



## Macro 4 Eclipse workbench

### Modernizing application lifecycle management

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**M4Workbench offers a modern alternative to 3270 mainframe interfaces for companies seeking a more flexible and intuitive environment for mainframe development, testing and support. M4Workbench is an Eclipse framework that allows you to launch Macro 4's industry-leading mainframe applications from one convenient location. Its powerful 'point and click' interfaces help you to:**

- Make development tasks easier and less time consuming to perform, for IT staff of any experience level
  - Reduce lead time for software enhancements by enabling users to switch seamlessly between all of the activities involved in developing, testing and maintaining applications
  - Attract a new generation of technicians by providing a familiar, modern development environment, and reduce reliance on a dwindling pool of specialist 3270 skills
  - Improve collaboration on performance problems, using email, notes sharing and browser-based information exchange
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### Bringing the power of Eclipse to the mainframe

For IT professionals whose role is primarily development and testing orientated, Eclipse is rapidly becoming the online workplace of choice. M4Workbench is a ready-to-go Eclipse framework for managing the entire application lifecycle on IBM Z, from code editing, through testing and performance tuning, to fault analysis and recovery in the live production environment.

All Eclipse functionality is available through standardized graphical interfaces that are integrated within M4Workbench. They are also fully compatible with other Eclipse frameworks.

Macro 4's Eclipse interfaces offer a new way to access powerful, long-established mainframe applications: DumpMaster, TraceMaster, InSync, FreezeFrame and Tubes. These are complemented by M4SlickEdit, for code editing, and z/Explorer, which offers a range of JES and dataset administration functions.

All Eclipse interfaces can be fully secured using their security settings within the standard mainframe security products, such as RACF, ACF2 and Top Secret.

Users can customize their working environment by arranging multiple windows, showing different system views from any of their Eclipse applications, side by side on their M4Workbench screen. This approach puts users in control and saves time by making multi-tasking easier.

M4Workbench can be used alongside Macro 4's 3270 and browser interfaces.

#### AT A GLANCE

- JES and dataset administration
- Terminal emulation
- Session management administration
- Multi-language source code editing
- Interactive testing and debugging
- Fault analysis
- Data management and manipulation
- Application performance management

## M4Workbench features:

### z/Explorer

Comprehensive JES and dataset administration, plus terminal emulation

#### Easier access to mainframe data

z/Explorer users can save time by accessing mainframe datasets and members, and UNIX USS files, directly from Eclipse. Files can also be downloaded to your local environment – for emailing to colleagues, for example. When you select a file, z/Explorer automatically launches M4SlickEdit or your chosen text editor, for convenient browsing and editing.

#### Swift job submission

z/Explorer provides direct access to the JES spool. This feature allows you to submit mainframe jobs from Eclipse, such as application compilations, test jobs and deployment tasks, and to view the resulting output. If required, JCL output can be edited, modified and resubmitted directly to JES. z/Explorer also lets you view the JES2 and JES3 system logs to monitor active jobs. You can manage all system activity by monitoring the console log and issuing console commands.

#### 3270 terminal emulation at zero cost

For Eclipse users requiring access to mainframe 3270 applications, z/Explorer provides a 3270 terminal emulation view. The 3270 access view allows you to log in to your 3270 mainframe applications without leaving Eclipse. This removes the need for additional 3270 emulation software and provides the opportunity for you to reduce your software license and maintenance costs significantly.

The z/Explorer 3270 terminal emulator is fully configurable, allowing users to define keyboard mapping, code page, font, color and screen size.

### Tubes

Secure and flexible multi-session management

#### Secure single sign-on to multiple applications

Access to 3270 mainframe applications can be made even easier by using Tubes, Macro 4's powerful session management software. Users can sign on to Tubes from the 3270 access view in z/Explorer and immediately access all of their 3270 applications from a single menu, without needing to log in again or provide additional security information.

#### Powerful administration capabilities

Tubes also has Eclipse interfaces that provide a host of powerful additional features to support Tubes administrators and systems operators in their daily tasks. For example, when editing parameters, syntax is automatically validated as you type and parameter values are selected from drop-down lists. Parameter values can also be viewed simultaneously for different members, allowing cross-validation.

Configuration changes and operational tasks can be completed simply by selecting options from a list, rather than requiring the user to remember a series of commands. New administrators and operators need less training and can become productive more quickly because the system itself guides the user, eliminates syntax errors and prevents system conflicts.

#### Performance monitoring

An integrated performance dashboard supports service level improvement by monitoring key metrics such as response times and user activity. Users can view historical trends, perform data extrapolation, compare multiple time slices, set warning thresholds, and trigger exception notifications.

## M4SlickEdit

Intelligent multi-language code editing

### Advanced source code and JCL editing

M4SlickEdit is an intelligent code editor supporting over 40 different programming languages, including COBOL, PL/1, Assembler, JCL, REXX and other mainframe languages.

M4SlickEdit is fully integrated into the z/Explorer interface to allow seamless editing of mainframe source code and JCL without the need for direct access to the mainframe environment. When you select a program, z/Explorer invokes M4SlickEdit, ready to start editing the code in the correct language.

M4SlickEdit has many time-saving features to help busy developers write code faster, and with fewer errors, directly from Eclipse. Bookmarks can be used to navigate your code base faster; automated syntax expansion, auto-completions and code templates minimize typing and a built-in beautifier helps you produce more readable code with better spacing.

## TraceMaster

Interactive testing and debugging

### Simplified batch tracing

TraceMaster users can set up and run batch and CICS traces swiftly and painlessly from Eclipse. A project creation wizard takes users through the trace setup process step by step and allows less experienced programmers to get started without the need for extensive training.

All information relevant to a new program trace can be viewed and amended in one place, allowing you to start debugging more quickly. This includes details such as which steps and programs to trace, program listings locations and program breakpoints to be set. The user's TraceMaster preferences include many default settings for a new trace project, to minimize data entry; any defaults can be overridden, as required. The trace project can then be run directly from Eclipse, without the need for 3270 terminal sessions.

All current and previous batch and CICS tracing projects can be viewed together and projects can be copied and modified easily. This allows users to save time by reusing existing tracing projects and adapting them to fit new testing scenarios rather than create a whole new tracing project from scratch.

## DumpMaster

Fault analysis and recovery

### Faster fault diagnosis

DumpMaster sets the standard in mainframe abend analysis and fault resolution. Now Eclipse users can benefit from additional features that improve usability and productivity.

All dump files are aggregated into a single dump list, which can be filtered easily using clickable columns, making individual dumps easier to locate, for example by 'program name', and users can tailor which dump list columns are shown, to suit their individual requirements.

Navigation through dump files is easier, bookmarks can be used to note points of interest and a scratchpad is available to share comments with other users, for collaborative working. Multiple pages can be viewed simultaneously in separate windows, a listing summary shows the data mapped onto program listings and detailed information is just a click away.

## InSync®

Data management and manipulation

### Flexible data editing

M4Workbench combines the powerful file and data management capabilities of InSync® with the ease-of-use of Eclipse. The InSync Eclipse interface makes browsing and editing mainframe files and datasets, and Db2 and IMS databases, simpler than ever.

Wizards guide users through common functions, such as copying, library searching and dataset formatting, to reduce the need for training.

Flexible screen layouts let you manage your workspace more effectively and work on several tasks simultaneously. For example, you can set up multiple file edits and track their progress simultaneously in multiple windows on a single screen, alongside dataset lists, recently manipulated files, records found with the search facility, the results of 'compare' requests and member lists.

Navigation is fast and simple. Arrow keys allow you to navigate quickly between rows and cells, and scroll bars make it easier to move around large files.

## FreezeFrame

Application performance analysis

### Collaborative resolution of performance issues

FreezeFrame allows you to diagnose performance problems quickly by analyzing how efficiently mainframe applications are using system resources. Performance measurements occur during an observation session, which can be set up and run directly from FreezeFrame's Eclipse interface. Eclipse users can share knowledge and collaborate to resolve problems faster by:

- Posting comments on performance problems using virtual 'sticky notes'
- Emailing all or part of a report to colleagues for discussion
- Exporting reports to a browser window for sharing with technical colleagues who have no 3270 or Eclipse access, or for escalating to senior management

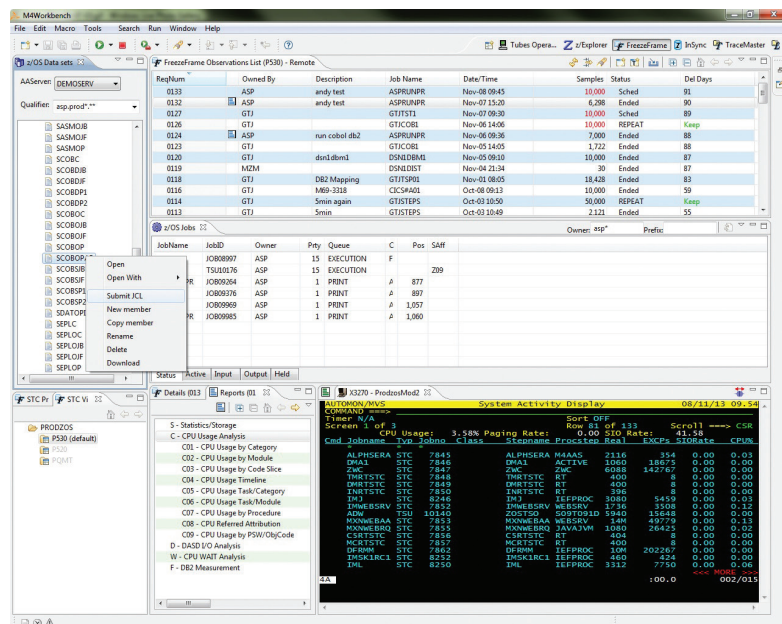
When accessed within the Eclipse environment, FreezeFrame also supports extra features that increase flexibility and usability, including:

- Clickable sort columns, which enable users to generate their own custom reports, and reduce the need for systems administrators to write additional reports
- Swift, context-sensitive navigation through reports
- Simple 'point and click' selection of data extractors when setting up new system observations, making the process easier to learn as the user is not required to remember specific commands

## M4Workbench user interface

A modern window on the mainframe environment

From M4Workbench you can easily access all of the powerful features of Macro 4's application lifecycle management suite and tailor system views to meet the individual needs of every user.



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Please contact us for more information:

USA Tel: +1 973 526 3900 Email: [market.usa@macro4.com](mailto:market.usa@macro4.com)

Europe Tel: +44 1293 872000 Email: [market@macro4.com](mailto:market@macro4.com)

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