



v5.5 (2012-12-21) ·

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## Components

These software packages are used by Sage. Go to the [Download Packages](#) page to get them if they are not already part of your Sage installation.

1. [ATLAS](#): Automatically Tuned Linear Algebra Software
2. [BLAS](#): Basic Fortran 77 linear algebra routines
3. [boehm\\_gc](#): The Boehm-Demers-Weiser conservative garbage collector
4. [Boost](#): Free peer-reviewed portable C++ source libraries
5. [bzip2](#): High-quality data compressor
6. [cddlib](#): Double description method of Motzkin et al.
7. [Cephes](#): Cephes mathematical library
8. [Cliquer](#): Routines for clique searching
9. [conway\\_polynomials](#): Frank Lübeck's tables of Conway polynomials over finite fields
10. [CVXOPT](#): Convex optimization, linear programming, least squares, etc.
11. [Cython](#): C-Extensions for Python
12. [Docutils](#): Open-source text processing system for processing plaintext documentation into useful formats, such as HTML or LaTeX
13. [ECL](#): Embeddable Common-Lisp, an implementation of the Common Lisp language as defined by the ANSI X3J13 specification
14. [eclib](#): John Cremona's programs for enumerating and computing with elliptic curves defined over the rational numbers
15. [elliptic\\_curves](#): Cremona's mini tables of elliptic curves
16. [FLINT](#): Fast Library for Number Theory
17. [flintqs](#): William Hart's highly optimized multi-polynomial quadratic sieve for integer factorization
18. [fpLLL](#): Euclidean lattice reduction
19. [FreeType](#): A free, high-quality, and portable font engine
20. [GAP](#): Groups, Algorithms, Programming - a system for computational discrete algebra
21. [gcc](#): GCC, the GNU Compiler Collection
22. [GD](#): Dynamic graphics generation tool

23. [gdmodule](#): A Python interface to the GD library
24. [genus2reduction](#): Curve data computation
25. [Gfan](#): Gröbner fans and tropical varieties
26. [Givaro](#): C++ library for arithmetic and algebraic computations
27. [GLPK](#): GNU Linear Programming Kit
28. [GMP-ECM](#): Elliptic curve method for integer factorization
29. [GNU MPC](#): Gnu Mpc is a C library for the arithmetic of complex numbers with arbitrarily high precision and correct rounding of the result.
30. [GNU patch](#): Applies diffs and patches to files.
31. [graphs](#): A database of combinatorial graphs
32. [GSL](#): The GNU Scientific Library
33. [IML](#): Integer Matrix Library
34. [IPython](#): Interactive computing environment with an enhanced interactive Python shell
35. [Jinja2](#): State of the art, general purpose template engine; awesome version
36. [Jmol](#): Java viewer for chemical structures in 3D
37. [jsMath](#): JavaScript implementation of LaTeX
38. [LAPACK](#): Linear Algebra PACKage written in Fortran
39. [lcalc](#): Michael Rubinstein's L-function calculator
40. [libiconv](#): A library to enable different languages with different characters to be handled properly
41. [libpng](#): Bitmap image support
42. [LinBox](#): C++ template library for exact, high-performance linear algebra computation with dense, sparse, and structured matrices over the integers and over finite fields
43. [lrcalc](#): Littlewood-Richardson Calculator
44. [M4RI](#): A library for fast arithmetic with dense matrices over  $\text{GF}(2)$
45. [M4RI\(e\)](#): A library for fast arithmetic with dense matrices over  $\text{GF}(2^e)$
46. [matplotlib](#): Python plotting library which produces publication quality figures in a variety of hardcopy formats and interactive environments across platforms
47. [Maxima](#): System for manipulating symbolic and numerical expressions
48. [Mercurial](#): Free, distributed source control management tool
49. [MPFI](#): Multiple precision interval arithmetic library based on MPFR
50. [MPFR](#): C library for multiple-precision floating-point computations with correct rounding
51. [MPIR](#): Multiple Precision Integers and Rationals
52. [mpmath](#): Pure Python library for multiprecision floating-point arithmetic
53. [mwrnk](#): Program for computing Mordell-Weil groups of elliptic curves over  $\mathbb{Q}$  via 2-descent. Since November 2007 mwrnk has formed part of the eclib package
54. [NetworkX](#): Python package for the creation, manipulation, and study of the structure, dynamics, and functions of complex networks
55. [NTL](#): A library for doing number theory
56. [NumPy](#): Package for scientific computing with Python

57. [PALP](#): A package for analyzing lattice polytopes
58. [PARI/GP](#): computer algebra system for fast computations in number theory
59. [Pexpect](#): Pure Python module that makes Python a better tool for controlling and automating other programs
60. [PIL](#): Python Imaging Library
61. [PolyBoRi](#): Polynomials over Boolean Rings
62. [polytopes\\_db](#): Reflexive Polytopes Databases that include lists of 2- and 3-dimensional reflexive polytopes
63. [PPL](#): The Parma Polyhedra Library (PPL) provides numerical abstractions especially targeted at applications in the field of analysis and verification of complex systems.
64. [PyCrypto](#): The Python Cryptography Toolkit
65. [Pygments](#): Generic syntax highlighter
66. [Pynac](#): Symbolic computation with Python objects
67. [Python](#): The Python programming language
68. [R](#): A free software environment for statistical computing and graphics
69. [Ratpoints](#): Find rational points on hyperelliptic curves
70. [Readline](#): The GNU Readline library provides a set of functions for use by applications that allow users to edit command lines as they are typed in
71. [RPy](#): Simple and efficient access to R from Python
72. [Rubik](#): Optimal Rubik's cube solver
73. [SageNB](#): The Sage Notebook server
74. [SageTeX](#): The SageTeX package allows you to embed code, results of computations, and plots from the Sage mathematics software suite into LaTeX documents
75. [SciPy](#): Scientific tools for Python
76. [SCons](#): An open source software construction tool
77. [setuptools](#): Download, build, install, upgrade, and uninstall Python packages -- easily!
78. [Singular](#): Computer algebra system for polynomial computations, with special emphasis on commutative and non-commutative algebra, algebraic geometry, and singularity theory
79. [Sphinx](#): A tool that makes it easy to create intelligent and beautiful documentation
80. [SQLAlchemy](#): Python SQL toolkit and Object Relational Mapper that gives application developers the full power and flexibility of SQL
81. [SQLite](#): Software library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine
82. [Symmetrca](#): Collection of C routines for representation theory
83. [SYMPow](#): Package to compute special values of symmetric power elliptic curve L-functions
84. [SymPy](#): Python library for symbolic mathematics
85. [Tachyon](#): Parallel/multiprocessor ray tracing system
86. [Termcap](#): Simplifies the process of writing portable text mode applications
87. [zlib](#): Data compression library
88. [zn\\_poly](#): C library for polynomial arithmetic in  $\mathbb{Z}/n\mathbb{Z}[x]$

89. [ZODB](#): Native object database for Python

Something missing? Email the webmaster.

