

WITH THE LINDO API, YOU CAN EASILY CREATE YOUR OWN OPTIMIZATION APPLICATIONS. IT ALLOWS YOU TO PLUG THE POWER OF THE LINDO SOLVERS RIGHT INTO CUSTOMIZED APPLICATIONS AND MATHEMATICAL PROGRAMS THAT YOU HAVE WRITTEN.

## KEY BENEFITS OF THE LINDO API

- Fast, Easy Application Development
- Powerful Solvers
- Stochastic Programming Features
- Comprehensive Set of Routines
- Convenient Interface to MATLAB
- Extensive Documentation and Help
- Analyze Infeasible and Unbounded Models
- Create Web and Intranet Applications
- Model Size Flexibility



## NEW FEATURES IN LINDO API 9.0

Release 9 of LINDO API includes a wide range of performance enhancements and new features:

- Simplex LP algorithm speed and robustness improvements.
- New preprocessing for LP/IP to significantly reduce coefficient density of certain dense LP matrices.
- Knapsack related cuts improvements. Significantly faster solve times on models with certain knapsack-like constraints.
- Improved default node selection rules improves performance on most MIP's.
- New branching variable rule options: maximum coefficients and neighborhood branching. Can reduce number of branches on certain MIP's.
- Perspective reformulation capability gives improved performance on quadratic portfolio models with semi-continuous variables, e.g. min-buy quantities.
- Improved default settings for NLP's gives 5% average speed improvement.
- Faster processing of long nonlinear expressions in NLP's, e.g., 1000's of terms as found in nonlinear regressions with 1000's of observations.
- Global solver supports more functions, e.g., cdf and inverse cdf of distributions such as Normal, Cauchy, exponential, logistic, and more.
- Semi-Definite Program (SDP)/Positive Definite (POSD) support, including integer variables, e.g., if estimating a covariance matrix for a portfolio, can add constraint that matrix be positive semi-definite.
- Quadratic repair feature for near-convex Quadratic Programs (QP). Gives improved performance on not quite convex QP's.
- Sparse Cholesky factorization and related linear algebra utility functions added to the API and can now be called for general use.
- LScomputeFunction( ) provides a single interface for directly calling most of the 150+ math functions in API operator library.



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TStat S.r.l. DISTRIBUTTRICE ESCLUSIVA DI LINDO API PER L'ITALIA  
Via Rettangolo, 12-14 - 67039 Sulmona - I'Aquila Tel. 0864 210101 Sito [www.tstat.it](http://www.tstat.it) - e-mail [tstat@tstat.it](mailto:tstat@tstat.it)