IBM

Addenda to File Manager V13R1 documentation

Contents

About this document

This document provides details of all the APAR service fixes that impact upon documentation, for IBM File Manager for z/OS Version 13.1, since the most recent edition of the product manuals. These editions are:

- Customization Guide (SC19-4118-03) - Fourth Edition
- User's Guide and Reference (SC19-4119-03) - Fourth Edition
- User's Guide and Reference for DB2 Data (SC19-4120-01) - Second Edition
- User's Guide and Reference for IMS Data (SC19-4121-03) - Second Edition
- User's Guide and Reference for CICS (SC19-4122-00) - First Edition

The Addendum document is divided into two parts:

- **Part One: PTF/APAR documentation changes**

  This section lists the changes to the File Manager for z/OS Version 13 Release 1 documentation that are required to reflect new behavior resulting from the application of APAR fixes.

  The fixes are listed by PTF number, in reverse date order, so that the most recently released fix appears at the beginning of the document. Each description shows:

  - The set of PTF numbers in the release
  - The date of the PTF release
  - The APARs included in the released fix
  - Details of those APAR changes that affect documentation
  - Page references for the manuals affected by the change

  Note:

  1. This document does NOT describe those APAR fixes that do not have an impact upon documentation.
  2. The enhancements and corrections described in this section are only available after applying the listed PTFs for the APAR

- **General documentation changes**

  This section describes enhancements, corrections and updates in the documentation for File Manager for z/OS Version 13 Release 1. These changes are not associated with PTF numbers, as they do not require the application of any code updates.

  The changes are grouped by manual and listed within each section in reverse date order. That is, the most recent documentation change appears at the beginning of each manual section.

The page numbers referenced in this document are the page numbers in the latest version of the relevant PDF. The page number refers to the start of the section or subsection.

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Part 1. PTF/APAR documentation changes

UI36120

Release Date: **16 March 2016**

This set of PTFs contains these APAR fixes:
- PI55124

PI55303

Release Date: **16 March 2016**

Initial problem description

File Manager support required for IBM Application Delivery Foundation for z Systems V1.2 5697-CDT.

Outline of solution

File Manager has been updated as follows:

1. File Manager checks (via registration status check) for the presence of ADFz 5697-CDT. If present, it is registered if it is specified in IFAPRDxx as STATE(ENABLED). File Manager processing terminates if specified as STATE(DISABLED).

2. Sample FMNWIFAF is provided as sample entry for IFAPRDxx.

3. For non-ADFz users, use the sample with STATE(NOTDEFINED) to prevent inadvertent registration.

Documentation impact

This APAR requires changes to:
- Customization Guide (SC19-4118-03)

Changes to the Customization Guide

In Chapter 2 "Customizing the operating environment for File Manager", in the section "Enable/Register File Manager" (on page 11) *replace* the text at the start of the section with this text:

There are four 'bundles' containing File Manager: 5697-CDT(ADFz), 5697-CDT(COBOL SUITE), 5655-DMS, and 5655-PDS.

If you purchased File Manager as part of product code 5697-CDT IBM Application Delivery Foundation for z Systems include an entry in the IFAPRDxx parmlib member as follows:

```
PRODUCT OWNER('IBM CORP')
NAME('IBM APP DLIV FND')
ID(5697-CDT)
VERSION(*) RELEASE(*) MOD(*)
FEATURENAME('FILE-MANAGER')
STATE(ENABLED)
```

Sample registration parmlib entry FMNWIFAF, which contains the above statements, is provided in your `hlq.SFMNSAM1` data set.

UI35829, UI35830, UI35831, UI35832, UI35833, UI35834, UI35835, UI35836, UI35837

Release Date: **14 March 2016**

This set of PTFs contains these APAR fixes:
• PI55124

PI55124

Release Date: **14 March 2016**

Initial problem description

1. File Manager field statistics produce a percentage value based on the number of record types compared. It does not display a percentage based on the number of record types changed.

2. File Manager has no ability to provide a menu of functions to process a data set name on an ISPF 3.4 list or ISPF data set list.

Outline of solution

1. File Manager has been enhanced to include two percentage values for field statistics.

   Percentage compared
   > This is the existing statistic based on records of that type compared.

   Percentage changed
   > This is a new percentage based on the records of that type that have been changed.

2. A new exec FMNR has been created to run a cut down version of a File Manager menu from an ISPF 3.4 data set list. All selectable functions will populate their respective entry panels with data set name adjacent to the command.

Documentation impact
This APAR requires changes to:
• Customization Guide (SC19-4118-03)
• User's Guide and Reference (SC19-4119-03)

Changes to the Customization Guide

In Chapter 2 "Customizing the operating environment for File Manager", after the section "Making File Manager the default VSAM editor" (on page 13), *add* this new section:

Invoking File Manager from ISPF 3.4 or a data set list

You can invoke a cut-down File Manager primary options menu against any data set on an ISPF 3.4 or data set list by invoking the supplied exec FMNR as a line command. Any subsequent entry panel navigated to via the cut-down menu has the primary data set name populated with the corresponding data set name from the ISPF 3.4 or data set list.

Note: This assumes the hlq.SFMNEXEC library has been added to SYSEXEC for the ISPF session.

Changes to the User's Guide and Reference

Chapter 6 "Managing data sets"

In the section "Comparing data sets using templates" *add* the "Show field statistics" option description after "Show length in hex" (page 298):

Show field statistics

This option produces the field statistics report showing the number and percentage of mismatches by field. This option only applies when the synchronization option is One-to-one or Keyed.

In the subsection "Report Sections" (in section "Comparison output") under the section "Template Details" (page 302), *change* "three sections" to "five sections". Then *add* the section "Field Statistics":

Field statistics

Field statistics are produced when the Show Field Statistics option has been selected for a formatted compare where the synchronization option is One-to-one or Keyed.

In the same section ("Comparison Output"), before the "Body section record formats" section *add* the new section "Field Statistics Report".

Field Statistics report: This shows the old and new field names, number of mismatches and two percentage values. The percentage values are calculated as followed:

Compared

This is percentage of the number of mismatches for the given field to the number of compared records for that record type.

Changed

This is the percentage of the number of mismatches for the given field to the number of changed records for that record type.

Chapter 15 "Panels and fields"

In the Primary Option Menu panel, after figure 212, *add* this:

or

```
   Process   Options   Help
  ─────────────────────────────────────────────────────────────────────
  File Manager                  Primary Option Menu

  0  Settings      Set processing options            User ID . : TYRONED
  1  View          View data                         System ID : FMD2
  2  Edit          Edit data                         Appl ID . : FMN
  3  Utilities     Perform utility functions         Version . : 13.1.0
  X  Exit          Terminate File Manager            Terminal. : 3278
                                                     Screen. . : 1
                                                     Date. . . : 2016/01/28
                                                     Time. . . : 12:32




  Command ===> _____
  4  F1=Help     F2=Split     F3=Exit      F4=CRetriev  F7=Backward  F8=Forward
    F9=Swap     F10=Actions  F12=Cancel
```

Figure 1. File Manager Primary Option Menu when invoked via FMNR EXEC from ISPF 3.4 data set list

Add this new panel:

Utility Functions menu panel from ISPF 3.4: Lists the utility functions available within File Manager from ISPF 3.4 FMNR EXEC invocation followed by option 3 from the primary options menu. Selecting an option displays the relevant utility Entry panel with the primary data set name populated with the corresponding name on the ISPF 3.4 list.

```
   Process   Options   Help
  ─────────────────────────────────────────────────────────────────────
  File Manager                    Utility Functions

  1   Create        Create data
  2   Print         Print data
  3   Copy          Copy data
  4   Dslist        Catalog services
  5   Find/Change   Search for and change data
  6   View Load     View Load module
  7   Compare Load  Compare Load module
  8   Compare       Compare data
  9   Copybook      View and Print

  Command ===> _____
    F1=Help     F2=Split     F3=Exit      F4=CRetriev  F7=Backward  F8=Forward
    F9=Swap     F10=Actions  F12=Cancel
```

Figure 2. Utility Functions Menu when invoked from FMNR EXEC from ISPF 3.4 data set list Options menu

1 Create
> Displays the Data Create Utility panel.

2 Print
> Displays the Print Utility panel.

3 Copy
> Displays the Copy Utility panel.

4 Dslist
> Displays the Catalog Services panel.

5 Find/Change

Displays the Find/Change Utility panel.

6 View Load

Displays the View load module Utility panel.

7 Compare load

Displays the Compare Load Module Utility panel.

8 Compare

Displays the Compare Utility panel.

9 Copybook

Displays the Copybook View and Print panel.

PI57222

Release Date: **23 Rebruary 2016**

Initial problem description

In the File Manager for z/OS User's Guide and Reference SC19-4119-03, the documentation for the HEX=YES/NO and HEXND=YES parameters within the AUD (Print audit trail report) function is not precise. These parameters only effect whether hexidecimal characters are displayed below the formatted fields (FORMAT=YES).

Outline of solution

Update document as outlined below.

Documentation impact

This APAR requires changes to:
- User's Guide and Reference (SC19-4119-03)

Changes to the User's Guide and Reference

Chapter 17. "Functions"

In the section "AUD (Print audit trail report)", *replace* the word "standard" with the word "formatted" in the descriptions of the HEX=YES and HEXNO=YES options (page 880). These descriptions should now read:

HEX=YES

Produces an UPDOWN hexadecimal display below the formatted field display when FORMAT=YES. Otherwise no effect.

HEXND=YES

Produces an UPDOWN hexadecimal display below the formatted field display when FORMAT=YES, only for fields that contain non-displayable characters. Otherwise (FORMAT=NO) no effect.

PI57222

UI34798, UI34799, UI34800, UI34801, UI34802, UI34803, UI34804, UI34805, UI34806

Release Date: **10 February 2016**

This set of PTFs contains these APAR fixes:
- PI45961

PI45961

Initial problem description
There is a security vulnerability when File Manager batch jobs write audit records to SMF.

Outline of solution
The method of writing audit records has been reworked, to remove the security vulnerability. At the same time, the documentation has been rewritten, to clarify the different methods of writing audit records.

Documentation impact
This APAR requires changes to:
- Customization Guide (SC19-4118-02)

Changes to the Customization Guide

All the changes required to SC19-4118-02 have been integrated directly into the new edition of this document, SC19-4118-03.

PI45961

UI31775

Release Date: **7 October 2015**

This set of PTFs contains these APAR fixes:
- PI39676

PI39676

Initial problem description
- File Manager support required for Enterprise COBOL Suite for z/OS V1.1 5697-CDT.

Outline of solution
- File Manager has been updated as follows:
  1. File Manager checks (via registration status check) for the presence of Enterprise COBOL Suite 5697-CDT. If present, it is registered if it is specified in IFAPRDxx as STATE(ENABLED). File Manager processing terminates if specified as STATE(DISABLED).
  2. Sample FMNWIFAC is provided as sample entry for IFAPRDxx.
  3. For non 5697-CDT users, the sample may be used with STATE(NOTDEFINED) to prevent inadvertent registration.

Documentation impact
This APAR requires changes to:
- File Manager for z/OS V13R0 Customization Guide (SC1-4118-01)

Changes to the "Customization Guide"

[These changes integrated into SC19-4118-03.]

In the section "Enable/Register File Manager" on page 9, *replace* the first paragraph ("There are two Solution Packs containing File Manager, 5655-DMS and 5655-PDS.") with this text:

There are three 'bundles' containing File Manager: 5697-CDT, 5655-DMS, and 5655-PDS.

Add this text immediately after the previous paragraph:

If you purchased File Manager as part of product code 5697-CDT IBM Enterprise COBOL Suite for z/OS, include an entry in the IFAPRDxx parmlib member as follows:

```
PRODUCT OWNER('IBM CORP')
NAME('IBM COBOL SUITE')
ID(5697-CDT)
VERSION(*) RELEASE(*) MOD(*)
FEATURENAME('FILE-MANAGER')
STATE(ENABLED)
```

Sample registration parmlib entry FMNWIFAC, which contains the above statements, is provided in your `hlq.SFMNSAM1` data set.

Add the following to the end of the section:

PI39676

Please note, if your installation uses a generic IFAPRDxx entry like this:

```
PRODUCT OWNER(*)
        NAME(*)
        FEATURENAME(*)
        VERSION(*)
        RELEASE(*)
        MOD(*)
        ID(*)
        STATE(ENABLED)
```

it is suggested that the entries provided for File Manager above are added using the STATE(NOTDEFINED). This prevents products being inadvertently registered.

UI30583, UI30584, UI30585, UI30586, UI30587, UI30588, UI30589, UI30590

Release Date: **31 August 2015**

This set of PTFs contains these APAR fixes:
• PI40779
• PI44017

PI40779

Initial problem description

1. A loop occurs when 'SaveAs Records' is selected from the FM eclipse client and the data is saved to an MQ Queue.

2. When viewing an MQ Queue MsgFMNBC399 'MQ not applicable' is issued after the SAVEAS command is entered in z/OS.

3. TS queue names with non-displayable data cannot be processed from the eclipse client.

4. The queue name and SSID fields on the Websphere MQ editor and view entry panels are not persistent.

Outline of solution

• Apply the PTF.

Documentation impact

This APAR requires changes to:
• File Manager for z/OS V13R0 User's Guide and Reference (SC19-4119-02)

Changes to the "User's Guide and Reference"

[These changes integrated into SC19-4119-03.]

A parameter has been added to these primary commands:
• APPEND and APPENDX (page 749)
• Copy (page 764)
• CREATE, CREATEX (page 766)
• REPLACE, REPLACEX (page 814)
• SAVEAS, SAVEASX (data) (page 822)

To the syntax diagram for each command, *add* this option:

```
►►─────────────────────────────────────────────►◄
      └─MQ:manager:queuename─┘
```

In the parameter descriptions *add* this description:

MQ:_manager_**:**_queuename_

You can specify a MQ queue, where:

manager

The MQ manager to be used. If you specify a generic name, File Manager displays a list of matching managers to select from.

queuename

The queue to be used. If you specify a generic name, File Manager displays a list of matching queues to select from.

PI44017

Initial problem description

There are two issues:

1. Comparing records of different lengths always results in a difference. There is no way to ignore trailing padding characters like blanks.

2. Comparing varying length fields can corrupt the compare report. A loop occurs when "SaveAs Records" is selected from the FM eclipse client and the data is saved to an MQ Queue.

Outline of solution

• Apply the PTF.

Documentation impact

This APAR requires changes to:

• File Manager for z/OS V13R0 User's Guide and Reference (SC19-4119-02)

Changes to the "User's Guide and Reference"

[These changes integrated into SC19-4119-03.]

In the "Compare Utility: Options panel" section, under "Compare Type" (on page 482), *change* the first Record paragraph:

1. Record

When the record comparison option is selected, pairs of records (determined by the record selection criteria and synchronization method) are compared byte by byte. For the records to match, the corresponding bytes in each record must be the same and either the record lengths are equal or the pad option has been specified and the trailing bytes equal the pad character.

UI26855, UI26856, UI26857, UI26858, UI26859, UI26860, UI26861, UI26862, UI26863, UI26864

Release Date: **22 April 2015**

This set of PTFs contains these APAR fixes:
- PI22448

PI22448

Initial problem description

File Manager does not support fields that cotain date or time (or date and time) values.

Outline of solution

File Manager has been enhanced to support these fields.

Documentation impact

This APAR requires changes to:
- File Manager for z/OS V13R0 User's Guide and Reference (SC19-4119-01)
- File Manager for z/OS V13R0 User's Guide and Reference for IMS Data (SC19-4121-01)

Changes to the "User's Guide and Reference"

All bar one of the changes are incorporated in the new edition of this document, SC19-4119-02.

Add this new section (and subsections) immediately before (and at the same level as) "Working with File Manager and shared files", on page 89:

Using Date/Time fields

A Date/Time field holds a date, or a time, or both (the date followed by time). Such fields are called "date and time" fields, even though a particular instance might contain only the date or only the time.

Defining a date and time field

Define a date and time field by using the DT prefix command during template edit. See "Defining and changing date and time attributes" on page 167, and "Date/Time Attributes panel" on page 522.

Formatting and updating date and time fields

Use the editor to display and change date and time fields as determined by the output format. You can also print the fields according to the output format.

When you insert new lines, the date and time fields initialize to the current date and time value.

Creating data for date and time fields

You can use the base date value as well as the day, month and year adjustment fields to populate date and time fields during a data create function. See "Setting the Data Create Attributes in your template" on page 250 and "Date/Time Attributes panel" on page 522.

Incrementing date and time fields

Use the copy function with the same input and output template that has date and time fields defined with a day, month and year (or day, or month, or year) adjustment values to increment or decrement the corresponding value on the output data set. See "Date/Time Attributes panel" on page 522.

Scrambling date and time fields

Use the copy function with the same input and output template that has date and time fields defined with scrambling start and end values specified to scramble date and time values to a random or repeatable value within a given range for that field. See "Date/Time Attributes panel" on page 522.

Changes to the "User's Guide and Reference for IMS Data"

The changes are incorporated in the new edition of this document, SC19-4121-02.

UI25803, UI25804, UI25805, UI25806, UI25807, UI25808, UI25809

Release Date: **13 March 2015**

This set of PTFs contains these APAR fixes:
• PI33608

PI33608

Initial problem description

1. 1. Various problems with the BATSQL function, including:
   a. SQLCODE-508, SQLCODE-518, SQLCODE-504 may be issued in some circumstances when deleting rows using rowset processing.
   b. The row count for rows that gave SQL errors may be incorrect when using rowset processing.
   c. Message FMNDC036 is issued multiple times when using rowset processing.
   d. The BATSQL function ends with RC=8 when the user-specified maximum error count is exceeded.
   e. SQLCODE+535 issued as part of a delete terminates the function with RC=16.
   f. SQLCODE-104 when a column name in the insert clause is not a column of the target table.
   g. SQLCODE-206 when a column name in a set or where clause is not a column of the target/source table.
   h. User abend 0999 module FMN2ABUF offset x'21A' or x'216' attempting to update a table containing LOB columns.
   i. SQLCODE-510 attempting an update with no where clause.
   j. A BATSQL function ends with RC=0 when message FMNDC048 is issued.
   k. A BATSQL function with an invalid SET clause attempts update processing.

2. Using the FM/DB2 print function with a DB2 object that has nullable LOB columns, the data printed to the right of the nullable LOB column is mis-aligned.

3. Using FM/DB2 component Korean feature only, ISPF panel errors after issuing the GEN command for tables, indexes and schemas.

4. SQLCODE-010 in FM/DB2 DB2 Utilities option, unload function, the DB2 object name being processed contains characters that require that the name be enclosed in double quotes.

5. DB2 Abend reason codes reported by FM/DB2 are truncated.

6. The default region size for SQL reverse engineering (GEN command) batch jobs is 8MB.

Outline of solution

1-5. File Manager DB2 component has been updated to correct the problems.

6. The region size is increased to 64MB.

> ### Documentation impact
> This APAR requires changes to:
> * File Manager for z/OS V13R0 User's Guide and Reference for DB2 Data (SC19-4120-01)

Changes to the "User's Guide and Reference for DB2 Data"

Chapter 17. "FM/DB2 functions"

In the section for the BATSQL function *change* the description for the MAXERRORS keyword (page 790) to the following:

The maximum number of errors that can occur before a DB2 rollback is issued and function processing is terminated. When a row is processed, any negative SQLCODE is considered to be an error, and the error count is incremented by 1. When a rowset is processed, any negative SQLCODE is considered to be an error, and the error count is incremented by the number of rows in the current rowset. Valid values are 0 - 2147483647.

Appendix. "FM/DB2 messages"

Change messages FMNDC036-FMNDC038 to:

FMNDC036   Batch DELETE canceled because of excessive errors (*errcnt*,*maxerr*).

Explanation: This informational message is issued during TYPE=DELETE BATSQL processing. FM/DB2 stopped deleting rows because the user-specified error limit *maxerr* (MAXERRORS keyword) was reached. The actual number of errors was *errcnt*. A summary of the errors that are encountered follows (messages FMNDC039 and FMNDC060).

Note that when an error is encountered processing a rowset, the error count is incremented by the number of rows in the rowset. This can result in the actual number of errors reported exceeding the value specified for MAXERRORS.

User response: Examine the error summary and respond.

FMNDC037   Batch INSERT canceled because of excessive errors (*errcnt*,*maxerr*).

Explanation: This informational message is issued during TYPE=INSERT BATSQL processing. FM/DB2 stopped inserting rows because the user-specified error limit *maxerr* (MAXERRORS keyword) was reached. The actual number of errors was *errcnt*. A summary of the errors that are encountered follows (messages FMNDC039 and FMNDC060).

User response: Examine the error summary and respond.

FMNDC038   Batch UPDATE canceled because of excessive errors (*errcnt*,*maxerr*).

Explanation: This informational message is issued during TYPE=UPDATE BATSQL processing. FM/DB2

stopped updating rows because the user-specified error limit *maxerr* (MAXERRORS keyword) was reached. The actual number of errors was *errcnt*. A summary of the errors that are encountered follows (messages FMNDC039 and FMNDC060).

Note that when an error is encountered processing a rowset, the error count is incremented by the number of rows in the rowset. This can result in the actual number of errors reported exceeding the value specified for MAXERRORS.

User response: Examine the error summary and respond.

Add these new messages:

FMNDC054   Required SELECT clause is missing or incomplete.

Explanation: This is an error message issued during processing of the BATSQL function. The specified SELECT clause has either not been specified, or is incomplete.

User response: Correct the coding of the SELECT clause. The SELECT clause should start with 'SELECT' and identify a result table. The shortest valid SELECT clause is 'SELECT * FROM <name>', where <name> is an unqualified DB2 object name. Retry the BATSQL function.

FMNDC055   SELECT clause must begin with 'SELECT'.

Explanation: This is an error message issued during processing of the BATSQL function. The specified SELECT clause does not start with 'SELECT'.

User response: Correct the coding of the SELECT

clause. Retry the BATSQL function.

FMNDC056   SELECT clause is invalid, SQLCODE=SQLCODE.

Explanation: This is an error message issued during processing of the BATSQL function. The specified SELECT clause is invalid, DB2 returned SQLCODE=SQLCODE in response to an attempt to prepare the statement.

User response: Look up the SQLCODE in the DB2 Codes manual for the appropriate version of DB2 and use the information provided to correct the SELECT statement. Retry the BATSQL function.

FMNDC057   Column COLNAME is not a column of OBJNAME.

Explanation: This is an error message issued during processing of the BATSQL function. The specified column name COLNAME does not exist in DB2 object OBJNAME.

User response: Determine the reason why the specified column name is not a column of the named DB2 object. A non-exhaustive list of causes is:
1. Spelling errors
2. Upper/lower case issues
3. References to an incorrect DB2 object name
4. Referring to a DB2 object name on a different DB2 sub-system to the intended system.

Correct the input statements and retry the BATSQL function.

FMNDC058   The requested function is not supported: XML columns.

Explanation: This is an error message issued during processing of an INSERT BATSQL function. XML columns were detected in either the target DB2 object, or in the source SELECT statement. The BATSQL function with TYPE=INSERT does not support XML columns.

The function cannot be performed.

User response: None, the requested operation cannot be performed.

FMNDC059   Switching to single-row processing because of multi-row errors.

Explanation: This is an error message issued during processing of a DELETE or UPDATE BATSQL function. Rowset processing is active, however an SQL error was encountered when attempting a delete/update of a rowset. All rows in the current rowset are unchanged, FM/DB2 marks all rows in the rowset as 'in error'. FM/DB2 moves to the next rowset and attempts to process each row in that rowset individually.

User response: Examine the output object to determine why an SQL error occured. Take appropriate action.

FMNDC060   1 rowset gave SQLCODE *sqlcode*.

Explanation: This message is issued during processing of a DELETE or UPDATE BATSQL function when rowset processing is active. An SQL error occured when attempting a rowset delete or update, the failing SQLCODE is *sqlcode*. All rows in the current rowset are unchanged, FM/DB2 marks all rows in the rowset as 'in error'.

User response: Examine the output object to determine why an SQL error occured. Take appropriate action.

FMNDC062   Invalid SET clause.

Explanation: This message is issued during processing of an UPDATE BATSQL function. The SET clause is invalid. This message is specific to the following form of a SET clause:

```
SET (Col1 , ...) = (Val1, ...)
```

See the SQL Reference for the appropriate version of DB2 for a full description of the SET clause syntax.

This error is usually the result of:
• A missing parenthesis around either the column, or value list.
• A missing '=' between the column and value lists.
• The column list has no columns.
• The value list has no values.

User response: Examine the SET clause, correct the syntax error(s), retry the function.

PI33608

UI25242, UI25243, UI25244, UI25245, UI25246, UI25247, UI25248, UI25249

Release Date: **19 February 2015**

This set of PTFs contains these APAR fixes:
- PI19147
- PI19148

PI19147

Initial problem description

1. The File Manager DB2 editor does not have an inactivity time-out feature.

2. In the FM/DB2 editor, abend S0C4-10 module FMNEDIPP offset x'2AF4' after a delete command.

3. In the FM/DB2 editor, zoned timestamp fields are not displayed correctly.

Outline of solution

1. A new FMN2SSDM macro option EDITOR_TIMEOUT is provided, which can be specified for those DB2 systems where an editor inactivity time-out is required.

2. File Manager has been updated to correct the problem (no document change).

3. File Manager has been updated to correct the problem (no document change).

Documentation impact
This APAR requires changes to:
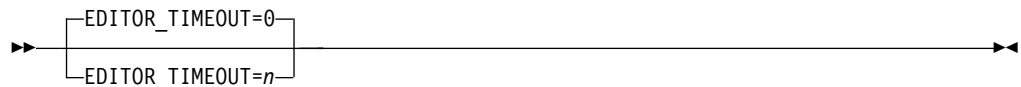- File Manager for z/OS V13R0 Customization Guide (SC19-4118-01)

Changes to the "Customization Guide"

[These changes integrated into SC19-4118-02.]

Appendix B: "FM/DB2 Options"
Add this option to the FMN2SSDM section.

EDITOR_TIMEOUT:

```
           ┌─EDITOR_TIMEOUT=0─┐
►►─────────┼──────────────────┼──────────────────────►◄
           └─EDITOR_TIMEOUT=n─┘
```

EDITOR_TIMEOUT
Specifies whether FM/DB2 editor sessions are subject to an inactivity time-out, and the length of time that must elapse before the inactivity time-out is triggered.

Specify 0 to disable the inactivity time-out. This is the default.

Specify a non-zero value to enable the inactivity timer. **n** is integer, **n** > 0. The value specified is interpreted as HHMMSS. Here are some examples:

```
n=30       specifies an inactivity time-out interval of 30 seconds
n=100      specifies an inactivity time-out interval of 1 minute
n=10000    specifies an inactivity time-out interval of 1 hour
n=718191   specifies an inactivity time-out interval
                of 71 hours, 81 minutes and 91 seconds
```

The inactivity time-out applies to the locally connected DB2 system. For example, suppose the FMN2POPT has these entries:

```
FMN2SSDM    SSID=DSNA,
            EDITOR_TIMEOUT=0
FMN2SSDM    SSID=DSNB,
            EDITOR_TIMEOUT=45
```

An FM/DB2 user connected locally to DSNA is not subject to the editor inactivity time-out. If the FM/DB2 user specifies a location value to access a DB2 object at DSNB, the resulting editor session IS NOT subject to the inactivity time-out.

An FM/DB2 used connected locally to DSNB is subject to the editor inactivity time-out. If the FM/DB2 user specifies a location value to access a DB2 object at DSNA, the resulting editor session **is** subject to the inactivity time-out.

PI19148

Initial problem description
File Manager DB2 component does not have a set of options that minimize the potential for contention in production environments.

Outline of solution
Enhancement APAR. File Manager DB2 component has been updated to provide a new FMN2SSDM parameter (PROD_EDIT).

Documentation impact
This APAR requires changes to:
- File Manager for z/OS V13R0 Customization Guide (SC19-4118-01)

Changes to the "Customization Guide"

[These changes integrated into SC19-4118-02.]

Chapter 15 "Customizing FM/DB2"

Replace the existing section "Customizing FM/DB2 for use in production environments" (page 133) with the following:

Customizing FM/DB2 for use in production environments: If you intend to use File Manager DB2 to access DB2 systems that are used to support a high throughput on-line transaction processing environment, you should consider the potential for adverse performance/concurrency problems arising from the use of FM/DB2, particularly the FM/DB2 editor. This section outlines concurrency and performance issues that might arise:

- The use of "large" mode in the FM/DB2 editor

  The File Manager DB2 editor can operate in two modes: "normal" and "large". The mode of operation is determined by the value entered in the row count field for those FM/DB2 functions that use the FM/DB2 editor to display data. The

characteristics of the two editor modes are documented in the File Manager User's Guide and Reference for DB2 Data.

The use of "large" editor mode might have negative DB2 performance implications. When the FM/DB2 editor operates in "large" mode, it uses a DB2 scrollable cursor for access to DB2 data. This minimizes the memory usage in the FM/DB2 user's TSO address space, but might require DB2 to build a temporary copy of the entire result table in a DB2 temporary database. For large tables, this can lead to SQLCODE-904 (unavailable resource) on table spaces defined within the DB2 temporary database. For these reasons, providing access to the FM/DB2 editor in production DB2 environments, where there are large DB2 tables, should be carefully considered.

The product installer can disable the use of "large" editor mode, by DB2 subsystem. This is achieved by setting the FMN2SSDM macro parameters:
– EDIT_MAX_ROWS to a non-zero value. See "EDIT_MAX_ROWS" on page 361.
– PROD_EDIT to YES. See "PROD_EDIT" on page [see new description below]. Note that setting PROD_EDIT=YES over-rides EDIT_MAX_ROWS=0, if specified, replacing it with EDIT_MAX_ROWS=1000. The FMN2SSDM macro is discussed further in "Identifying all the DB2 systems that FM/DB2 will access and defining these in the FMN2POPT module (required)" on page 121.

• The use of table locking options

The File Manager DB2 editor has an option that allows a table to be locked for the duration of the editor session. The table can be locked in "SHARED" or "EXCLUSIVE" mode. See the description of the 'LOCK TABLE' statement in the SQL Reference manual for the appropriate version of DB2 for a description of these options.

The use of either the "SHARED" or "EXCLUSIVE" options is inconsistent with the requirements for a high throughput on-line transaction processing environment. You can disable the editor table locking option, by DB2 subsystem. This is achieved by setting the FMN2SSDM macro parameters:
– TABLE_LOCKING to NO. See "TABLE_LOCKING" on page 369.
– PROD_EDIT to YES. See "PROD_EDIT" on page [see new description below]. Note that setting PROD_EDIT=YES will over-ride TABLE_LOCKING=YES, if specified, replacing it with TABLE_LOCKING=NO. The FMN2SSDM macro is discussed further in "Identifying all the DB2 systems that FM/DB2 will access and defining these in the FMN2POPT module (required)" on page 121.

• User specified SELECT statements and FM/DB2 editor choice

Various File Manager DB2 functions allow users to create and execute SELECT statements. The FM/DB2 editor is used to display the result table for these statements. There is a system option controlling whether the result table is displayed in browse, view or edit modes.

FM/DB2 functions that process SELECT statements include the following:
– Prototype SELECT statements (basic)
– Prototype SELECT statements (advanced)
– Enter, execute and explain SQL statements
– Edit and execute SQL statements from a data set

You can disable the use of the FM/DB2 editor, in edit mode, when processing the result table for user specified SELECT statements, by DB2 system. This is achieved by setting the FMN2SSDM macro parameter USER_SELECT_EDIT to NO. See "USER_SELECT_EDIT" on page 377. The FMN2SSDM macro is discussed further in "Identifying all the DB2 systems that FM/DB2 will access and defining these in the FMN2POPT module (required)" on page 121.

• The use of Cursor concurrency options

The File Manager DB2 editor has an option that allows a "WITH" clause to be added to the declaration for the cursor used to access DB2 data. See the description for "isolation-clause" in the SQL Reference manual for the appropriate version of DB2.

The default for this option is to not add any WITH clause, which results in DB2 taking locks based on system options, and options specified for the table space(s) that contain the DB2 object.

The following editor options are also relevant:
– Read-only access
– Commit after data fetch

The "Uncommitted read" concurrency option can be specified when you need to avoid any locks being taken by FM/DB2 users when they read data prior to display in an editor session. You can force the use of "uncommitted read", by DB2 system. This is achieved by setting the FMN2SSDM macro parameter FORCE_WITH_UR to Y. See "FORCE_WITH_UR" on page 369. The FMN2SSDM macro is discussed further in "Identifying all the DB2 systems that FM/DB2 will access and defining these in the FMN2POPT module (required)" on page 121.

• The PROD_EDIT parameter

The FMN2SSDM macro parameter PROD_EDIT has multiple effects on the behavior of the File Manager DB2 editor, as described below:
– An inactivity timer applies to all FM/DB2 editor sessions. If EDITOR_TIMEOUT=0 is specified in the same FMN2SSDM macro, this value is replaced with EDITOR_TIMEOUT= 60.
– Table locking is disabled. If TABLE_LOCKING=YES is specified in the same FMN2SSDM macro, this value is replaced with TABLE_LOCKING=NO. When a FM/DB2 user displays the Editor Locking option, the value is set to '1' (None) and cannot be altered. This prevents the user changing the option to either SHARED or EXCLUSIVE.
– "Large" edit mode is disabled. If EDIT_MAX_ROWS=0 is specified in the same FMN2SSDM macro, this value is replaced with EDIT_MAX_ROWS=1000. When a FM/DB2 user enters 0 in the row count field on an editor-related function entry panel, the value is ignored and replaced with the value specified for EDIT_MAX_ROWS. This prevents the user accessing the FM/DB2 editor in "large" mode.
– The "Commit after data fetch" option is fixed and is selected.
– The "Commit when save issued" option is fixed and is selected.
– The "Commit when no save errors" option is fixed and is not selected.

The "Commit after data fetch" option ensures that any user of the FM/DB2 editor has no locks against DB2 when the data in the editor session is initially displayed, and the user cannot change the option. The other two options ensure that a DB2 commit is always issued when a user attempts to save changes made in the current editor session.

The commit is always issued, whether there are save errors or not. When considered in combination, the PROD_EDIT behavior reduces locking against the DB2 object being edited to a minimum. The only time locks are held is when:
– The data is initially accessed, prior to the display of the data.
– Whenever changes made in the editor session are presented to DB2 for validation.

• Restricting the use of the FM/DB2 editor and educating users

Setting the FMN2SSDM parameters as described in above will reduce the potential for unwanted locking/resource constraints arising from the use of the FM/DB2 editor, it will not eliminate it.

The File Manager DB2 editor is a powerful tool. You should consider carefully which users, if any, have access to the File Manager DB2 editor in production DB2 environments.

You should consider educating any users of the File Manager DB2 editor in production environments. The main issues to be considered are:

- Minimizing the number of rows of data retrieved for any editor session. The fewer rows that are retrieved, the smaller the number of locks that might be taken against production data bases.
- Minimizing the duration of any editor sessions against production data. The DB2 "unit of work" concept is relevant here, it is recommended that any users of the FM/DB2 editor against production data are familiar with the concept, and potential problems that might arise when the elapsed time for a unit of work becomes long.

Here is an example that demonstrates the potential problem. The user starts an FM/DB2 editor session of a production table. They have the editor option "uncommitted read" on and use row selection criteria to limit the number of rows in the editor session to 1000. The user issues a change command, that affects 800 rows. The user issues the SAVE command to validate the changes made. The editor option "Commit when save issued" is turned off. The changes are successful, all of the 800 rows that were changed are updated in DB2. The user is called away unexpectedly, or goes to lunch/goes home, leaving the editor session active.

In this scenario the File Manager DB2 editor session starts with no locks against the production database. When the SAVE command is issued, the 800 rows that are changed are marked in DB2 with update locks. The editor option "Commit when save issued" option is off, so there is no COMMIT issued and the DB2 unit of work remains active. The DB2 locks against the 800 rows remain active until the DB2 unit of work ends, which will occur when either the user cancels the editor session, the user ends the editor session, or the user's TSO session is cancelled. This might be hours, even days. During that time other users of the production database may not be able to access those rows.

The issues outlined in this scenario can be avoided if PROD_EDIT=YES is specified.

Users of the File Manager DB2 editor in production environments should be educated to minimize the elapsed time for any editor sessions that make changes to production data. This minimizes the duration of any locks taken against production data.

Appendix B: "FM/DB2 Options"
Add this options to the FMN2SSDM section.

PROD_EDIT:

```
        ┌─PROD_EDIT=N─┐
►►──────┤             ├────────────────────────────────────────────►◄
        └─PROD_EDIT=Y─┘
```

PROD_EDIT

   Specifies whether various restrictions should apply to any FM/DB2 editor sessions. These restrictions are intended to reduce the potential for locking

and resource contention when accessing DB2 data. Collectively these restrictions are referred to as the "PROD_EDIT" (Production Edit) behavior.

Specify PROD_EDIT=N to disable the PROD_EDIT restrictions. This is the default.

Specify PROD_EDIT=Y to enable the PROD_EDIT restrictions. Specifying PROD_EDIT=Y has multiple effects, as described below:

- An inactivity time-out applies to every FM/DB2 editor session. If EDITOR_TIMEOUT=0 is also specified in the same FMN2SSDM macro invocation it is replaced with EDITOR_TIMEOUT=60. You can specify any value for EDIT_TIMEOUT except 0, and that value will not be over-ridden.
- "Large" editor mode is disabled for all users. If EDIT_MAX_ROWS=0 is also specified in the same FMN2SSDM macro invocation it is replaced with EDIT_MAX_ROWS=1000. You can specify any value for EDIT_MAX_ROWS except 0, and that value will not be over-ridden.
- Table locking is disabled for all users. If TABLE_LOCKING=YES is also specified in the same FMN2SSDM macro invocation it is relaced with TABLE_LOCKING=NO.
- The editor option "Commit after data fetch" is fixed and is selected for all FM/DB2 users.
- The editor option "Commit when save issued" is fixed and is selected for all FM/DB2 users.
- The editor option "Commit when no save errors" option is fixed and is not selected for all FM/DB2 users.

The PROD_EDIT behavior applies to the locally connected DB2 system.

For example, Suppose the FMN2POPT has these entries:

```
FMN2SSDM    SSID=DSNA,
            PROD_EDIT=N
FMN2SSDM    SSID=DSNB,
            PROD_EDIT=Y
```

An FM/DB2 user connected locally to DSNA is not subject to the PROD_EDIT behavior. If the FM/DB2 user specifies a location value to access a DB2 object at DSNB, the resulting editor session **is not** subject to the PROD_EDIT behavior.

An FM/DB2 user connected locally to DSNB is subject to the PROD_EDIT behavior. If the FM/DB2 user specifies a location value to access a DB2 object at DSNA, the resulting editor session IS subject to the PROD_EDIT behavior.

Part 2. General documentation changes

This section describes enhancements and updates in the documentation for File Manager for z/OS Version 13 Release 1. These changes are not associated with individual APAR or PTF numbers, as they do not require the application of any code updates.

The changes are grouped by manual and listed within each section in reverse date order. That is, the most recent documentation change appears at the beginning of each manual section.

Customization Guide (SC19-4118-03)

There are no general documentation changes.

User's Guide and Reference (SC19-4119-03)

There are no general documentation changes.

User's Guide and Reference for DB2 Data (SC19-4120-03)

There are no general documentation changes.

User's Guide and Reference for IMS Data (SC19-4121-01)

There are no general documentation changes.

User's Guide and Reference for CICS (SC19-4122-00)

There are no general documentation changes.

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