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FUJITSU

Fujitsu Technology Solutions

FMS (BS2000/OSD)
Version 2.4B
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Release Notice

Release Notice FMS V2.4B

1 General

FMS Version 2.4B40

BS2000

FMS - File Management System

FMS is a system for condensed BS2000 file management in
FMS libraries. FMS can process SAM and ISAM files as
well as object modules from the EAM memory.

This release notice is a summary of the major extensions,
dependencies and operating information for FMS V2.4B40 under
the BS2000 operating system.

The release level is that of November 1997.

The release notice is delivered in the form of a file with
uppercase and lowercase letters.
Any subsequent changes will be incorporated in this file and
delivered separately. The file can be printed out using the
following command:

```
/PRINT-FILE SYSFGM.FMS.024.D,CONTROL-CHARACTERS=EBCDIC
                                    (German) or
/PRINT-FILE SYSFGM.FMS.024.E,CONTROL-CHARACTERS=EBCDIC
                                    (English)
```

If one or more predecessor versions are skipped when the
present product version is used, all notes from the release
notices for these predecessor versions must also be taken
into account.

1.1 Ordering

FMS V2.4B40 can be ordered from your local distributors.

1.2 Delivery

The FMS V2.4B40 files are delivered via SOLIS.

The relevant file and volume characteristics are listed in
the SOLIS delivery note.

The appendix to this release notice contains a directory
of the files delivered and of the library contents.

1.3 Documentation

Delivery of FMS V2.4B40 includes the following manuals:

Title	Order number	Level
FMS (BS2000) Version 2.34 File Management System Benutzerhandbuch	U918-J-Z87-3	01.85
FMS (BS2000) Version 2.34 File Management System User's Guide	U918-J-Z87-2-7600	01.85

2 Technical information

2.1 Resource requirements

FMS V2.4B40 can be run on systems having a main memory
capacity of at least 2 MB.

Approximately 363 PAM pages are required on disk.

2.2 Software configuration

Operating system	BS2000	Version 9.5 and higher
Operating mode	Interactive, batch, subprogram	
Software:	EDT	Version 16.3 and higher
	LMS	Version 2.0 and higher
	TSOSLNK	Version 21.0 and higher
	TOM-TI	Version 3.0C and higher

2.3   Product installation

Standard installation takes place via SOLIS.

FMS V2.4B40 is installed by means of the FMS.INSTALL.PRC
installation procedure included in delivery. You must
start it under the $TSOS identifier or the FMS installation
identifier.

Note:

The FMS V2.4B40 library format is incompatible with the
previous version as the data structure had to be modified
due to PAMKEY elimination. FMS V2.4B40 can only process the
new type of libraries.

Old libraries must first be converted in order to be
processed with FMS V2.4. The FMS.PRC.CONVER.V24
procedure is provided for converting the FMS libraries
 (see section 3.2).

Linking the FMS phase

The FMS phase must be relinked. For this purpose, the FMSLIB
and FMS.LNKLIB libraries are required, as well as the
FMS.INSTALL.PRC installation procedure.

The installation procedure assigns the catalog entries

ACCESS=READ and SHARE=YES

to the FMS phase and the FMSLIB library.

If FMS is installed under an identifier other than TSOS,
the FMS.INSTALL.PRC installation procedure must be started
with the parameter REP=ON

The procedure prompts you for the identifier (enter with
or without $). The procedure generates REP statements which
are introduced into FMSLIB and FMS.LNKLIB with the LMSCONV
utility.

If FMS is linked to TOM-TI and TOM-TI is installed
under an identifier other than FMS, REP statements
are generated for the linkage editor so that the load
module library TOM.EDIT.OML can be found.

Note:

If the FMS.INSTALL.PRC installation procedure is
started with the parameter INSTALL=LINK, the FMS
phase is linked.

If the FMS.INSTALL.PRC installation procedure is
started with the parameter INSTALL=INSTALL, the FMS and
FMS.OLD phases are linked and the FMS.PRC.CONVER.V24
conversion procedure modified accordingly.

The FMS.OLD phase corresponds to FMS V2.3G and is required
for converting old libraries (see section 3.2).

Information about the XS-ability.
If you want to load FMS above the 16Mb boundary, you have to
change the installation procedure. The string LOADPT =
X'40000' must be changed into LOADPT=*XS.

The FMS.INSTALL.PRC installation procedure contains the
following parameters:

Parameter	Presetting	Meaning
&USERID	----	User ID, if not under TSOS
&REP	OFF	User ID for FMS=TSOS
&PRINT	ON	Print linkage editor list
&TOMTI	ON	Link TOM-TI
&FMSLNK	FMS.LNKLIB	Module library name
&EDTLIB	$EDTLIB	Module library name (EDT)
&LSTINST	FMS.INSTALL.LST	Name of installation and linkage editor list
&LSTLINK	FMS.LNK.LST	Linkage editor list name
&LNK	$TSOSLNK	Linkage editor name
&LMSCONV	$LMSCONV	Name of LMSCONV utility
&TOMTILNK	TOM.TI.LNKLIB	Module library name (TOM-TI)
&FMSLIB	FMSLIB	Module library name
&KEY	OFF	The key is not displayed (as previously) for ISAM files
&TOMTIUID	$TSOS	TOM-TI installation ID
&DELYN	OFF	When elements are deleted you are not asked to confirm this (as previously)
&INSTALL	INSTALL	Install and link FMS (or only link for $INSTALL= LINK)

In this version, FMS can be linked in 2 variants.

Variant	Parameter	Function
1. FMS + EDT	TOMTI=OFF	EDT V16
2. FMS + TOM-TI	TOMTI=ON (default)	TOM-TI

Note:

The system administrator can use the SHARE command to
declare the FMS module shareable. This module, which
has reentrant capability, is contained in the FMSLIB
module library.

If FMS is to be loaded as a subsystem, the FMS module must
be loaded in class 3/4 or 5/6 memory with DSSM. The
DSSM.SYS.FMS.CL5 file contains the corresponding
DSSM declarations.

2.4 Product use

FMS as a subprogram

User programs in which the FMSU module is linked from
earlier versions, must be relinked due to the modified
library structure.

2.5 Obsolete functions

FMS linkage to EDT in line mode (EDTV15=ON linkage
parameter) is no longer supported.

2.6 Incompatibilities

FMS libraries of the previous version cannot be processed
with FMS V2.4 and vice versa due to the modified library
format (see section 3.2).

FMS as a subprogram

If you try to process an "old" FMS library with the new
FMSU, FMS displays value 64 in the word-7 (error flag).

2.7 Restrictions

2.8 Procedure in the event of errors

In the event of errors, the following documents are required
for diagnostic purposes:

-   The FMS installation and linkage editor lists are
    stored in the FMS.INSTALL.LST and FMS.LNK.LST files,
    which can be printed out with

*   /PRINT-FILE FMS.INSTALL.LST,CONTROL-CHARACTERS=EBCDIC and
        /PRINT-FILE FMS.LNK.LST,CONTROL-CHARACTERS=EBCDIC

-   The FMS library.

3 Software extensions

Only the extensions and enhancements over the previous
version, FMS V2.3G, are described below.

No functional changes have been made with respect to
the previous version. At the user interface level, FMS
V2.4 is compatible with the previous version with no
restrictions.

3.1 XS-ability.

The whole program interface of FMS (FMSU, FMSQ, FMSVREAD
and FMSDELTA) have been enhanced, so that they can be
loaded below or above the 16-Mb boundary.

About the XS-ability of the program FMS itself, see
chapter 2.3.

3.2 Year2000 compliance.

The user interface of FMS has been completely adapted in
such a manner that all dates are put out with the year in
4 positions (the century will always be given). Despite
those modifications at the user interface, the FMS file
remain compatible. The window technique had been used to
enhanced the user interface.

This version of FMS contains 2 program interfaces.

1. The old program interface.

The old one (as described pages 4-10 and 4-11) can be used
without any modification in the calling program. All year
data are put out or put in only with 2 positions

2. The new program interface.

The new interface differs from the old one on the control
area. It contains a new word Word-0 before the Word-1
 (Library number). If this word Word-0 contains the string
C'2000', all year data are put out or put in with 4 positions
 (the century will always be given).

Layout of the new program interface.

Control area

Wort-0   character 2000
Wort-1   binary   library number   values 1-10
Wort-2   binary   member number   values 1-16
Wort-3   binary   op code
Wort-4   binary   special flag
Wort-5/Wort-6   binary   pointer1 and pointer2
Wort-7   binary   error flag

Data area
----

mem-spec   (22 Bytes)   member specification

byte 0 - 1 binary   file type: 1 SAM
                                    2 ISAM
                                    3 free format
      2 - 3 binary   key position for ISAM files
      4 - 5 binary   key length (standard 5/8)
      6 - 9 binary   page allocation of file (first alloc)
     10 - 19 character addition date in the form dd.mm.yyyy
     20   contents depending on OP codes 8 and 9:
              X'01'   member without version management
              X'03'   member with version management
              X'00'   unchecked member
     21   reserved

vers-id   (98 bytes) complete version identification

byte 0   version designation (,A-Z,0-9)
     1 - 15   ***VERSION***
    16 - 35 version number
    36   space
    37 - 46 date in the form dd.mm.yyyy
    47   space
    48 - 67 version information
    68 - 97 uncompressed version number
             (10 x 3 decimal, unpacked digits with leading
             zeros and without periods).

3.3 PAMKEY elimination

FMS V2.4 supports the NK-UPAM function (PAMKEY-less PAM files) offered by BS2000 V10, thus enabling optimal operation of FBA (Fixed-Block Architecture) disks for the first time.

FMS elimination of PAMKEY use causes a change in the data structure of the FMS libraries. The following changes have been made in V2.4:

1. Relocation of the PAMKEY area to the user data block

2. Extension of the block size from 2 to 4 KB

The range of FMS functions is not affected by these changes.

As of BS2000 V10, FMS libraries can also be created on NK disks with FMS V2.4.

The new internal FMS library format is independent of backup on K or NK disk.

3.4 Converting old libraries to the new format

A conversion procedure, FMS.PRC.CONVER.V24, is available as a result of the changes made to the library format.

Conversion must be performed in a system environment with PAMKEY (at least 1 hard disk with the old FMS libraries) as the old FMS format can only be processed in this type of environment.

FMS V2.4 must have been installed with the parameter INSTALL=INSTALL for conversion to take place.

Start conversion as follows:

/DO $userid.FMS.PRC.CONVER.V24

During execution, you are interactively prompted for the parameters:

&LIBFROM = Name of the library to be converted
&LIBTO   = Name of the library converted

The conversion procedure also allows reconversion (new library format --> old library format).

3.5 Changes with respect to the manual

Please note the following changes with respect to the
manual:

- The smallest memory unit per library element consists
  of 2 PAM pages.

- Library elements are stored in blocks of 2 PAM
  pages, starting at a page boundary.

- The FMS message
  WRONG DEVICE TYPE
  is replaced by
  WRONG VOLUME AND/OR DEVICE-TYPE.

- New message:

  FMS-LIBRARY OF OLD TYPE/MUST BE CONVERTED FIRST/REJECTED

  This message appears in dialog if you try to process
  an "old" FMS library with FMS V2.4.

  If FMS is used as a subprogram, FMSU displays value
  64 in the word-7 (error flag).

4 Appendix 1: delivery files

PAM pages	File name	Meaning
12	SYSFGM.FMS.024.D	Release notice (German)
12	SYSFGM.FMS.024.E	Release notice (English)
3	DSSM.SYS.FMS.CL5	DSSM declarations
153	FMS.LNKLIB	Module library containing the modules to be linked
75	FMS.LNKLIB.OLD	Module library containing the V2.3G modules to be linked
39	FMSLIB	Module library containing the modules to be reloaded
21	FMSLIB.OLD	Module library containing the V2.3G modules to be reloaded
15	FMS.INSTALL.PRC	Installation procedure
9	FMS.INSTALL.PRC.OLD	Installation procedure for V2.3G
45	FMS.PRC.CONVER.V24	Conversion procedure

5 Appendix 2: Directory of library contents

1. Module library FMS.LNKLIB

```
TYP NAME       DATE         NAME      DATE
--- -------    ----------   --------  ----------
 (R) EDTPA     1997-10-20   EDTPTAB   1989-12-12
 (R) EDTSP     1997-11-14   EDTUP     1997-10-20
 (R) EDX       1991-04-19   FMSDELTA  1997-11-20
 (R) FMSDIA    1997-11-05   FMSMSG    1997-11-20
 (R) FMSPRT    1997-11-05   FMSPRV    1996-11-15
 (R) FMSQ      1997-11-20   FMSSYN    1995-11-17
 (R) FMSU      1997-11-21   FMSVREAD  1997-11-20
 (R) FORMBI    1996-05-06   TIDUMMY   1997-10-20
 (R) TOMFMOD   1997-11-21
```

2. Module library FMS.LNKLIB.OLD

TYP	NAME	DATE	NAME	DATE
(R)	EDTPA	1989-12-13	EDTPTAB	1989-12-12
(R)	EDTSP	1989-12-12	EDTUP	1989-12-14
(R)	EDX	1989-12-14	FMSDELTA	1988-09-07
(R)	FMSDIA	1988-09-05	FMSMSG	1988-07-26
(R)	FMSPRT	1982-05-04	FMSPRV	1988-08-01
(R)	FMSQ	1984-01-30	FMSSYN	1985-09-06
(R)	FMSU	1992-06-12	FMSVREAD	1984-05-29
(R)	TIDUMMY	1986-11-04	TOMFMOD	1982-05-04

16 (R)-ELEMENT(S) IN THIS TABLE CONTENTS

3. Module library FMSLIB

TYP	NAME	DATE	NAME	DATE
(R)	FMS	1997-11-20	FMSU	1997-11-21

2 (R)-ELEMENT(S) IN THIS TABLE CONTENTS

4. Module library FMSLIB.OLD

TYP	NAME	DATE	NAME	DATE
(R)	FMS	1988-09-05	FMSU	1992-06-12

2 (R)-ELEMENT(S) IN THIS TABLE CONTENTS