WebSphere. software

IBM File Manager for z/OS, V13.1

Figure 1: File Manager environment

Through its comprehensive, user-friendly tools, IBM® File Manager for z/OS®, V13.1 helps you work more efficiently with z/OS data sets, DB2® data, IMS™ data, MQ queues or CICS® data resources. Extending the standard browse, edit, copy and print utilities of ISPF, File Manager delivers functionality that is designed to address the needs of application developers working with files containing structured data. Also, because the basic features of the File Manager editor and the ISPF/PDF editor are almost identical, you can take advantage of extra features without having to relearn fundamental skills. File Manager also integrates with Rational® Developer for System z®.

File Manager includes four components:

- *A base component to manage z/OS data sets, such as queued sequential access method QSAM), VSAM, partitioned data sets (PDS) and IBM z/OS UNIX® System Services hierarchical file system (HFS) files and WebSphere® MQ queues*

- *A DB2 component to manage DB2 data*

- *An IMS component to manage IMS data*

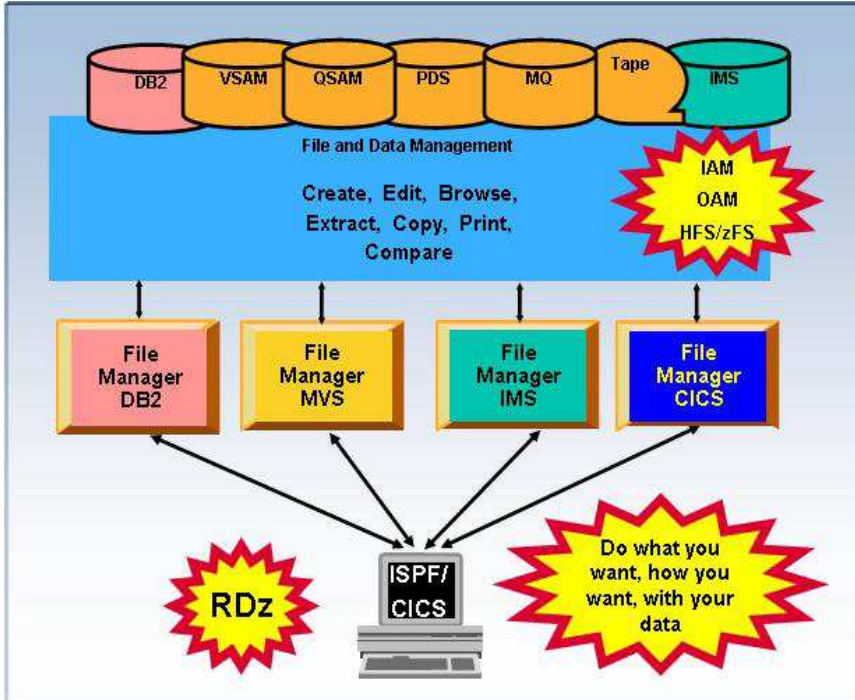- *A CICS component to manage data in CICS VSAM file resources, transient data queues and temporary data queues*

Highlights

- *Supports development and production through extensive editing, browsing, and batch and interactive utility capabilities*

- *Finds, copies, edits, prints, compares and displays data quickly and easily*

- *Defines data-set records efficiently by using COBOL and PL/I copybooks stored in partitioned data sets or library-management systems*

- *Enhances usability by enabling you to customize which fields to display, copy or print*

- *Workstation GUI interface*

In an increasingly complex and competitive environment with challenging business demands, organizations are faced with constant pressure to create new applications that help reduce costs, engender customer loyalty and earn competitive advantage. The need to tighten budgets and do more with less only increases the challenge.

To succeed in a fiercely competitive marketplace, companies must be able to make the most of existing investments and manage application development effectively.

Typically, records in application data sets have a well-defined structure consisting of many fields. Each field can contain a discrete item of data, such as a person's name, a product code or a currency amount. Working efficiently with these data sets requires utilities that recognize the record structure, so you can selectively process individual fields.

File Manager base component

The File Manager base component helps speed the application development process by identifying the structure of your records and displaying each field according to its data type.

This component supports QSAM, VSAM (including IAM™), PDS, HFS and WebSphere MQ data, including support for doublebyte character set (DBCS) data in these data sets. You can edit entire files (regardless of size) and sort data during an edit or browse session.

Using record definitions stored in File Manager templates, you can select the records you want based on field values, find and change data in individual fields, display fields with headings showing name, data type and length — and then print or copy only the fields you need. You can quickly and easily work with files containing multiple record structures and copy data between fields of different data types and lengths as well as between entirely different file types.

In the base component, you can generate templates from a copybook that contains COBOL data-description entries or PL/I DECLARE statements or HLASM defined data, or you can define your own fields in a dynamic template. You can then add record-selection criteria and other formatting information, and save the templates for reuse with different data sets that have the same record structure, or for reuse with different File Manager utilities.

For example, while browsing through data sets, you can create, refine and save a template that displays records meeting certain criteria, such as records with particular field values. Later, you can reuse that template in the File Manager copy utility to extract the records that meet those criteria and copy them to another data set.
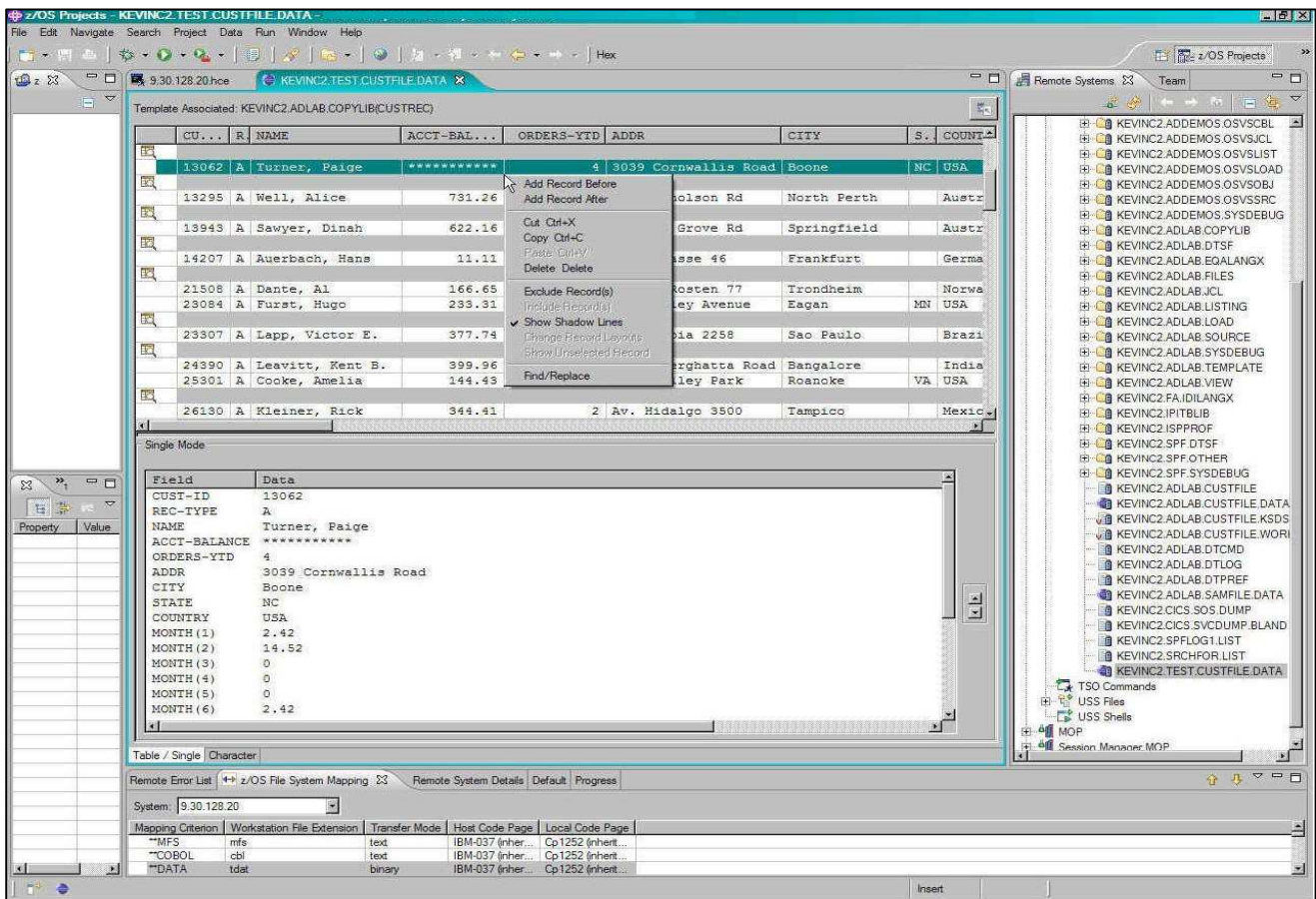

Figure 2: The File Manager workstation GUI interface helps make mainframe developers more productive

The base component processes most record-identification and selection criteria internally, while providing fast access to REXX for complex criteria statements.

Segmented records are supported, allowing you to identify the type of a segment using not only data in the current segment but also using data in segments preceding the current segment in the physical record. Powerful segment-selection algorithms ensure that the segments in a physical record are selected, if the physical record contains at least one segment satisfying the selection criteria for each segment type.

The File Manager base component also includes a number of useful utilities, such as:

- *The very flexible copy utility that ranges from simple data copying to field re-mapping, template criteria selection, user-written record procedures and various PDS specific copying capabilities, including the ability to copy members based on finding a particular condition to be true from records in the member.*

- *Find/change utility that provides flexible options to increase efficiency for batch and online modes.*

- *Data-set compare utility that enables you to use a number of different synchronization types.*

- *Tape utilities that enable you to perform actions such as copy, update and compare with tape files.*

- *Catalog-services utilities (SCS) that provide a user interface for working with catalog entries, and for listing or printing catalog information. The SCS also can be used to build and delete alternate VSAM indexes.*

- *Online access manager (OAM) utilities that enable you to list, browse, update and erase OAM objects, as well as copy, back up and restore them.*


```
  Process    Options    Help

View                   ADPOT02.ADLAB.SAMFILE                      Top of 70
Command ===> _____   Scroll CSR
                                              Record AT TOP    Format TABL
     CUST-ID REC-TYPE NAME          ACCT-BALANCE  ORDERS-YTD ADDR
     #3      #4       #5                      #6          #7 #8            +
     AN 1:5  AN 6:1   AN 7:17          PD 24:5     BI 29:4  AN 33:20
     <--->   -        <---+----1----+->  <---+----1) <---+----1) <---+----1-
****** **** Top of data ****
000001 03115   A      Graham, Holly         254.53          1 3100 Oaktre
000002 05580   A      Moore, Adeline        498.95          3 4700 S. Syr
000003 06075   A      Dubree, Dustin        192.98          1 9229 Delega
000004 06927   A      Buchs, Jillian         99.99          0 41 Avendale
000005 07008   A      Houston, Roger        296.97          1 4111 Norths
000006 07025   A      Marx, Audrey          450.51          2 90 South Ca
000007 11204   A      Ness, Luke            513.06          3 5166 Sprink
000008 11544   A      Graf, Polly           244.42          1 1551 S. Was
000009 12689   A      Boyd, Luke A.          86.88          0 221 Yale Rd
000010 13062   A      Turner, Paige    ***********          4 3039 Cornwa
000011 13295   A      Well, Alice           731.26          4 125 Nichols
000012 13943   A      Sawyer, Dinah         622.16          4 498 Oak Gro
000013 14207   A      Auerbach, Hans         11.11          0 Hahnstrasse
000014 21508   A      Dante, Al             166.65          1 89140 Rost
000015 23084   A      Furst, Hugo           233.31          1 155 Bailey
000016 23307   A      Lapp, Victor E.       377.74          2 Rua Tutoia
000017 24390   A      Leavitt, Kent B.      399.96          2 12 Bannergh
000018 25301   A      Cooke, Amelia         144.43          0 5305 Valley
000019 26130   A      Kleiner, Rick         344.41          2 Av. Hidalgo
000020 26620   A      Parris,April Lynn     555.50          3 Calzada Leg
000021 26770   A      Andropov, Picov         0.00          0 Kalchbuehl
000022 29209   A      Liszt, Mackenzie      411.07          2 2900 Lone O
MA   a                                                               04/015
```

Figure 3: File Manager identifies record structures and displays and allows manipulation of each field according to its data type

- *Disk utilities that allow you to list the data sets on a disk, as well as their disk extents, and search for data within a disk extent.*

- *Compare utility to write records to output data sets. You can choose inserted, deleted, matched and changed record data sets individually.*

- *Template utilities (batch and interactive) enable you to generate simple one-copybook templates from an input COBOL copybook or PL/I include-file PDS and update existing templates by rereading the copybooks that originally created them.*

You can also enhance File Manager with your own custom REXX procedures (such as tallying field values) and automate tasks in batch jobs, REXX procedures or command lists (CLISTs). A high-performance subset of REXX and File Manager REXX functions, called FASTREXX, is also available. The FASTREXX subset is broad enough to handle most normal processing tasks.

File Manager DB2 component

The File Manager DB2 component delivers the commands and behavior of the ISPF/PDF editor and extends these capabilities to DB2 data. You can view detailed information about DB2 objects, show the relationship between them and select the objects you want to work with from a connected location or subsystem.

The File Manager DB2 component editor offers two modes of operation, allowing you to process both small and very large DB2 objects with ease.

With the DB2 object list utility, you can selectively list DB2 objects (for example, by owner), and then invoke commands against those objects. The File Manager DB2 component also enables you to view and change DB2 privileges through a full-screen interface, so that you can eliminate the need to code SQL statements to list and change DB2 privileges.

The DB2 command utility offers an alternative method for entering, executing and reviewing DB2 commands.

The DB2 copy and import utilities allows you to copy data between DB2 tables, or from a data set to a DB2 table, you can optionally delete all rows from the target table and optionally only update non-index columns.

The interactive SQL SELECT prototyping utility in the File Manager DB2 component helps you build a valid SELECT statement on-screen. You can interactively test, analyze and implement SQL statements. When you run the SQL statement, you can browse or edit the formatted result table and then save the SQL statement for use in your application code.

The powerful export utility allows the export of DB2 data in a number of formats including File Manager export format, the external DB2 UNLOAD utility format, the format used by the DB2 DSNTIAUL sample program, as well as any format that can be described using a template.

The File Manager export format includes multiple options to control handling of NULL values and options for various column data types, and delimited text formats, such as comma-separated value (CSV) output. Data can be exported to QSAM or VSAM data sets and you can export only selected rows or columns. The export utility can be accessed from within the File Manager DB2 editor, allowing you to prepare the data for export using the full power of the DB2 editor.

You can also generate JCL for the most commonly used DB2 utilities to save time.

File Manager IMS component

Using record structures defined in COBOL or PL/I copybooks, the File Manager IMS component enables you to edit IMS segments displayed as individual fields, formatted according to their data types. You can find and change data across an entire database hierarchy or in specified segments and fields.

You can run a REXX procedure that can edit segments in an IMS database. The support for tabular display of data provides a highly usable display of segments within the database hierarchy and offers significantly improved response times. Navigation commands allow you to specify segment operands, helping to simplify navigation between different segment types. You can also initialize and insert the first segment into an empty database.

The File Manager IMS component helps minimize resources held during user screen interactions to maximize concurrent access to data. You can use flexible criteria to select IMS database segments containing specific field values, and extract the segments into a sequential data set for later use in reports. Or you can use the IMS component to load them into a different database. For example, you might create a small test database using data extracted from a large production database.

Through the IMS component, you can access databases in the IMS database batch environment (known in File Manager as DL/I mode), or you can use batch message processing (BMP) to access databases that are concurrently being used in IMS Transaction Manager, DBCTL or CICS environments.

A batch and interactive utility enables you to copy File Manager IMS templates and views, update them from possibly changed copybooks, modify IMS templates for use with new IMS databases of similar structure and enable IMS views to be used with templates other than the original.

An IMS batch browse (IBB) utility provides read-only IMS edit batch (IEB) processing. This capability is particularly useful when using dynamic program specification blocks (PSBs).

An online dialog enables you to create IMS print utility (IPR) jobs. This dialog eases the process of printing the contents of a view of a database. Online dialogs are also provided for creating IEB and IBB jobs.

File Manager CICS component

File Manager for CICS provides File Manager access to CICS resources under a CICS transaction. The CICS resources supported for browse, edit and certain File Manager utilities are VSAM files, temporary storage queues and transient data queues.

You can authorize users to view and change the status of supported local and remote CICS resources, view other File Manager users and applications queued on CICS resources and forced off these CICS resource holders, and perform File Manager base and File Manager IMS tasks from the File Manager CICS transaction.

File Manager control capabilities

File Manager provides control facilities that can help the application-development community to respond to increasing governance and compliance requirements.

A "scrambling" algorithm modifies data in a field while maintaining its system data type. This allows developers and testers to use production data without exposing sensitive data such as names, addresses, Social Security numbers and so on.

Useful control options are provided, such as the ability to display only active DB2 groups, to turn off audit logging of File Manager DB2 browse operations and to warn of possible data corruption if the character code page (CCSID) of the terminal does not match the DB2 code page.

Audit logging can be required at File Manager installation time optionally for DL/I access, and optionally by IMS subsystem for BMP access. When enabled, the File Manager IMS component generates security audit-log records and logs the deletion of all children when a parent segment is deleted.

The ability to authorize users with the File Manager CICS transaction limits risk of accidental or malicious access to key files and datasets.

SOA support

File Manager enables you to generate XML data from files. A File Manager template that describes the data-record layouts is required. The XML tags are generated based on the field names from the template, and the XML content comes from the data. A number of options are provided for the handling of invalid and unprintable data.

File Manager integrates with Rational Developer for System z, allowing all aspects of Web-service (and traditional application) development to be undertaken from the same developer tool.

New in V13.1

- Added ability to create File Manager templates in XML format
- Added support to specify character encoding (CCSID) of text fields in a template
- Support to map SMF record types
- Enhanced File Manager plug-in to work with IMS databases
- Enhanced IMS extract and print utility functions with performance improvements and additional parameters
- Added support for DB2 LOB columns, which includes XML type
- Enabled File Manager DB2 export utility function to accept user-specified SELECT statement
- Added additional DB2 installation options to control uncommitted read
- Added support for DB2 V11, IMS V13, and Enterprise COBOL V5.1

IBM File Manager for z/OS, V13.1, at a glance
Hardware requirements
• Any hardware configuration capable of running IBM z/OS
Software requirements
• IBM z/OS, V1.12 (5694-A01) or later
• Depending on the functions used in the product, other related products may be required. See the product Web site, listed below, for more detailed software requirements

Part of a leading-edge family of z/OS tools

File Manager for z/OS is part of the IBM Problem Determination family of products. These include IBM Application Performance Analyzer for z/OS, IBM Debug Tool for z/OS, IBM Fault Analyzer for z/OS, IBM File Manager for z/OS, and IBM Workload Simulator for OS/390 and z/OS.

Designed to help you maximize your investment in IBM System z products, these products are a robust suite of integrated development tools that enable you to improve IT operational efficiency and transform applications to achieve greater business flexibility.

The IBM Problem Determination tools help application developers to improve application delivery throughout the application life cycle. You can use these tools to help increase productivity and IT effectiveness across source code debugging, application ABEND analysis, data management and application performance analysis.

The IBM Problem Determination tools do much more than support traditional applications. They include capabilities that enable you to build SOA applications. They are tightly integrated with other tools in the IBM problem determination tools portfolio, as well as other tool sets. The tools also continue to support and make the most of the latest subsystem levels. These capabilities help make IBM problem determination tools an excellent choice for your business.

For more information

To learn more about IBM problem determination tools, contact your IBM representative or IBM Business Partner, or visit the following Web sites:

IBM Problem Determination Tools family:
ibm.com/software/awdtools/deployment/

IBM Application Performance Analyzer for z/OS:
ibm.com/software/awdtools/apa

IBM Debug Tool for z/OS:
ibm.com/software/awdtools/debugtool/

IBM Fault Analyzer for z/OS:
ibm.com/software/awdtools/faultanalyzer

IBM File Manager for z/OS:
ibm.com/software/awdtools/filemanager

IBM Workload Simulator for z/OS and OS/390:
ibm.com/software/awdtools/workloadsimulator

TAKE BACK CONTROL WITH WebSphere.