Personal supercomputing arrives.

With Mathematica Personal Grid Edition and new cost-effective quad-core computers, personal supercomputing is now a reality. Mathematica Personal Grid Edition eliminates the barriers to using parallelism as part of your daily workflow—with no administrative overhead and no contending for shared resources—and opens the door to new possibilities in high-performance computing. You can easily tackle larger problems and investigate parallel approaches at any stage of the problem-solving process—right at your desk and at your own convenience.

Take advantage of the world’s largest algorithm collection—in one integrated system.

- Integrates thousands of algorithms for numeric and symbolic computation, discrete mathematics, statistics and data analysis, graphics, visualization, and general programming
- Automatic algorithm selection and arbitrary-precision control
- Sustained performance equal to specialized numeric libraries
- Industrial-strength string manipulation, universal database connectivity, web services support, cluster analysis capabilities, and high-speed binary data I/O

Run programs in parallel, increasing computation speed up to four times compared to a standard Mathematica computation.

- Combines the only high-level advanced symbolic programming language with a uniquely productive development environment for parallel applications
- Replaces thousands of lines of Fortran or other legacy code with single commands
- Optimized for all major high-performance 32-bit and 64-bit CPUs
- Machine independent—your code runs on all available platforms
- APIs for C, Java, .NET, Python, and other scripting languages

Application areas include:

- Simulation • Modeling • Numeric and Algebraic Computations • Visualization • Large-Scale Data Analysis • Cryptography

Fields of use include:

- Aeronautics • Astronomy • Bioinformatics
- Chemistry • Drug Research • Engineering • Finance
- Mathematics • Physics • Statistics

For more information, visit www.wolfram.com/personalgrid.
Wolfram Mathematica®
PERSONAL GRID EDITION

Mathematica
Personal Grid
Edition Features

• Parallelization at the Mathematica language level
• Machine independent—user code is completely portable
• High-performance MathLink® communication protocol optimized for all common configurations
• Efficient, adaptive load balancing
• Automatic failure recovery and reassignment of stranded processes
• Automatic or user-programmable scheduling for problem-specific adaptation
• Support for tracing and debugging
• Speculative parallelization for nondeterministic problems
• Data parallelism and general concurrency models
• Virtual shared memory and synchronization

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, and more
• 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 load-on-demand curated data for math, physics, chemistry, finance, geography, linguistics, and more
• 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
• Highly optimized binary data I/O allowing fast import of any binary data
• Integrated web services support
• Language bindings to C, Java, .NET, Python, and scripting languages
• All-platform support for 64-bit addressing

Technical Requirements

Mathematica Personal Grid Edition is available for all common Linux and Unix systems, Windows, and Mac OS X. For a complete list of supported platforms, visit www.wolfram.com/mathematica/platforms.

For more information about technical requirements, visit www.wolfram.com/personalgrid/specifications.html.

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