



# Wolfram *Workbench*<sup>™</sup>

## High-Throughput Software Development

Wolfram *Workbench* is a state-of-the-art, integrated development environment (IDE) for Wolfram products and technologies, including *Mathematica*<sup>®</sup>, *gridMathematica*<sup>™</sup>, and *webMathematica*<sup>™</sup>. Built on Eclipse<sup>™</sup>, a leading platform for IDE development, *Workbench* complements *Mathematica*'s uniquely powerful, high-level programming language and world-renowned features for computation, visualization, and modeling. Ideal for development of large-scale technical solutions, *Workbench* gives programmers access to state-of-the-art development tools, resulting in more efficient project construction and increased productivity.

*“Workbench has quickly become an indispensable tool we wouldn't want to live without. We can now develop both Mathematica and Java code in the same IDE and profit from the version control and build-management infrastructure we have already established around Eclipse.”*

Sascha Kratky  
uni software plus GmbH

Featured on The O'Reilly Network in “Distributing the Future.”  
[www.wolfram.com/r/oreilly](http://www.wolfram.com/r/oreilly)

### WORKBENCH ENABLES USERS TO:

- Group files, code, and other *Mathematica* resources into a single project
- Perform source code editing with syntax highlighting, error reporting, local-variable coloring, and many more options
- Study code as it runs to easily detect and fix any problems
- Profile the code's execution and develop and run tests, with an array of insightful reporting methods
- Manage multiple versions of files and access their version histories
- Build and deploy *Mathematica* packages

### FEATURES THAT MAKE *MATHEMATICA* IDEAL FOR DEVELOPMENT INCLUDE:

- Multiparadigm programming that lets users program as they think, not as the language dictates
- Short, readable code for faster, simpler implementation
- The world's most extensive computation library, with symbolic as well as numerical and graphical functionality
- Built-in connectivity to other languages and extensions
- Cutting-edge deployment options

### USER-FRIENDLY ONLINE RESOURCES:

- Introductory screencast tutorials
- Searchable Eclipse-style documentation

For more information, visit [www.wolfram.com/workbench](http://www.wolfram.com/workbench).

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## Workbench Features

### PROJECT-BASED APPROACH

Group files, code, and other *Mathematica* resources into a single component • Supports *Mathematica* code and notebooks, Java source, and classes for *J/Link*<sup>™</sup>, *DatabaseLink*, and GUI widgets

### SOURCE CODE EDITOR

Powerful source code editing with syntax highlighting, error reporting, local-variable coloring, and much more • Reports errors with problems-summary window and mouse-over usage messages for convenient assistance • Code outline provides summary of code in a source file

### DEBUGGING

Lets you study code as it runs, detect and fix any problems • Enables breakpoints to halt and evaluate variables • Tracks problems with useful error messages

### PROFILING

Generate a deterministic execution profile report • Reports the number and length of evaluations, and links expressions to source code

### TESTING

Write and run tests • Testing overview lists passed and failed tests with links to the actual tests

### VERSION CONTROL

Manage multiple versions of files • Gives access to version history

### PARALLEL DEBUGGING AND PROFILING

grid*Mathematica* programs run through the *Workbench* set up connections from each kernel in the cluster back to the *Workbench* • Supports all debugger features such as breakpoints, stack display, and source location • Profile report gives execution history for each kernel in the cluster

## General *Mathematica* Features

- Over 2200 built-in functions, including the world's largest collection of advanced algorithms for numeric and symbolic computation, discrete mathematics, statistics, data analysis, graphics, visualization, and general programming
- System-wide dynamic interactivity, allowing the creation of full-function dynamic interfaces for arbitrary objects, including 2D and 3D graphics, math, tables, text, etc.
- Automatic creation of high-fidelity, high-impact 2D, 3D and dynamic visualizations of functions and data with the introduction of 25+ new core visualization types and 50+ new general visualization options
- Over two gigabytes of data for math, physics, chemistry, finance, geography, linguistics, and more available to users on demand
- New level of automation for handling external data, including support for hundreds of formats and subformats across a full range of areas
- Multiparadigm symbolic programming language with support for procedural, functional, list-based, object-oriented, and symbolic programming constructs
- Automatic precision control and support for exact integers of arbitrary length, rationals, floating-point real and complex numbers, and arbitrary-precision real and complex numbers
- Unification of active graphics and controls with flowing text and input
- Automated computational aesthetics, with algorithmic optimization for visual presentation
- User-defined or automatic algorithm selection for optimal performance
- High-speed numerical linear algebra with performance equal to specialized numeric libraries
- High-performance optimization and linear programming functions
- Industrial-strength string manipulation
- Built-in universal database connectivity
- Integrated web services support
- Language bindings to C, Java, .NET, Python, and scripting languages
- All-platform support for 64-bit addressing
- Support for multicore processors

## Technical Requirements

Wolfram *Workbench* requires *Mathematica* 5.2 or higher and is currently available for Windows, Mac OS X, and Linux. It can also be used with other Wolfram products, including grid*Mathematica* and web*Mathematica*.

For more information about technical requirements and the technology behind Wolfram *Workbench*, visit [www.wolfram.com/workbench/technology.html](http://www.wolfram.com/workbench/technology.html).

## How to Get It

Wolfram *Workbench* is available as a free benefit for our *Premier Service* customers. Anyone with a current *Premier Service* subscription for *Mathematica*, web*Mathematica*, grid*Mathematica*, *Mathematica Personal Grid Edition*, *Mathematica for Students*, or *Mathematica for the Classroom* can request an electronic copy of Wolfram *Workbench* from [www.wolfram.com/premiersupport/workbench.cgi](http://www.wolfram.com/premiersupport/workbench.cgi).

Wolfram *Workbench* is also available for sale from the Wolfram web store at [store.wolfram.com/workbench](http://store.wolfram.com/workbench).

For more information, visit [www.wolfram.com/workbench](http://www.wolfram.com/workbench).

Wolfram *Workbench* training is now available!  
[www.wolfram.com/minicourses/m235](http://www.wolfram.com/minicourses/m235)

WOLFRAMRESEARCH

WOLFRAM RESEARCH, INC.  
info@wolfram.com ■ +1-217-398-0700

WOLFRAM RESEARCH EUROPE LTD.  
info@wolfram.co.uk ■ +44-(0)1993-883400

WOLFRAM RESEARCH ASIA LTD.  
info@wolfram.co.jp (Reseller support only)