

MICRO FOCUS MAINFRAME EXPRESS™

Mainframe Express provides a fully integrated IBM-mainframe maintenance and development environment, enabling programmers to take advantage of modern, powerful development tools to edit, compile, debug and test mainframe applications on their workstations.

OVERVIEW

Mainframe-based software development tools and the development practices that evolved from their use were adequate for building the first generation of mainframe-only systems. However, the IT and business landscapes are changing and the following demands are being made:

- Businesses require IT to deliver systems faster and for less cost
- Programmers demand the most modern development environments available
- Business system functionality needs to be delivered to multiple channels, including the Web

Micro Focus Mainframe Express® provides a fully integrated IBM-mainframe maintenance and development environment, enabling programmers to take advantage of modern, powerful development tools to edit, compile, debug and test mainframe applications on a PC. Mainframe Express combines leading-edge mainframe emulation, a comprehensive unit and integration test environment, and unparalleled connectivity, increasing productivity across the entire development lifecycle.

HIGHLIGHTS

Faster Time-To-Market

By using a streamlined development and testing process, Mainframe Express programmers can create and modify mainframe-based applications in significantly less time.

Lower Costs and Reduced Risk

By using Mainframe Express, programmers are in full control of their very own test regions. Moving development and testing workloads to the PC releases costly mainframe CICS, IMS and DB2 regions, and eliminate resource contention. Savings can also be made on 3270-based testing products that are no longer required. TSO overheads are reduced, job queues are released, and expensive mainframe hardware upgrades with their associated software costs can be postponed. The best-in-class testing facilities in Mainframe Express lead to improved code quality, and reduce the potential for system downtime in production.

Attract and Retain Top Talent

For many years, client/server programmers have had access to the most modern tools. With Mainframe Express, mainframe programmers can also benefit from a modern, rapid, graphical development environment. Experienced COBOL programmers with valuable programming expertise and knowledge of the business can become fluent in GUI client/server technologies, while new programmers can be more easily attracted to COBOL development.

Enable Legacy-To-Web and E-business Development

Mainframe Express provides a flexible, high-performance platform for the development and testing of Internet-based and client/server applications. It enables organizations to combine mission-critical COBOL with emerging information technologies in order to extend business applications across the enterprise.

FEATURES

Graphical Integrated Development Environment (IDE)

Mainframe Express IDE provides integrated access to all of the tools needed to develop, maintain and test applications deployed on the mainframe – and to transform and test new e-business functionality. The high level of feature integration streamlines and simplifies common maintenance, support and development tasks.

- Rapid access is provided to source code management systems that comply with the Microsoft-standard SCC (Source Code Control) interface, allowing check-in, check-out and other related functions from the IDE. Examples of compliant systems include Microsoft Visual SourceSafe, PVCS Version Manager and PVCS Dimensions
- During the edit, compile and debug cycle, programmers edit source code using a state-of-the-art graphical (Microsoft-standard) source editor, specially designed for COBOL programming
- Programs can be compiled by a single click on a toolbar icon from within an edit session
- Syntax errors automatically reposition the editor to the position within the source code where the error was detected
- Testing can be started by submitting JCL, invoking an online CICS or IMS transaction, or executing CLIST or REXX procedures with just a few clicks of the mouse
- The source level debugger utilizes the same consistent graphical interface as the editor
- At any point during a testing session, source code can be modified without interrupting the cycle of edit/compile/test
- A comprehensive Test Coverage report can be produced to show which lines of code were executed during one or more test runs

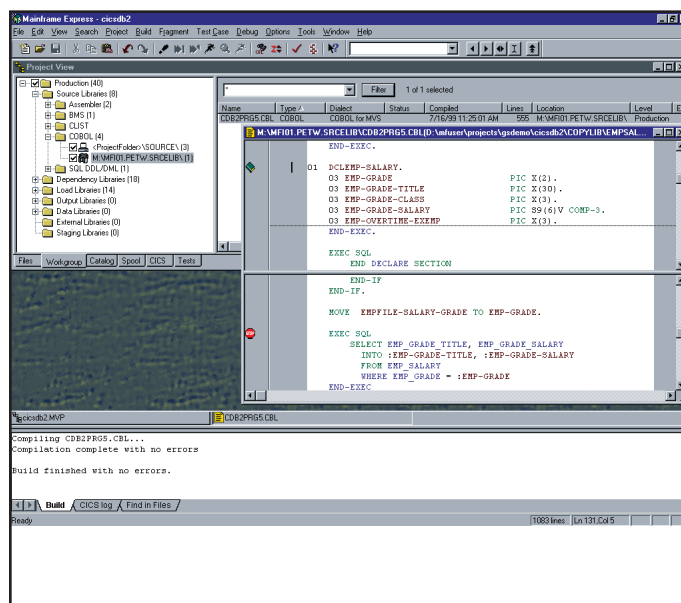
A Data File editor and mainframe-style catalog are also integrated into the IDE, as well as subsystem emulators, including CICS, IMS, DB2, Assembler, JCL, CLIST and REXX.

'Application intelligence' built into the Mainframe Express project database automatically determines source code dependencies, such as copy files and compiler directives, greatly reducing complexity. This allows programmers to compile an entire application with one click of the mouse — which improves productivity while simplifying administration and project management.

Powerful Debugger

The debugger utility within Mainframe Express provides advanced features to help analyze the execution flow of applications, and find and resolve code errors. These features include:

- Total control over the debugging process. Programmers can single step, step all, skip code, run to a particular location and reset the execution point to any statement in their code — up to and including restarting the debug process with one mouse-click
- Program execution up to a pre-determined debug breakpoint. Multiple break points can be disabled and re-enabled during a run. A wide variety of advanced breakpoint options are available and breakpoints can be set during edit sessions



Integrated, graphical mainframe application development.

- Program execution to a pre-defined program. A list of just the programs to debug can be maintained. When the application execution encounters a program in the list, the debugger is automatically invoked. All other programs can be executed without debugger intervention, but are still available for problem diagnosis if required
- The ability to examine and change any EBCDIC data item in the program during execution
- Complete control over the system date and time. With DateWarp™ utility, the system date can be changed at execution time or any time during the debugging process without affecting other applications running on the PC

Mainframe Code and Data Access

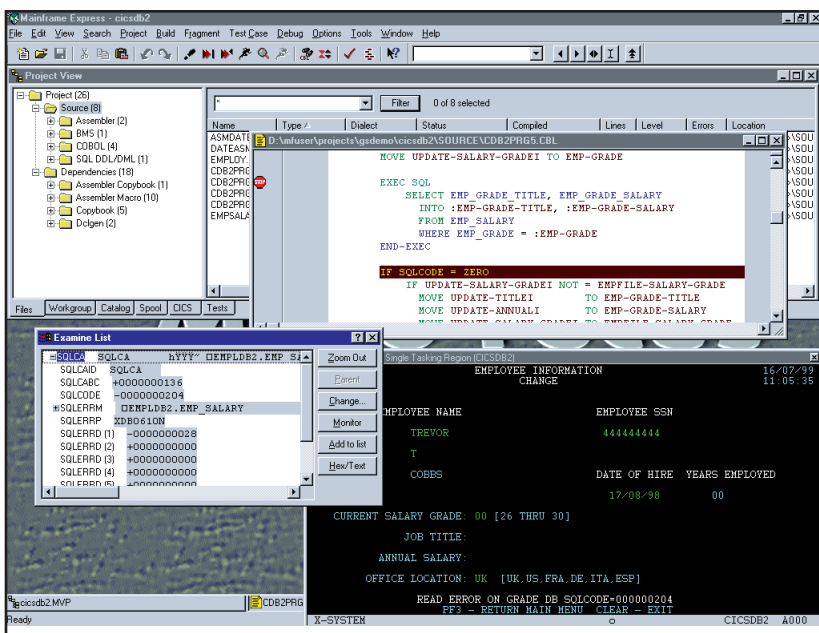
Mainframe Express includes facilities to provide seamless access to mainframe source and data resources. This requires installation of additional mainframe software (included with Mainframe Express) and enables:

- Test data (eg. VSAM, QSAM, DB2 and IMS) and source code to be downloaded from the mainframe, or kept on the mainframe to be accessed directly from Mainframe Express

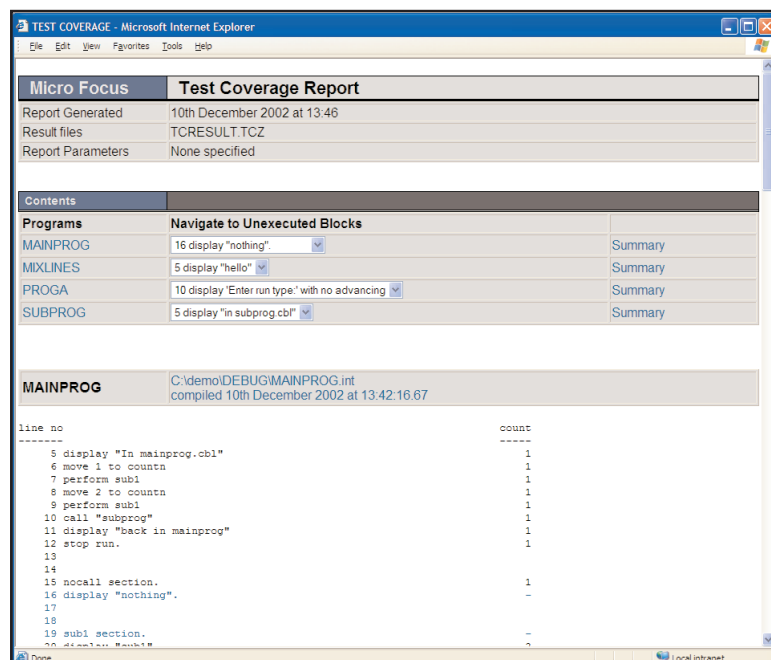
- Automated source synchronization between mainframe and LAN development libraries, including access to common configuration management systems such as Endeavor and Panvalet
- Submission of JCL from Mainframe Express to be executed on the mainframe
- Viewing of the mainframe job output queue from the PC, without the need to log on to TSO

Data Manipulation

Mainframe Express includes a complete set of tools to manage test data. Using the data file editor, programmers can define data structures and insert, update or delete data records quickly and easily. All standard mainframe data-types are supported and can be edited directly from the Mainframe Express catalog. A formatted view of data records based on the COBOL data structure is provided, as well as a hex view of the data.



Advanced mainframe application debugging on the workstation.



Guarantee 100% of code is tested with the Test Coverage facility.

Team Management through Workgrouping

To allow programmers to share source files, data and program executables, Mainframe Express provides application workgrouping. This capability is essential for secure, centralized team management and greatly simplifies the task of setting up a shared development environment for many users. With application workgrouping programmers can:

- Define multiple (up to 10 levels of) source, copy or load libraries that can reside on the LAN or the mainframe and be viewed by all the programmers in the workgroup
- Define a steplib or concatenated search path for load library and copy library modules. The search order is easy to visualize and configure, allowing programmers to perform unit testing and integration testing on their source code changes

Integrated Support for JCL and REXX Scripts

A full multi-step JCL engine with support for JES2 and JES3 is built into Mainframe Express. This allows programmers to execute complete batch jobs on the PC and take advantage of the following features:

- SDSF spool mechanism that captures and displays job output
- Emulation of the mainframe access method services utility (IDCAMS) that enables programmers to manipulate PC-based VSAM files using the language of the mainframe
- Emulation of mainframe sort and merge utilities

A fully compatible REXX and CLIST engine is also built into Mainframe Express. This allows a programmer to edit and then execute their mainframe REXX scripts and CLIST commands directly within the Mainframe Express IDE.

Powerful COBOL Compiler

Mainframe Express includes a fast and powerful COBOL compiler designed to support mainframe COBOL applications by providing:

- Comprehensive IBM COBOL dialect support, including Enterprise COBOL for z/OS, COBOL for OS/390, COBOL for MVS, COBOL/370, VS COBOL II (Releases 2, 3 and 4) and OS/VS COBOL
- Support for IBM LE (Language Environment)
- Support of mainframe addressing modes for programs and data – AMODE(31) and DATA(24/31)
- Powerful diagnostics through the integration between the compiler output and the COBOL editor

CICS Option™

Mainframe Express includes the CICS Option, which supports the CICS Command Level Application Programming Interface (including the System Programming Interface), providing full-featured CICS programming capabilities on the PC. Comprehensive CICS support enables programmers to extend the highly productive work they do with Mainframe Express to maintenance, enhancement and e-business enablement of CICS online applications.

IMS Option™

Mainframe Express includes the IMS Option, which enables IMS/ESA TM & DB application development on the PC. Comprehensive IMS support enables programmers to perform maintenance, enhancement and e-business enablement of IMS online and batch applications.

SQL Option™ for DB2

Included in Mainframe Express, the SQL Option for DB2 emulates mainframe DB2 on the PC. A fast, powerful, DB2-compliant database engine forms the foundation of the SQL Option for DB2. This database engine can serve as a personal database server, a workgroup server or gateway to DB2 on the mainframe. Database location and connectivity are transparent to the application program, reducing the set-up time for bug fixes and minor code changes. Powerful graphical tools simplify the creation and modification of test tables and data.

Assembler™ Option

The Assembler Option included in Mainframe Express supports compilation of the IBM High Level macro assembler and the interactive debugging and execution of the IBM ESA/390 and z/OS instruction set, including Problem State, instruction set and floating point instructions.

PL/I Option *(available as separate option)*

Available as a separate option, the Mainframe Express PL/I Option enables PL/I programmers to take advantage of the productivity benefits of Mainframe Express.

It includes:

- A powerful PL/I compiler that supports mainframe PL/I dialects
- A macro processor that is fully compatible with the mainframe PL/I macro processor
- A source level PL/I debugger that allows the setting of breakpoints and the viewing/editing of EBCDIC data items
- Integration with the IDE to provide PL/I programs with access to the Mainframe Express data files catalog and the full range of mainframe subsystem emulators (including DB2, IMS and CICS)

RECOMMENDED SYSTEM REQUIREMENTS

Workstation

- Windows 2000 or Windows XP Professional
- 600 MHz Intel Pentium 3 processor or better
- 256MB RAM or better
- 500MB free hard disk space (minimum)
- SVGA monitor (800x600 minimum resolution)
- CD-ROM drive (either local or on network)

Mainframe *(depending on the options used, not all of these items may be necessary)*

- S/390, S/370, z/Series or 100% compatible computer
- IBM OS/390 v2.4 or higher (including z/OS)
- IBM VTAM v3.2 or later
- IBM RACF -or- CA-ACF2 -or- CA-Top Secret
- IBM TCP/IP for MVS v3.1 or later -or- CA-SOLVE:TCPaccess v4.1 or later
- IBM CICS v2.1.2 or later (for CICS Option and/or Mainframe Access Server CICS task)
- IBM DB2 for OS/390 v3.1 or later (for SQL Option and/or Mainframe Access DB2 extracts)
- IBM IMS/ESA TM v4 Release 1 or later (for Remote IMS Server)
- IBM VS COBOL II Release 4.0 or later (for Remote IMS Server)

ABOUT MICRO FOCUS

Micro Focus is the leading provider of COBOL application development and deployment software for contemporary platforms and architectures. Micro Focus enables organizations to unlock the value of their legacy by reusing their business-critical assets, resulting in reduced costs, increased agility and minimal risk. Founded in 1976, Micro Focus is a global company with principal offices in the United Kingdom, United States and Japan. For more information, visit www.microfocus.com.

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