GAMS

Modeling for the Real World

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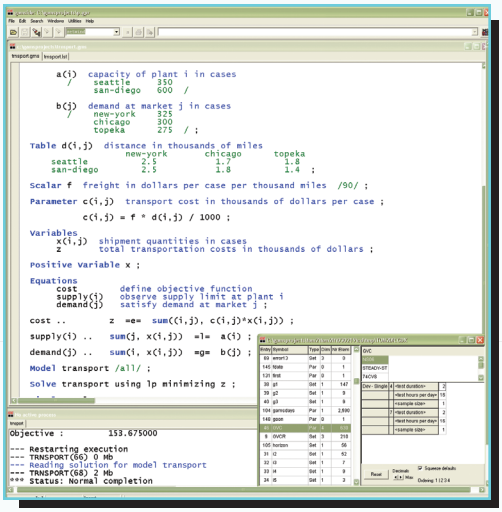
High-Level Modeling

The General Algebraic Modeling System (GAMS) is a **high-level modeling system** for mathematical programming problems. GAMS is tailored for complex, large-scale modeling applications, and allows you to build large maintainable models that can be adapted quickly to new situations. Models are **fully portable** from one computer platform to another.

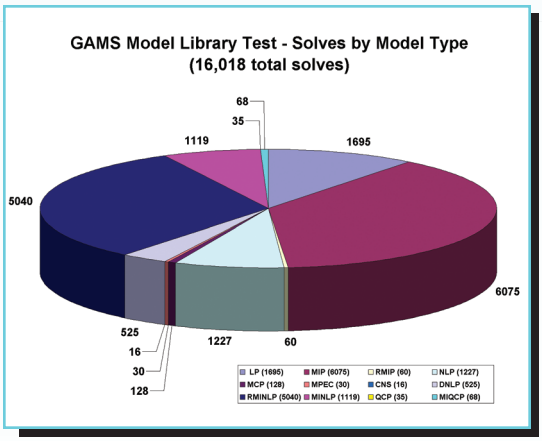
Multiple Model Types

GAMS allows the formulation of models in **many different problem classes**, including

- Linear (LP) and Mixed Integer Linear (MIP)
- Nonlinear (NLP) and Mixed Integer Nonlinear (MINLP)
- Mixed Complementary (MCP)
- Programs with Equilibrium Constraints (MPEC)
- Stochastic Linear Programming (SP)
- Constrained Nonlinear Systems (CNS)
- Conic Programming Problems



GAMS Integrated Developer Environment for editing, debugging, solving models, and viewing data.



GAMS QA Testing Activities - Solve aggregation by model type for GAMS Model Library models.

Quality Assurance

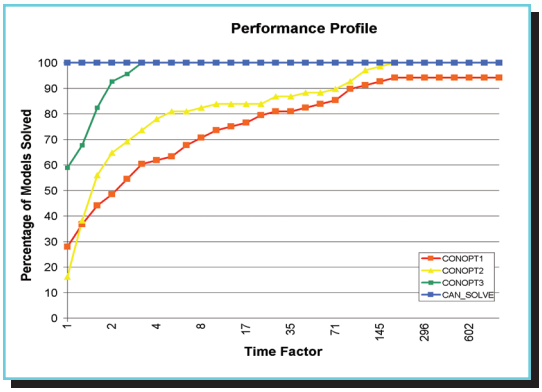
GAMS maintains **rigorous quality assurance standards**, which includes extensive model testing to ensure high quality software. For example, our testing of models from the GAMS Model Library includes **over 16,000 solves**, using all solvers and possible combinations of solvers and all supported model types.

Furthermore, we perform client model testing to ensure that client models solve as expected using new GAMS releases. For details, please contact support@gams.com.

Performance Testing

Performance is important for many client models, especially those for real-time systems. GAMS provides public **tools for automated performance analysis and testing**. See the public domain collection of models and tools in the GAMS World www.gamsworld.org.

The tools were used to verify performance increases in CONOPT3 with respect to previous versions using a client test set.



QA Performance Testing: Improvement of CONOPT3 over previous versions on a client test set of 68 models.

Contact:

GAMS Development Corporation

1217 Potomac Street, N.W.

Washington, D.C. 20007, USA

Tel.: +1-202-342-0180

Fax: +1-202-342-0181

sales@gams.com

http://www.gams.com

in Europe:

GAMS Software GmbH

Eupener Str. 135-137

50933 Cologne, Germany

Tel.: +49-221-949-9170

Fax: +49-221-949-9171

info@gams.de

http://www.gams.de