to display additional help for this error.

---

**FMNDC204 No labels (short). Labels cannot be specified unless ALL|NX|X|EX is also specified. Press help for more information. (long).**

**Explanation:** The user entered the EXPORT editor primary command, with a label range, but without either the ALL or NX|X|EX parameters. When you specify a label range one of the ALL, NX|X|EX options is required. The export command cannot be performed.

**User response:** Press the PFKey assigned to HELP (PF1 by default) and review the following topics: "Syntax diagram " ALL|NX|X|EX parameter Modify the command to meet the requirements of the syntax diagram, and the intended usage of the EXPORT command, re-issue the command.

---

**FMNDC206 Export failed (short). The export operation failed. (long).**

**Explanation:** The user issued the EXPORT editor primary command in an FM/DB2 editor session. The command failed.

**User response:** Check the output data set for allocation/space and related errors.

---

**FMNDC207 LRECL mismatch (short). The (RECFM=F) export data set has LRECL=LRECL 1. The required LRECL is LRECL 2. Specify a different export data set. (long).**

**Explanation:** The user attempted an export operation and specified an LRECL=F data set that is incompatible with the exported data. The export operation cannot be performed.

**User response:** Use an export data set with LRECL=LRECL 2.

---

**FMNDC208 Inconsistent selection (short). The template usage option should only be set to None when the export data format is set to CSV. Select another template usage option. (long).**

**Explanation:** This message is issued by the FM/DB2 export function, on the 'To' panel. The user entered '5' (CSV) for the "Template usage" option. However, the export data format option set on the first export options panel is not CSV. The export cannot proceed.

**User response:** The choice for export data format, on the first export options panel, places restrictions on the template usage option that can be specified on the export 'To' panel. The following list shows which 'template usage' options can be specified for each export data format:

Export data format	Template usage option
FM/DB2 (SQLDA) format	All except 5 (CSV)
DB2 UNLOAD format	All except 5 (CSV)
DSNTIAUL format	All except 5 (CSV)
User defined	All except 5 (CSV)
Delimited variables (CSV)	5 (CSV) only.

---

**FMNDC209 LRECL mismatch (short). The (RECFM=V) export data set has LRECL=LRECL 1. The required LRECL is at least LRECL 2. Specify a different export data set.**

**Explanation:** The user attempted an export operation and specified an LRECL=F data set that is incompatible with the exported data. The export operation cannot be performed.

**User response:** Use an export data set with LRECL = LRECL 2.

---

**FMNDC210 Editor rows for:**

**Explanation:** This is a message inserted used by the FM/DB2 export function.

**User response:** None . Message insert used for panel text.

---

**FMNDC211 Result table for:**

**Explanation:** This is a message inserted used by the FM/DB2 export function.

**User response:** None . Message insert used for panel text.

---

**FMNDC220 NX|X|EX invalid (short). The NX|X|EX parameters cannot be specified when in browse mode. Press help for more information. (long).**

**Explanation:** The user entered the EXPORT editor primary command in a browse session, the EXPORT command included a reference to excluded, or not-excluded rows. This is not supported in an FM/DB2 browse session.

**User response:** Modify the EXPORT command to remove any reference to excluded, or not-excluded rows, retry the operation. If the intended usage requires the use of excluded or not-excluded rows as part of the EXPORT command, repeat the process using an FM/DB2 view session.

---

**FMNDC221 No labels (short). Labels cannot be specified when in browse mode. Press help for more information. (long).**

**Explanation:** The user entered the EXPORT editor primary command in a browse session, the EXPORT command included label references. There is no prefix area in an FM/DB2 browse session, so labels cannot be entered, nor can they be referred to.

**User response:** Modify the EXPORT command to remove any reference to labels, retry the operation.

---

**FMNDC230 Fixed RECFM invalid (short). The output data set has a fixed record format, which is not supported when using CSV format. Specify a data set with RECFM=VB or RECFM=V. (long).**

**Explanation:** This message is issued by the FM/DB2 Export utility, when CSV format is selected. The attributes of the output data set are incompatible with CSV format, which produces variable length output records.

**User response:** In general RECFM=F and RECFM=FB cannot be used with CSV format. You can specify the name of a new data set on the export 'To' panel and FM/DB2 will calculate the correct LRECL for you.

---

**FMNDC500 Executed OK (short). The ALTER|COMMENT|CREATE|DROP|GRANT|LABEL|REVOKE statement executed successfully. DB2 returned an SQLCODE of SQLCODE. (long).**

**Explanation:** This message is issued by the FM/DB2

Object List and Object Privileges utilities. An SQL statement was executed successfully.

**User response:** No action required. Informational message.

---

**FMNDC510** No rows returned (short). No rows were fetched, SQL code = +100. (long).

**Explanation:** This message is issued by the FM/DB2 Object List, Object Privileges and Explain utilities functions. A SELECT statement was executed, but returned no rows (SQLCODE+100).

**User response:** No action required. Informational message.

---

**FMNDC520** No allocation data (short). The PQTY/SQTY values in SYSIBM.SYSTABLEPART indicate that RUNSTATS has not been run. The primary and/or secondary space allocation data for the table space is unavailable. (long).

**Explanation:** This message is issued by the Alter table space and Alter index panels, accessed from the FM/DB2 Object list utility. FM/DB2 accessed the DB2 catalog to determine the current space allocation values for the table space or index, however this information is not available because the RUNSTATS utility has not been executed. You can resolve this problem by executing the RUNSTATS utility against the appropriate table space or index, and then repeating the ALTER operation.

**User response:** No action required. Informational message.

---

**FMNDC521** No allocation data (short). The PQTY/SQTY values in SYSIBM.SYSINDEXPART indicate that RUNSTATS has not been run. The primary and secondary space allocation data for the index space is unavailable. (long).

**Explanation:** This message is issued by the Alter index panel, accessed from the FM/DB2 Object list utility. FM/DB2 accessed the DB2 catalog to determine the current space allocation values for the index. However, this information is not available because the RUNSTATS utility has not been executed. You can resolve this problem by executing the RUNSTATS utility against the appropriate index, and then repeating the ALTER operation.

**User response:** No action required. Informational message.

---

**FMNDC531** INTEGER datatype, DEC(nn,0)

**Explanation:** This is a translatable message displayed by the FM/DB2 Create sequence function.

**User response:** No action required. Panel text.

---

**FMNDC533** 3. UNICODE

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC534** 3. Temporary database

**Explanation:** This is a translatable message displayed by the FM/DB2 Create database function.

**User response:** No action required. Panel text.

---

**FMNDC535** Log changes to LOB columns

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table space function.

**User response:** No action required. Panel text.

---

**FMNDC536** Log changes to data

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table space function.

**User response:** No action required. Panel text.

---

**FMNDC539** Instead of

**Explanation:** This is a translatable message displayed by the FM/DB2 Create trigger function.

**User response:** No action required. Panel text.

---

**FMNDC540** 1. Database

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC541** 2. Table space

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC542** 3. Table

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC543 4. Column**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC544 5. Plan**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC545 6. Package**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC546 7. Collection**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC547 8. Schema**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC548 9. Distinct type**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC549 9. Type**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object Privileges function.

**User response:** No action required. Panel text.

---

**FMNDC550 1. Database 8. Package 15. Trigger**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC551 2. Table space 9. Collection 16. Storage group**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

---

**FMNDC552 3. Table/view/alias 10. DBRM**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC553 4. Index 11. Schema**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC554 5. Column 12. Distinct type**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC555 6. Synonym 13. Function**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC556 7. Plan 14. Stored procedure**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC557 3. Table/view/alias 10. DBRM 17. Sequence**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC558 4. Index 11. Schema 18. Role**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC559 5. Column 12. Distinct type 19. Trusted context**

**Explanation:** This is a translatable message displayed by the FM/DB2 Object list function.

**User response:** No action required. Panel text.

---

**FMNDC570 Database . . . . .**

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table function.

**User response:** No action required. Panel text.

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**FMNDC571 Table Space . . . .**

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table function.

**User response:** No action required. Panel text.

---

**FMNDC572 Usage:**

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table function.

**User response:** No action required. Panel text.

---

**FMNDC573 1. Generate LIKE clause**

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table function.

**User response:** No action required. Panel text.

---

**FMNDC574 2. Load table information**

**Explanation:** This is a translatable message displayed by the FM/DB2 Create table function.

**User response:** No action required. Panel text.

---

**FMNDC578 Create Global Temporary Table**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

**FMNDC579 Create Table**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

**FMNDC580 Must be blank (short). Specify one value or the other, but not both. (long).**

**Explanation:** This message is issued by the FM/DB2 Privileges function. The user selected both options when the two options are mutually exclusive.

**User response:** Select one option, or the other, but not both. Consult the SQL Reference manual for the relevant syntax diagram for the command.

---

**FMNDC581 Cannot drop directly (short). An auxiliary table cannot be dropped directly. To drop an auxiliary table drop the table that uses the auxiliary table. (long).**

**Explanation:** This message is issued by the FM/DB2 "DB2 Object functions" utility. The user specified the combination of 'D' (Drop) and an object type of 12 (Auxiliary table'. This combination is not supported.

---

**User response:** You cannot directly drop an auxiliary table. Auxiliary tables should be dropped by a DROP of the table of which the auxiliary table is a part. See the DB2 SQL Reference for a full explanation of the use of auxiliary tables.

---

**FMNDC583 Reserved (short). Sequence number 1 is reserved for the SEL field. Specify a larger value. (long).**

**Explanation:** This message is issued by the "Column Selection/Edit" panel, when displayed from the FM/DB2 Object List, Object Privileges and Explain functions (Collectively ISQ functions). The object displays for ISQ functions use a modified version of the FM/DB2 editor to display the data, and allow the same template editor functions as a normal FM/DB2 editor session; with some restrictions. While you can specify a sequence number in the 'Seq' field, a value of 1 is reserved for the 'Sel' field, which appears on most ISQ panels.

**User response:** Specify the required ordering starting at '2', instead of '1'.

---

**FMNDC584 Must be blank (short). Specify the ALL parameter, or one or more values, but not both. (long).**

**Explanation:** This message is issued on various Revoke Privilege panels displayed by the FM/DB2 Privileges function. When REVOKING a privilege with SYSADM authority you may REVOKE the privilege from ALL users, or list 1-3 individual DB2 authids. These options are mutually exclusive, you cannot select ALL and also enter an individual DB2 authid.

**User response:** Select ALL if the privilege is to be REVOKed from all DB2 authids. Alternatively enter one or more individual DB2 authids.

---

**FMNDC585 Must be selected (short). The PUBLIC selection field must be selected when the AT ALL LOCATIONS selection field is selected. (long).**

**Explanation:** This message is issued by the Grant table and Grant column privileges' panels. The user selected the 'AT ALL LOCATIONS' field, but not the 'PUBLIC' field. Selecting the former requires that the latter also be selected

**User response:** Select both the 'PUBLIC' and 'AT ALL LOCATIONS' fields.

---

**FMNDC586 Not with ROLE (short). The ROLE and PUBLIC options cannot both be selected. PUBLIC is a special DB2 authid, not a valid role name. (long).**

**Explanation:** This message is issued by the DB2 Privileges utility when the user selects both the 'ROLE'

and 'PUBLIC' fields. The utility does not support the simultaneous use of both the PUBLIC and ROLE options.

**User response:** To GRANT/REVOKE the privileges to PUBLIC, clear the ROLE field and process the request. Similarly, to GRANT/REVOKE the privileges to a ROLE, clear the PUBLIC field and process the request.

---

**FMNDC587** **Not with ROLE (short). The ROLE and ALL options cannot both be selected. ALL can only be specified with DB2 authids. (long).**

**Explanation:** This message is issued by the DB2 Privileges utility when the user selects both the 'ROLE' and 'ALL' fields. The utility does not support the simultaneous use of both the PUBLIC and ALL options.

**User response:** To REVOKE the privileges from ALL DB2 authids that possess the privilege, clear the ROLE field and process the request. Similarly, to REVOKE the privileges from a ROLE, clear the ALL field and process the request.

---

**FMNDC588** **Not AT ALL LOCATIONS (short). The *Privilege type* privilege cannot be granted to PUBLIC AT ALL LOCATIONS. (long).**

**Explanation:** This message is issued by the DB2 Privileges utility, when granting table or column privileges. The "AT ALL LOCATIONS" may not be used.

**User response:** Deselect the "AT ALL LOCATIONS" option and process the request.

---

#### **FMNDC590 1. Database**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC591 2. Table space**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC592 3. Table**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC593 4. View**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC594 5. Alias**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC595 6. Index**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC596 7. Synonym**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC597 8. Distinct type**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC598 8. Type**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC599 9. Function**

**Explanation:** This is a translatable message displayed by the FM/DB2 object functions.

**User response:** No action required. Panel text.

---

#### **FMNDC600 Database**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

#### **FMNDC601 Table space**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC602 Table**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC603 View**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC604 Alias**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC605 Index**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC606 Synonym**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC607 Distinct type**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC608 Function**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC609 Stored procedure**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC610 Trigger**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

---

**FMNDC611 Storage Group**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC612 Global Temporary Table**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC613 Sequence**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC614 Role**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC615 Trusted Context**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC616 Type**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC620 Columns**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC621 Nulls/default values**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC622 CCSID/for data**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

---

**FMNDC623 Table options**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC624 Unique constraints**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC625 Referential constraints**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC626 Check constraints**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC627 Procedure exits**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC628 Generate values**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC629 Partitioning columns**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC630 Partitioning values**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC631 Create table**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

---

**FMNDC632 Char**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC633 Integer**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC634 Edit options**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC635 View options**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC636 To Sequential Data Set:**

**Explanation:** This is translatable message text, displayed by the FM/DB2 Export utility.

**User response:** No action required. Panel text.

---

**FMNDC637 To Partitioned, Sequential or VSAM Data Set:**

**Explanation:** This is translatable message text, displayed by the FM/DB2 Export utility.

**User response:** No action required. Panel text.

---

**FMNDC638 Member . . . . .**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDC640 (Use option 1 before options 2, 4-9)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC641 (Use option 1 before options 2,4-9,PC,PV)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---



---

**FMNDC642 (normally required, invalid with model LIKE)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC643 (editproc,validproc,more; optional)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC644 (primary/unique keys; optional)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC645 (foreign keys; optional)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC646 (optional)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC647 (Use option 1 before options 2, 4)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC648 (normally required, invalid with model)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC649 (CCSID; optional)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC651 Invalid data type (short) ROWID, CLOB, BLOB and DBCLOB columns cannot be specified in a global temporary table definition. (long).**

**Explanation:** This message is issued by the FM/DB2 Object functions utility, when attempting to create a

global temporary table (GTT). One or more of the columns defined for the GTT has a prohibited data type (ROWID, CLOB, BLOB or DBCLOB). The GTT cannot be created.

**User response:** Correct the definition for any columns defined as ROWID, CLOB, BLOB or DBCLOB, retry the operation.

---

**FMNDC660 Column information**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC661 Primary key information**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC662 Unique key information**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC663 Referential constraints**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC664 Check constraints**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC665 Column referential constraints**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC666 Table referential constraints**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC667 Load single-column referential constraints as**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC668 Default Value**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC670 DB2 Utility LISTDEF options**

**Explanation:** This is translatable message text displayed on the FM/DB2 Set Processing Options panel

**User response:** No action required. Panel text.

---

**FMNDC671 DB2 Utility OPTIONS options**

**Explanation:** This is translatable message text displayed on the FM/DB2 Set Processing Options panel

**User response:** No action required. Panel text.

---

**FMNDC672 DB2 Utility TEMPLATE options**

**Explanation:** This is translatable message text displayed on the FM/DB2 Set Processing Options panel

**User response:** No action required. Panel text.

---

**FMNDC673 DB2 Unload utility options**

**Explanation:** This is translatable message text displayed on the FM/DB2 Set Processing Options panel

**User response:** No action required. Panel text.

---

**FMNDC680 3. CSV, use NI char**

**Explanation:** This is translatable message text displayed on the FM/DB2 Export Options panel

**User response:** No action required. Panel text.

---

**FMNDC690 Compress . . . . .**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC691 2. Table space 10. Stored procedure**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC700 1. AUDIT 7. DROP FOREIGN KEY constraint**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC701 2. ADD column 8. DATA CAPTURE**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC702 3. VALIDPROC 9. ADD CHECK constraint**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC703 4. ADD PRIMARY KEY 10. DROP CHECK constraint**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC704 5. ADD FOREIGN KEY constraint 11. ADD RESTRICT ON DROP**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC705 6. DROP PRIMARY KEY 12. DROP RESTRICT ON DROP**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC710 1. AUDIT 8. DATA CAPTURE**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC711 2. ADD column 9. ADD CHECK constraint**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC712 3. VALIDPROC 10. DROP CHECK constraint**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC713 4. ADD PRIMARY KEY 11. ADD RESTRICT ON DROP**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC714 5. ADD FOREIGN KEY constraint 12. DROP RESTRICT ON DROP**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC715 6. DROP PRIMARY KEY 13. RENAME COLUMN**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC716 7. DROP FOREIGN KEY constraint:**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC720 C. ROUND\_CEILING**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC721 3 D. ROUND\_DOWN**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC722 F. ROUND\_FLOOR**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC723 G. ROUND\_HALF\_DOWN**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC724 E. ROUND\_HALF\_EVEN**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC725 H. ROUND\_HALF\_UP**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC726 U. ROUND\_UP**

**Explanation:** This is translatable message text displayed by the FM/DB2 System options function.

**User response:** No action required. Panel text.

---

**FMNDC730 (optional, valid for FLOAT and DECIMAL only)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC731 (optional, valid for FLOAT, DEC and DECFLOAT only)**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC732 Selective Partition Locking**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC733 Use selective partition locking**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDC740 Maximum number of partitions**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD000 Command list error (short). An error was encountered processing the list of valid commands for panel *panel\_name*.**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following

options: 3.4; 3.5; 4.5). The line commands that may be entered against a list of objects are defined using a customization string. An error occurred during the processing of this string for panel *panel\_name*.

**User response:** This is an internal error. Contact IBM support.

---

**FMNDD001 Customization error (short). An error was encountered processing the template customization string for panel *panel\_name*. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). Object lists are displayed using the FM/DB2 editor, the template for the object list is modified prior to display. The template customization is defined using a customization string. An error occurred during the processing of this string for panel *panel\_name*.

**User response:** This is an internal error. Contact IBM support.

---

**FMNDD002 No line commands (short). There are no line commands for this panel. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). In most cases you may enter one or more line commands against each row shown in the object list. In some few cases no line commands are available, in which case this message is issued.

**User response:** No action required. Informational message.

---

**FMNDD003 VDEFINE error, RC=Return code (short). A serious ISPF error has been encountered. VDEFINE RC=Return code. (long)**

**Explanation:** FM/DB2 attempted to use the ISPF VDEFINE service, the call failed with RC = *Return code*. In most cases the current function will terminate.

**User response:** The causes of this error are:

- Problems with the ISPF environment that have caused the ISPF service call to fail. Contact your Systems Programmer for assistance.
- An internal error. Contact IBM support.

Points for the Systems Programmer to consider include:

- ISPF libraries allocated incorrectly or incompletely.
- Full ISPF profile data sets.
- Out of memory, or short on memory, conditions. Are other ISPF applications running? Are multiple ISPF logical sessions active?

---

**FMNDD004 ISPF error, RC=Return code (short). A serious ISPF error has been encountered in FMN2IPSU. ISPF SELECT SERVICE RC=Return code (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A serious error was encountered in response to an ISPF SELECT service call (return code = *Return code*) In most cases the function will terminate.

**User response:** The usual causes of this error are:

- Problems with the ISPF environment that have caused the ISPF service call to fail. Contact your Systems Programmer for assistance.
- An internal error. Contact IBM support.

Points for the System Programmer to consider include:

- ISPF libraries allocated incorrectly or incompletely.
- Full ISPF profile data sets.
- Out of memory, or short on memory, conditions. Are other ISPF applications running? Are multiple ISPF logical sessions active?

---

**FMNDD005 :ISPF error, RC=Return code (short). A serious ISPF error has been encountered in FMN2IPSU. ISPF CONTROL SERVICE RC=Return code (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A serious error was encountered in response to an ISPF CONTROL service call (return code = *Return code*). In most cases the function will terminate.

**User response:** The usual causes of this error are:

- Problems with the ISPF environment that have caused the ISPF service call to fail. Contact your Systems Programmer for assistance.
- An internal error. Contact IBM support.

Points for the Systems Programmer to consider include:

- ISPF libraries allocated incorrectly or incompletely.
- Full ISPF profile data sets.
- Out of memory, or short on memory, conditions. Are other ISPF applications running? Are multiple ISPF logical sessions active?

---

**FMNDD006 VDELETE error, RC=Return code (short). A serious ISPF error has been encountered. VDELETE RC=Return code (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A serious error was encountered in response to an ISPF DELETE service call (return

code = *Return code*). In most cases the function will terminate.

**User response:** The usual causes of this error are:

- Problems with the ISPF environment that have caused the ISPF service call to fail. Contact your Systems Programmer for assistance.
- An internal error. Contact IBM support.

Points for the Systems Programmer to consider include:

- ISPF libraries allocated incorrectly or incompletely.
- Full ISPF profile data sets.
- Out of memory, or short on memory, conditions. Are other ISPF applications running? Are multiple ISPF logical sessions active?

---

**FMNDD007 No dynamic area (short). A serious error has been encountered. Panel *Panel name* does not contain a dynamic area and therefore cannot be used to display ISQ editor output. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A serious error was encountered attempting to display an ISPF panel.

**User response:** This is an internal error. Contact IBM support.

---

**FMNDD008 Command not available (short). The SQL command is not supported under CICS. (long).**

**Explanation:** This message is issued when FM/DB2 is running under CICS, and the user issues the SQL command. The SQL command is not available when running under CICS.

**User response:** No action required. Informational message.

---

**FMNDD010 Invalid command *Command* (short). "*Command*" is not a valid File Manager DB2 command. *List of valid commands*. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A command (for example XXXX) was issued on the TSO command line. However, this command is not recognized by the ISQ processor and cannot be run.

**User response:** No action required. Informational message.

---

**FMNDD011 Too many parms (short). "*Command*"> is followed by one or more parameters. It is only valid without parameters. *PARMS=Parameters*. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). A command *Command*, with parameters, was entered on the TSO command line. *Command* does not require parameters.

**User response:** Remove the extraneous parameters, re-issue the command.

---

**FMNDD012 No SQL to display (short). There is no SQL statement to display. (long).**

**Explanation:** The user entered the SQL command; however there is no current SQL statement to display.

**User response:** No action required. Informational message.

---

**FMNDD018 Object not found (short). No DB2 object at location *Location* matches the combination of object details entered at DB2 system *SSID*. Press Help for more information. (long).**

**Explanation:** The user entered a DB2 object name, including location, owner, and name. This object does not exist. You can press PF1 to see additional help for this error.

**User response:** Press PF1 to see a more detailed explanation of the error. The usual reasons for this error include:

- The nominated object does not exist. Is it spelled correctly?
- When the object name includes lower case letters you must ensure that automatic translation of object names is turned off. See the FM/DB2 systems options.
- When the automatic translation of object names is turned off, you must ensure that the object name entered matches the case of the actual object name. For example, DSN81010.EMP matches DSN81010.EMP, but dsn81010.EMP does not.

---

**FMNDD020 Invalid selection (short). The value entered is invalid. Type '?' in the field to display a list of valid values. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). The user entered a line command against a row. However, the line command is not valid for that type of object.

**User response:** Check for obvious mistakes such as typos. Type '?' in the field and press enter to show the list of valid commands for the object.



---

**FMNDD022 No SQL to display (short). There is no SQL statement to display. (long).**

**Explanation:** The user entered the SQL command; however there is no current SQL statement to display.

**User response:** No action required. Informational message.

---

**FMNDD028 Requires DB2 V9 (short). This command can only be issued when connected to a DB2 version 9 (or later) system. (long).**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). When connected to a DB2 version 8 system, the user entered a line command against a row; however the line command is only valid when connected to a DB2 version 9 (or later) system. The command cannot be processed.

**User response:** No action required. Informational message.

---

**FMNDD029 Must be <= max value (short). The min value entered must be less than or equal to, the max value entered. (long).**

**Explanation:** The user entered a value in a "minimum" field on the FM/DB2 Object List Options (2 of 2) panel. The value entered is greater than the corresponding maximum value, which is invalid.

**User response:** Check the minimum and maximum values for the appropriate column type. The minimum value sets the minimum display width for that column type; the maximum value set the maximum display width for that column type. The minimum display width cannot exceed the maximum.

---

**FMNDD100 Location:**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDD501 SQLCOST = Cst>.**

**Explanation:** This message is issued when a SQL statement is about to be executed, and indicates the comparative cost *Cost* of executing the current statement. The cost values are those returned by DB2 when the SQL statement to be executed is prepared. See the SQL Reference manual for the appropriate version of DB2 for a more detailed explanation.

**User response:** No action required. Informational message.

---

---

**FMNDD502 Invalid at remote server (short). "Line command" is only a valid command when entered against an object at the local server. For example, when the location field is blank. (long).**

**Explanation:** The user entered a line command against an object displayed by the FM/DB2 Interactive SQL (ISQ) Processor (Options 3.4, 3.5 and 4.5 use the ISQ processor). Some line commands are only valid when FM/DB2 is connected to the local DB2 server, an example is privilege related commands such as GRANT and REVOKE. The command cannot be executed.

**User response:** Connect directly to the remote server and reissue the command.

---

**FMNDD503 Data refreshed**

**Explanation:** This message is issued by the FM/DB2 Interactive SQL (ISQ) processor (used by the following options: 3.4; 3.5; 4.5). The data for the currently displayed object list has been refreshed. This can occur when, for example, a line command issued against an entry on the current panel was used to change the entry. One example of this is deleting the object.

**User response:** No action required. Informational message.

---

**FMNDD504 Invalid command (short). "Line command" is not a valid command. Valid commands are D(n), I(n), R(n), and S. (long).**

**Explanation:** This message is issued by the FM/DB2 Object functions utility. When a list of, for example, columns is displayed, the user can issue various commands to modify the entries in the list. The command *line command entered is invalid*.

**User response:** No action required. Informational message.

---

**FMNDD505 Invalid command (short). "Line command" is not a valid command. Valid commands are D(n), I(n), and R(n). (long).**

**Explanation:** This message is issued by the FM/DB2 Object functions utility. When a list of, for example, columns is displayed, the user can issue various commands to modify the entries in the list. The command *line command entered is invalid*.

**User response:** No action required. Informational message.

---

---

**FMNDD506 Invalid selection (short). Use S to select the column. (long).**

**Explanation:** This message is issued by the FM/DB2 Object functions utility. An invalid character was entered against an entry in a list of columns.

**User response:** Use 'S' to select the column.

---

**FMNDD507 Waiting for DB2 prepare ...**

**Explanation:** This message is issued by those FM/DB2 functions that use the FM/DB2 editor to display the result table for a SELECT statement. The FM/DB2 editor is operating in "Large" mode, meaning that a DB2 scrollable cursor is in use. The two operating modes for the FM/DB2 editor are described in detail in the FM User's Guide and Reference for DB2 data. Briefly, when a scrollable cursor is used, there can be a delay while DB2 prepares and opens the SQL statement used to access the data. See also message FMNDD508.

**User response:** No action required. Informational message.

---

**FMNDD508 Waiting for DB2 open ...**

**Explanation:** This message is issued by those FM/DB2 functions that use the FM/DB2 editor to display the result table for a SELECT statement. The FM/DB2 editor is operating in "Large" mode, meaning that a DB2 scrollable cursor is in use. The two operating modes for the FM/DB2 editor are described in detail in the FM User's Guide and Reference for DB2 data. Briefly, when a scrollable cursor is used, there can be a delay while DB2 prepares and opens the SQL statement used to access the data. See also message FMNDD507.

**User response:** No action required. Informational message.

---

**FMNDD510 Press enter to display the SQL for the view. You can modify/execute the SQL by selecting the "Execute SQL from data set" option.**

**Explanation:** This message is issued when the user enters the VS (show SQL used to create a view) command against a view in an object list display. The Edit/Execute SQL (Data Set) function is used to display the resulting SQL. When the user presses END or CANCEL from the SQL display, the object list is redisplayed.

**User response:** Press enter to see the SQL used to create the view.

---

---

**FMNDD511 Enter the name of a database and table space defined with at least 8K pages. The DB2 Version 8 DSN\_FUNCTION\_TABLE requires a larger page size than previous DB2 versions.**

**Explanation:** This message is issued when the user attempts to create a function table (DSN\_FUNCTION\_TABLE) on the Explain Utilities panel. This table requires a table space with a page size of 8K or greater, therefore both a database and table space name are required (The default database/table space will have a page size of 4K, which is inadequate).

**User response:** Enter the name of a database and table space that have a page size of at least 8K. You may need to contact your DB2 Database/System's Administrator for authority/information on how to do this.

---

**FMNDD540 Related tables for:**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDD541 No RI relationships (short). The related edit (REDIT) command was issued. There are no referential integrity relationships defined on the table. (long).**

**Explanation:** The user entered the REDIT editor primary command. When the object being edited is part of an referential integrity relationship this command displays the other DB2 objects in the relationship. No RI relationships exist that include the object being edited.

**User response:** No action required. Informational message.

---

**FMNDD542 Related tables**

**Explanation:** This is translatable message text used in various places.

**User response:** No action required. Translatable text.

---

**FMNDD590 10. Stored procedure**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

---

**FMNDD591 11. Trigger**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD592 12. Auxiliary table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD593 13. Storage group**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD594 14. Global temp. table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD595 15. Sequence**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD596 16. Role**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDD597 17. Trusted context**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE540 10. Function**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

**FMNDE541 11. Stored procedure**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

---

**FMNDE542 12. Storage group**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

**FMNDE543 13. Buffer pool**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

**FMNDE544 14. System**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

**FMNDE545 15. Sequence**

**Explanation:** This is translatable message text used by the FM/DB2 Object privileges utility.

**User response:** No action required. Panel text.

---

**FMNDE590 1. Database 9. Function**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE591 2. Table space 10. Stored procedure**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE592 3. Table 11. Trigger**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE593 4. View 12. Auxiliary table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE594 5. Alias 13. Storage group**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---



---

**FMNDE595 6. Index 14. Global temp. table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE596 7. Synonym 15. Sequence**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDE597 8. Distinct type**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF590 1. Database 9. Function 17. Trusted context**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF591 2. Table space 10. Stored procedure**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF592 3. Table 11. Trigger**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF593 4. View 12. Auxiliary table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF594 5. Alias 13. Storage group**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF595 6. Index 14. Global temp. table**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

---

**FMNDF596 7. Synonym 15. Sequence**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDF597 8. Type 16. Role**

**Explanation:** This is translatable message text used by the FM/DB2 Object functions utility.

**User response:** No action required. Panel text.

---

**FMNDH000 DB2 Command**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH001 Exit**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH002 Exit FM/DB2**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH010 Print settings**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH011 FM/DB2 system options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH012 Job card specifications**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH013 Compiler language selection**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

---

**FMNDH014 COBOL compiler specifications**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH015 HLASM compiler specifications**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH016 PL/I compiler specifications**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH017 Temporary Data Set Allocations**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH018 Output Data Set Allocations**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH019 ISPF settings**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH020 Editor options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH021 Copy utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH022 Object list utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

---

**FMNDH023 Export utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH024 DB2 LOAD utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH025 DB2 Utility LISTDEF options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH026 DB2 Utility OPTIONS options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH027 DB2 Utility TEMPLATE options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH028 DB2 Unload utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH029 Trace options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH030 Print utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH031 Import utility options**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

---

**FMNDH040 Print**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH041 Objects**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH042 Copy**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH043 Object List**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH044 DB2 Privileges**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH045 Import**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH046 Export**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH047 Create**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH048 DB2 Utilities**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

---

**FMNDH049 Audit Report**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH050 Print Browse**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH060 Help for help...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH061 Extended help...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH062 Keys help...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH063 Help index A-M**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH064 Help index N-Z**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH065 Tutorial...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH066 About...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

---

**FMNDH067 About DB2...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDH068 News about FM/DB2...**

**Explanation:** This is translatable message text that appears in pull-down menu lists.

**User response:** No action required. Panel text.

---

**FMNDJ000 ROLE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ001 Privilege to UPDATE column . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ002 Privilege to REFERENCE column :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ003 Held by application plan . . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ004 Held by application package . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ005 Privilege . . . . . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ006 Can create REFERENCES on this column**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ007 Can UPDATE this column**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ008 Collection ID . . . . . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ009 Consistency token . . . . .**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ010 Held by authorization ID . . :**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ011 AT ALL LOCATIONS**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ019 blank**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ090 S LOp ( Tab**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ091 Op**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ092 Value**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ093    )**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ094    Column Name**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ095    Data Type(length)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ100    Grant Buffer Pool Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ101    Grant Column Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ102    Grant Database Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ103    Grant Distinct Type Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ104    Grant Type Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ105    Grant Function Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ106    Grant Storage Group Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ107    Grant Schema Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ108    Grant Package Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ109    Grant Collection Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ110    Grant Stored Procedure Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ111    Grant Application Plan Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ112    Grant Sequence Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ113    Grant Table Space Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ114    Grant Table Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ115 Grant System Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ120 Revoke Buffer Pool Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ121 Revoke Database Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ122 Revoke Distinct Type Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ123 Revoke Type Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ124 Revoke Function Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ125 Revoke Storage Group Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ126 Revoke Schema Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ127 Revoke Package Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ128 Revoke Collection Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ129 Revoke Stored Procedure Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ130 Revoke Application Plan Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ131 Revoke Sequence Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ132 Revoke Table Space Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ133 Revoke Table Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ134 Revoke System Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ140 ROLE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ141 or**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



---

**FMNDJ142 Select with Y, G (with Grant option)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ143 Select with any character**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ144 PUBLIC**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ145 ALL**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ146 To**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ147 By**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ148 (Defaults to DSNDB04 if left blank)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ150 Column**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ151 Plan**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ152 Collection**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ153 Package**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ154 Schema**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ155 ON DISTINCT TYPE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ156 ON TYPE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ157 Storage group**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ158 Bufferpool**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ159 From**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ161 USAGE ON DISTINCT TYPE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ162    USAGE ON TYPE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ170    From**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ171    FM/DB2 System Options (1 of 4)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ172    FM/DB2 System Options (2 of 4)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ173    FM/DB2 System Options (3 of 4)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ174    Editor Options (1 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ175    Editor Options (2 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ176    Editor Options (3 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ177    Editor Options (4 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ178    Editor Options (5 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ179    Editor Options (6 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ180    Editor Options (7 of 7)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ184    Copy Options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ185    Object List Options (1 of 2)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ186    Object List Options (2 of 2)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ187    Import Options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ189    Print Utility Options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ190    COPY From**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



---

**FMNDJ191    IMPORT From**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ192    EXPORT From**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ200    Location**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ201    Owner**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ202    Name**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ203    Database**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ204    Table Space**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ205    Row count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ206    Data set name**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ207    Member**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ208    Copy count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ209    Volume**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ210    DB2 Object:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ211    Template:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ212    Processing Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ213    From Template:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ214    To Template:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ215    From DB2 Object:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ216 To DB2 Object:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ217 From Partitioned, Sequential or VSAM Data Set:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ218 From Copybook or Template:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ219 To Copybook or Template:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ220 (optional)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ221 Edit options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ222 Edit template**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ223 Re-edit template**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ224 Batch execution**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ225 Use uncommitted read**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ226 Print HEX representation**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ227 Copy panel values**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ228 Edit copy options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ229 Edit template mapping**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ230 Template usage**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ231 Enter "/", "A"lways to select option**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ232 Print mode**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ233 Enter "/", "A"lways**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ234 Data format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ235 Duplicate row options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ236 Disposition**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ237 Object type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ240 1. Above**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ241 2. Previous**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ242 3. Generate from table**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ243 4. Generate/Replace**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ244 5. No action required. (CSV output)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ245 1. Table**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ246 2. Single**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ247 1. Old or Reuse**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ248 2. Mod**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ250 Print Utility**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ251 Copy Utility**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ252 Import Utility**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ253 :Export Utility**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ254 Data Create Utility**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ255 UNLOAD Utility (Tables)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ256 DB2 Object Functions**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ257 Manage DB2 Privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ258 Basic SELECT Prototyping**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ260 Number of rows to print**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ261 Number of rows to copy**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ262 Number of rows to import**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ263 Number of rows to export**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ264 Number of rows to create**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ265 :Number of rows to unload**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ266 Number of rows to display**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ267 (required)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ268 (default)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ269 Schema**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ270 Object Identification Criteria:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ271 Select columns (S/A/D) or enter predicates to build the SELECT statement:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ272 Type SQL to generate the SQL for the drop statement only.**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ279 Import dataset:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ28x P**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ280 In**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ290 Enter \* for list**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ291 Database/table/collection/schema**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ300 Import count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ301 Export count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ302 Create count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ303 Unload count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ309 Start position**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ310 Create object**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ311 Drop object**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ312 Display privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ313 Grant privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ314 Revoke privileges**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ320 Use REXX proc**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ321 REXX proc name**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ322 Delete existing rows**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ323 1. Ignore**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ324 2. Update**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ325 Duplicate count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ326 NO LIMIT**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ329 Edit UNLOAD options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ330 Confirm object drop**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ340 1. FM/DB2 (SQLDA) format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ341 2. DB2 UNLOAD format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ342 3. DSN TIAUL format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ343 4. User defined**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ350 Object List Utility Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ351 Display width for varying columns:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ352 Filtering:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ356 Export Options (1 of 3)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ357 Export Options (2 of 3)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ358 Export Options (3 of 3)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ360 Show all catalog table columns**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ361 Show "unused" catalog table columns**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



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**FMNDJ362 Show "internal use only" catalog table columns**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ363 Use automatic column sizing**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ364 Use extended column name headings**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ365 Interpret columns containing codes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ366 Modify order of columns displayed**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ367 Display widths, filtering**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ368 Reposition to first matching row**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ370 Databases**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ371 Column names**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ372 Authorization identifiers**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ373 Object names**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ374 Remarks**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ380 Enter minimum and maximum values for each column type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ381 Min**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ382 Max**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ390 Maximum number of rows to fetch**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ400 Uppercase Translation:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ401 Encapsulation of SQL Identifiers in Double Quotes:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ402 More Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ403 Arbitrary SQL Select Statements:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ404 External Format for TIME Data Type Columns:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ405 Catalog Queries and Template Creation:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ406 CCSID Warning Message:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ407 CURRENT DECFLOAT ROUNDING MODE:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ411 Use double quotes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ412 Editor option**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ413 Display format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ420 Translate DB2 object names**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ421 Translate input SQL statements**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ422 Arbitrary select statements, time display format, template creation**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ423 CCSID warning option**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ424 Use uncommitted read when accessing the DB2 catalog**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ425 Retrieve foreign key information when building templates**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ430 1. For DB2 SQL reserved words**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ431 2. For IBM and DB2 SQL reserved words**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



---

**FMNDJ432 3. Always**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ433 1. Browse**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ434 2. View**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ435 3. Edit**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ436 1. ISO (HH.MM.SS)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ437 2. JIS (HH:MM:SS)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ438 3. DB2 DSNHDECP setting**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ439 FM/DB2 System Options (4 of 4)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ440 Editor choice for viewing output data, members:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ441 Editor choice for viewing output data, members**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ442 Use File Manager editor**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ450 Use uncommitted read**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ451 Delete existing rows**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ452 Ignore RI/Constraint errors**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ459 Duplicate key processing**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ460 1. Ignore**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ461 2. Update**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ462 Max duplicates**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ500 Display Format:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ501 Prefix Area:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ502 Enter Key Processing:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ503 Commit Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ504 Varying Length Columns:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ505 Columns that allow Null Values:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ506 Table Display Format:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ507 Single Display Format:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ508 Primary and Foreign Keys, Indexes:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ509 Editor CAPS Setting:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ510 Shadow Lines:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ511 Export Command:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ512 Concurrency Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ513 Optimization Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ514 Edit Locking Option:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ515 Audit Option:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ516 SQL Cursor Concurrency Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ517 String Delimiters:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ518 Null Column Indicators:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ519 Data Sampling:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ520 Initial display format**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ521 Enter key usage**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ522 Concurrency**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ523 Locking**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ524 Scrollable cursor type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ525 Sampling type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ526 Null Column Indicator:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ527 Auto Commit (Changes):**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ530 Display prefix area**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ531 Show prefix area on the right**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ532 Show excluded shadow lines**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ533 Table/Single format, prefix area and shadow options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ534 Key, index and export options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ535 Commit when save issued**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ536 Commit when no save errors**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ537 Remove trailing spaces**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ538 Show end of string**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ539 Convert spaces to DB2 null**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ540 Show data type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ541 Show scale line**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ542 Show column number**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ543 Show keys, indexes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ544 Left justify numerics**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ545 Allow updates to primary key**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ546 Show primary key**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ547 Show foreign key**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ548 Show index indicators**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ549 Show SQLCODE**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ550 Show export options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ551 Read-only access**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ552 Commit after data fetch**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ553 Varying length and nullable column options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ554 Enter key and commit processing options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ555 Optimization, large table and data sampling options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

---

**User response:** No action required. Panel text.

---

**FMNDJ556 Use uncommitted read**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ557 Concurrency and locking options**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ558 Use row count value**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ559 Auto-commit count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ560 1. Previous**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ561 2. Table**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ562 3. Single**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ563 1. No action**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ564 2. Save data**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ565 3. Save data and commit changes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ566 0. Uncommitted read**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ567 1. No with clause**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ568 2. Cursor stability**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ569 3. Read stability**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ570 4. Read stability keep locks**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ571 5. Repeatable read**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ572 6. Repeatable read keep locks**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ573 1. None**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ574 2. Share mode**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ575 3. Exclusive mode**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ576 1. Insensitive**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ577 2. Sensitive static**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ578 3. Sensitive dynamic**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ580 Prefix length**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ581 Input**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ582 Display**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ583 Optimize for**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ584 Sampling frequency**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ585 Sampling limit**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ586 Initial skip count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ587 Include count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ588 Skip count**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ589 Sampling seed**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ590 (A,6,7,8,9)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ591 Rows**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ595 Auto-size display width**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



---

**FMNDJ599 RESET**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ600 Large Table Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ601 Clustered Sampling:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ602 Random Sampling:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ603 Zoned Timestamp Columns:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ606 Import Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ607 From Table Concurrency Option:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ608 To Table Locking Option:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ609 Copy Options:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ610 1. None**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ611 2. Clustered sampling**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ612 3. Random sampling**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ620 Drop Database**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ621 Drop Table Space**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ622 Drop Table**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ623 Drop View**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ624 Drop Alias**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ625 Drop Index**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ626 Drop Synonym**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ627 Drop Distinct Type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ628 Drop Type**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ629 Drop Function**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ630 Drop Stored Procedure**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ631 Drop Trigger**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ632 Drop Storage Group**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ633 Drop Sequence**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ634 Drop Role**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ635 Drop Trusted Context**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ640 Database:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ641 Table Space:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ642 Table:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ643 View:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ644 Alias:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ645 Index:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ646 Synonym:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ647 Distinct Type:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---



---

**FMNDJ648 Type:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ649 Function:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ650 Stored Procedure:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ651 Trigger:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ652 Storage Group:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ653 Sequence:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ654 Role:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ655 Trusted Context:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ660 Import Report**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ670 Source and target:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ671 Rows imported:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ672 Rows updated:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ673 Errors:**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ674 Row update not selected**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ675 Records read (Start, First error)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ680 Source dataset**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ681 Committed (successful) changes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ682 Uncommitted (unsuccessful) changes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ683 Total successful changes**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ684 Duplicate keys/Max duplicates**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ685 Updates**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ686 Record selection**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ687 Dropped (REXX proc)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ688 Other**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ689 DB2 object**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ690 Native Unicode processing**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ700 (The database will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ701 (The table will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ702 (The table space will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ703 (The view will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ704 (The alias will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ705 (The synonym will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** None/ Panel text.

---

**FMNDJ706 (The DISTINCT TYPE will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ707 (The TYPE will be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ710 (Warning: Plans/packages may be invalidated by this operation)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ711 (Warning: Cast functions and privileges may also be dropped)**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ712** (Warning: All dependent objects will also be dropped)

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ713** Press ENTER to confirm drop.

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ714** Press CANCEL or EXIT to cancel drop.

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ720** Enter, Execute and Explain SQL

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ721** Edit/Execute SQL (Data Set)

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ730** EXPLAIN command options:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ731** SELECT statement options:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ732** SQL statement:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ733** Input Data Set:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ734** SELECT Options:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ735** EXPLAIN Options:

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ740** Query number

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ741** Execution options

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ742** Show results

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ750** First column

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ751** Last column

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ752** Comment chars

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ753** Edit data set

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

---

**FMNDJ754    Execute SQL from data set**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ755    Re-edit data set after execution**

**Explanation:** This is a translatable message displayed on various FM/DB2 panels.

**User response:** No action required. Panel text.

---

**FMNDJ999    File Manager/DB2 problem - message**

*Message number***not found in table.**

**Explanation:** This message is issued when an attempt is made to issue message *Message number*, but the message number could not be found. It is a "catch all" message.

**User response:** If this message occurs during normal processing the likely cause is a logic error. Contact IBM support for assistance.



---

## Support resources and problem solving information

This section shows you how to quickly locate information to help answer your questions and solve your problems. If you have to call IBM® support, this section provides information that you need to provide to the IBM service representative to help diagnose and resolve the problem.

For a comprehensive multimedia overview of IBM software support resources, see the IBM Education Assistant presentation “IBM Software Support Resources for System z Enterprise Development Tools and Compilers products” at <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp?topic=/com.ibm.iea.debugt/debugt/6.1z/TrainingEducation/SupportInfoADTools/player.html>.

- “Searching IBM support Web sites for a solution”
- “Obtaining fixes” on page 1004
- “Receiving support updates through e-mail notification” on page 1005
- “Receiving support updates through RSS feeds” on page 1006
- “If you need to contact IBM Software Support” on page 1006

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### Searching IBM support Web sites for a solution

You can search the available knowledge bases to determine whether your problem was already encountered and is already documented.

- “Searching the information center”
- “Searching product support documents”
- “IBM Support Assistant” on page 1004

### Searching the information center

You can find this publication and documentation for many other products in the IBM System z Enterprise Development Tools & Compilers information center at <http://publib.boulder.ibm.com/infocenter/pdthelp/v1r1/index.jsp>. Using the information center, you can search product documentation in a variety of ways. You can search across the documentation for multiple products, search across a subset of the product documentation that you specify, or search a specific set of topics that you specify within a document. Search terms can include exact words or phrases, wild cards, and Boolean operators.

To learn more about how to use the search facility provided in the IBM System z Enterprise Development Tools & Compilers information center, you can view the multimedia presentation at <http://publib.boulder.ibm.com/infocenter/pdthelp/v1r1/index.jsp?topic=/com.ibm.help.doc/InfoCenterTour800600.htm>.

### Searching product support documents

Use the System z Enterprise Development Tools & Compilers information center or the IBM support site at [www.ibm.com/software/support](http://www.ibm.com/software/support) to search for the latest, most complete information that might help you resolve your problem.

When you access the IBM support site, you can specify any of the following products for which you want information to be displayed:

- Application Performance Analyzer for z/OS
- Debug Tool for z/OS
- Enterprise COBOL for z/OS
- Enterprise PL/I for z/OS
- Fault Analyzer for z/OS
- File Manager for z/OS
- Optim Move for DB2
- WebSphere Developer Debugger for System z
- Workload Simulator for z/OS and OS/390 Support

When you access the IBM support site, you can also use the IBM Support Portal to customize the support information to be displayed and save product names that you specify. There is also a search facility provided with the IBM Support Portal that allows you to narrow the search scope and search only product support documents for the products that you specify. The IBM Support Portal can be accessed through the IBM support site at [www.ibm.com/software/support](http://www.ibm.com/software/support) or directly at [www.ibm.com/support/entry/portal](http://www.ibm.com/support/entry/portal). For information about customizing your IBM support site experience using the IBM Support Portal, refer to [https://www.ibm.com/blogs/SPNA/entry/the\\_ibm\\_support\\_portal\\_videos?lang=en\\_us](https://www.ibm.com/blogs/SPNA/entry/the_ibm_support_portal_videos?lang=en_us).

## IBM Support Assistant

The IBM Support Assistant (also referred to as ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. It provides quick access to support-related information. You can use the IBM Support Assistant to help you in the following ways:

- Search through IBM and non-IBM knowledge and information sources across multiple IBM products to answer a question or solve a problem.
- Find additional information through product and support pages, customer news groups and forums, skills and training resources and information about troubleshooting and commonly asked questions.

In addition, you can use the built in Updater facility in IBM Support Assistant to obtain IBM Support Assistant upgrades and new features to add support for additional software products and capabilities as they become available.

For more information, and to download and start using the IBM Support Assistant for IBM System z Enterprise Development Tools & Compilers products, please visit [http://www.ibm.com/support/docview.wss?rs=2300&context=SSFMHB&dc=D600&uid=swg21242707&loc=en\\_US&cs=UTF-8&lang=en](http://www.ibm.com/support/docview.wss?rs=2300&context=SSFMHB&dc=D600&uid=swg21242707&loc=en_US&cs=UTF-8&lang=en).

General information about the IBM Support Assistant can be found on the IBM Support Assistant home page at <http://www.ibm.com/software/support/isa>.

---

## Obtaining fixes

A product fix might be available to resolve your problem. To determine what fixes and other updates are available, the following information is available from the IBM support site. You can also view the following information from the IBM Support Portal when you specify the applicable products.

- Latest PTFs for Application Performance Analyzer for z/OS
- Latest PTFs for Debug Tool for z/OS

- Latest PTFs for Fault Analyzer for z/OS
- Latest PTFs for File Export for z/OS
- Latest PTFs for File Manager for z/OS
- Latest fixes for Optim Move for DB2
- Latest PTFs for WebSphere Studio Asset Analyzer for Multiplatforms
- Latest PTFs for Workload Simulator for z/OS and OS/390

When you find a fix that you are interested in, click the name of the fix to read its description and to optionally download the fix.

The IBM Support Portal is a way for you to specify specific products for which you want to display support information. The Support Portal can be accessed through the IBM support site at [www.ibm.com/software/support](http://www.ibm.com/software/support) or directly at [www.ibm.com/support/entry/portal](http://www.ibm.com/support/entry/portal). For information about how to customize your IBM support site experience using the IBM Support Portal, refer to [https://www.ibm.com/blogs/SPNA/entry/the\\_ibm\\_support\\_portal\\_videos?lang=en\\_us](https://www.ibm.com/blogs/SPNA/entry/the_ibm_support_portal_videos?lang=en_us).

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at <http://techsupport.services.ibm.com/guides/handbook.html>.

---

## Receiving support updates through e-mail notification

To receive e-mail notifications about fixes and other software support news, follow the steps below. Additional information is provided at <http://www.ibm.com/support/docview.wss?rs=615&uid;=swg21172598>.

1. Go to the IBM software support site at <http://www.ibm.com/software/support>.
2. Click **Request e-mail updates** in the **Additional support links** section of the page.
3. Click any **My Notifications** link on the page that is displayed.
4. If you have already registered for **My notifications**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.
5. In the **My notifications** tool, click the **Subscribe** tab to specify products for which you want to receive e-mail updates.
6. To specify Problem Determination Tools products, click **Other software** and then select the products for which you want to receive e-mail updates, for example, **Debug Tool for z/OS** and **File Manager for z/OS**.
7. To specify a COBOL or PL/I compiler, click **Rational** and then select the products for which you want to receive e-mail updates, for example, **Enterprise COBOL for z/OS**.
8. After selecting all products that are of interest to you, scroll to the bottom of the list and click **Continue**.
9. Determine how you want to save your subscription. You can use the default subscription name or create your own by entering a new name in the **Name** field. It is recommended that you create your own unique subscription name using a something easily recognized by you. You can create a new folder by entering a folder name in the **New** field or select an existing folder from the pull-down list. A folder is a container for multiple subscriptions.
10. Specify the types of documents you want and the e-mail notification frequency.



11. Scroll to the bottom of the page and click **Submit**.

To view your current subscriptions and subscription folders, click **My subscriptions**.

If you experience problems with the **My notifications** feature, click the **Feedback** link in the left navigation panel and follow the instructions provided.

---

## Receiving support updates through RSS feeds

To receive RSS feeds about fixes and other software support news, go to the following web site and select the products in which you are interested:

- <http://www.ibm.com/software/support/rss/other/index.html>.

---

## If you need to contact IBM Software Support

IBM Software Support provides assistance with product defects.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli®, Lotus®, and Rational® products, as well as DB2 and WebSphere® products that run on Windows, or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:

### Online

Go to the Passport Advantage Web site at [http://www.lotus.com/services/passport.nsf/WebDocs/Passport\\_Advantage\\_Home](http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home) and click **How to Enroll**.

### By phone

For the phone number to call in your country, go to the IBM Software Support Web site at <http://techsupport.services.ibm.com/guides/contacts.html> and click the name of your geographic region.

- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request Web site at <https://techsupport.services.ibm.com/ssr/login>.
- For customers with IBMLink, CATIA, Linux, S/390, iSeries®, pSeries®, zSeries®, and other support agreements, go to the IBM Support Line Web site at <http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006>.
- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web site at <http://www.ibm.com/servers/eserver/techsupport.html>.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. From other countries, go to the contacts page of the *IBM Software Support Handbook* on the Web at <http://techsupport.services.ibm.com/guides/contacts.html> and click the name of your geographic region for phone numbers of people who provide support for your location.

To contact IBM Software support, follow these steps:

1. "Determining the business impact"
2. "Describing problems and gathering information"
3. "Submitting problems" on page 1008

## Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem that you are reporting. Use the following criteria:

### Severity 1

The problem has a **critical** business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

### Severity 2

The problem has a **significant** business impact. The program is usable, but it is severely limited.

### Severity 3

The problem has **some** business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

### Severity 4

The problem has **minimal** business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

## Describing problems and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently.

To save time, if there is a Mustgather document available for the product, refer to the Mustgather document and gather the information specified. Mustgather documents contain specific instructions for submitting your problem to IBM and gathering information needed by the IBM support team to resolve your problem. To determine if there is a Mustgather document for this product, go to the product support page and search on the term Mustgather. At the time of this publication, the following Mustgather documents are available:

- Mustgather: Read first for problems encountered with Application Performance Analyzer for z/OS: [http://www.ibm.com/support/docview.wss?rs=2300&context=SSFMHB&q1=mustgather&uid=swg21265542&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=2300&context=SSFMHB&q1=mustgather&uid=swg21265542&loc=en_US&cs=utf-8&lang=en)
- Mustgather: Read first for problems encountered with Debug Tool for z/OS: [http://www.ibm.com/support/docview.wss?rs=615&context=SSGTSD&q1=mustgather&uid=swg21254711&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=615&context=SSGTSD&q1=mustgather&uid=swg21254711&loc=en_US&cs=utf-8&lang=en)
- Mustgather: Read first for problems encountered with Fault Analyzer for z/OS: [http://www.ibm.com/support/docview.wss?rs=273&context=SSXJAJ&q1=mustgather&uid=swg21255056&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=273&context=SSXJAJ&q1=mustgather&uid=swg21255056&loc=en_US&cs=utf-8&lang=en)
- Mustgather: Read first for problems encountered with File Manager for z/OS: [http://www.ibm.com/support/docview.wss?rs=274&context=SSXJAV&q1=mustgather&uid=swg21255514&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=274&context=SSXJAV&q1=mustgather&uid=swg21255514&loc=en_US&cs=utf-8&lang=en)

- Mustgather: Read first for problems encountered with Enterprise COBOL for z/OS: [http://www.ibm.com/support/docview.wss?rs=2231&context=SS6SG3&q1=mustgather&uid=swg21249990&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=2231&context=SS6SG3&q1=mustgather&uid=swg21249990&loc=en_US&cs=utf-8&lang=en)
- Mustgather: Read first for problems encountered with Enterprise PL/I for z/OS: [http://www.ibm.com/support/docview.wss?rs=619&context=SSY2V3&q1=mustgather&uid=swg21260496&loc=en\\_US&cs=utf-8&lang=en](http://www.ibm.com/support/docview.wss?rs=619&context=SSY2V3&q1=mustgather&uid=swg21260496&loc=en_US&cs=utf-8&lang=en)

If the product does not have a Mustgather document, please provide answers to the following questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can you re-create the problem? If so, what steps were performed to re-create the problem?
- Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, and so on.
- Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

## Submitting problems

You can submit your problem to IBM Software Support in one of two ways:

### Online

Click **Open service request** on the IBM Software Support site at <http://www.ibm.com/software/support/probsub.html>. In the Other support tools section, select IBMLink to open an Electronic Technical Response (ETR). Enter your information into the appropriate problem submission form.

### By phone

Call 1-800-IBMSERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the *IBM Software Support Handbook* at <http://techsupport.services.ibm.com/guides/contacts.html> and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

After a Problem Management Record (PMR) is open, you can submit diagnostic MustGather data to IBM using one of the following methods:

- FTP diagnostic data to IBM
- If FTP is not possible, email diagnostic data to [techsupport@mainz.ibm.com](mailto:techsupport@mainz.ibm.com). You must add PMR xxxxx bbb ccc in the subject line of your email. xxxxx is your PMR number, bbb is your branch office, and ccc is your IBM country code. Click here <http://itcenter.mainz.de.ibm.com/ecurep/mail/subject.html> for more details.

Always update your PMR to indicate that data has been sent. You can update your PMR online or by phone as described above.

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## Programming interface information

The User's Guide and Reference documents intended Programming Interfaces that allow the customer to write programs to obtain the services of File Manager.

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## Trademarks

A current list of IBM trademarks is available on the Web at "Copyright and trademark information", <http://www.ibm.com/legal/copytrade.shtml>.



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## Bibliography

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### File Manager publications

*File Manager Customization Guide*, SC19-3673  
*File Manager User's Guide and Reference*, SC19-3674  
*File Manager User's Guide and Reference for DB2 Data*, SC19-3675  
*File Manager User's Guide and Reference for IMS Data*, SC19-3676  
*File Manager User's Guide and Reference for CICS*, SC19-3677  
*File Manager Fact Sheet*, G325-2429  
*File Manager License Information*, GC19-3672  
*File Manager Program Directory*, GI10-8918

*z/OS DFSMS Object Access Method Application Programmer's Reference*, SC35-0425  
*z/OS DFSMS: Using Data Sets*, SC26-7410  
*z/OS DFSMS: Using Magnetic Tapes*, SC26-7412  
*z/OS ISPF User's Guide Vol 1*, SC34-4822  
*z/OS ISPF User's Guide Vol II*, SC34-4823  
*z/OS MVS JCL Reference*, SA22-7597  
*z/OS MVS System Messages, Vol 5*, SA22-7635  
*z/OS Support for Unicode Using Conversion Services*, SA22-7649  
*z/OS TSO/E Command Reference*, SA22-7782  
*z/OS TSO/E Programming Services*, SA22-7789  
*z/OS TSO/E REXX Reference*, SA22-7790  
*z/OS TSO/E REXX User's Guide*, SA22-7791

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### Related publications for Problem Determination Tools

*IBM Problem Determination Tools for z/OS Common Component Customization Guide and User Guide*, SC19-3690

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### Related publications for COBOL

*IBM COBOL Language Reference*, SC26-9046  
*IBM COBOL Programming Guide for OS/390 & VM*, SC26-9049

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### Related publications for PL/I

*IBM VisualAge PL/I Language Reference*, SC26-9476  
*IBM VisualAge PL/I for OS/390 Programming Guide*, SC26-9473

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### Related publications for DB2

See the following publications for your version of DB2:

*DB2 UDB for z/OS Administration Guide*  
*DB2 Application Programming and SQL Guide*  
*DB2 Utility Guide and Reference*  
*DB2 UDB for z/OS Messages and Codes*  
*DB2 UDB for z/OS SQL Reference*  
*DB2 Administration Tool for z/OS User's Guide and Reference*  
*DB2 V9.1 for z/OS Codes*

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### Related publications for z/OS®

*z/OS DFSMS Access Method Services for Catalogs*, SC26-7394

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### Softcopy publications

The following collection kits contain File Manager and related product publications in BookManager® format:

- *z/OS Software Products Collection Kit*, SK3T-4270
- *OS/390 Collection Kit*, SK2T-6700





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