webMATHEMATICA™ 2

Add dynamic computations and visualization to your website

webMathematica is the clear choice for adding interactive calculations to your website. It allows you to build websites that let users compute and visualize results on your site from any web browser or web-enabled device.

webMathematica provides a collection of tools that enables *Mathematica*® commands to be placed inside HTML pages; each time a particular page is requested from the server these commands are processed by a *Mathematica* session.

In addition, these tools control the *Mathematica* sessions on the server and provide support such as launching, initialization, session pooling, and automatic restart.

KEY BENEFITS

- Deploy calculators, algorithms, and problem solvers over the web or intranets without having to install and administer software on individual machines.
- Build custom websites that provide specialized calculations to premium customers.
- Sell or rent value-added services to technical professionals.
- Showcase *Mathematica*-based work in interactive web documents.
- Deliver sophisticated courses over the web, including highly interactive courseware.
- Publish interactive textbooks and book supplements over the web. Administration and content generation can be separated completely to minimize development and maintenance effort.

MAJOR ADVANTAGES OF webMATHEMATICA

Compatibility

Built around Java servlets, a proven server technology, webMathematica is fully compatible with state-of-the-art dynamic web systems.

Computational ability

webMathematica makes most *Mathematica* functions available for website development. Developers can add numerical, symbolic, and graphical applications to websites, delivering the power of *Mathematica* from any web browser.

Rapid prototyping and large-scale computation

Mathematica's high-level, interactive programming language is very well suited to rapid prototyping, so it decreases your development time and effort. webMathematica also scales well, so it is ideal for large intensive computations.

Typesetting system

webMathematica contains a powerful typesetting system that can generate results to web browsers as images, PDF, XML, SVG, and MathML, the W3C recommendation for mathematical typesetting on the web.

Connection technology

Other software can readily be incorporated into webMathematica with *MathLink*® technology. It is particularly easy to connect Java into webMathematica with *J/Link*™, providing many exciting possibilities for web development.

Professionally designed web page templates

Included in webMathematica are professionally designed web page templates that let even beginning web designers create appealing websites quickly.

Easy administration

webMathematica takes care of session pooling and failure recovery. Administration and content generation can be separated completely to minimize development and maintenance effort.

For more information, visit www.wolfram.com/webmathematica.

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webMathematica Features

- Based on open web standards
- Works with most servlet containers
- Works with HTML forms, JavaScript, applets, plug-ins, and ActiveX controls
- Supports many formats, including HTML, MathML, SVG, PDF, XML, *Mathematica* notebooks, TEX/LATEX, as well as over 70 data, sound, and image formats
- Supports automatic *Mathematica* session management, including pooling, launching, initialization, and automatic restart
- Allows call-throughs to *Mathematica* front end services such as typesetting and notebook constructions
- Easy configuration, logging, and monitoring
- Supports *Mathematica* call-backs to Java, including direct access to HTTP cookies and headers

General *Mathematica* Features

- Over 1900 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
- Multi-paradigm 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
- User-defined or automatic algorithm selection for optimal performance
- Fully programmable 2D and 3D visualization with over 50 built-in plot types
- High-speed numerical linear algebra with performance equal to specialized numeric libraries
- High-performance optimization and linear programming functions
- Wide-ranging support for sparse matrices
- Flexible import and export of over 70 data, image, and sparse matrix formats
- Highly optimized binary data I/O
- Industrial-strength string manipulation
- Built-in universal database connectivity
- Language bindings to C, Java, .NET, Python, and scripting languages
- All-platform support for 64-bit addressing
- Vector-based performance enhancements
- Support for multi-core processors

Technical Requirements

web*Mathematica* is available for Windows, Mac OS X, Linux, Unix, and compatible systems. For a more detailed list, see **www.wolfram.com/webmathematica/specifications**.

Other Requirements

- Servlet container supporting both the Servlet Specification 2.2 (or higher) and JSP Specification 1.2 (or higher)
- Java Development Kit (JDK) 1.4 (or higher)

Components

- *Mathematica* 5.2
- LiveGraphics3D applet
- web*Mathematica* web application
- web*Mathematica* kernel manager

Purchasing web*Mathematica*

In the U.S. and Canada, you can order web*Mathematica* by calling **1-800-WOLFRAM** (965-3726) or sending email to **orders@wolfram.com**. For international customers, we recommend that you place your order through your local *Mathematica* reseller, listed at **www.wolfram.com/international**.

To request a price quote, please send email to **info@wolfram.com** or complete the information request form at **www.wolfram.com/services/info**. It is helpful if you include your server computer platform as well as your academic, commercial, or governmental affiliation.

For more information, visit www.wolfram.com/webmathematica.

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