

➤ OPTIMIZATION

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GAMS

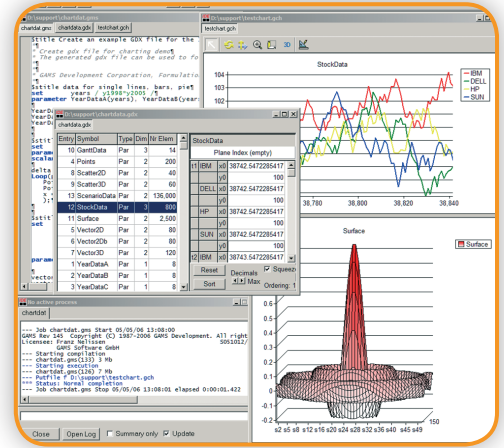
High-Level Modeling

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.

Wide Range of Model Types

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

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



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

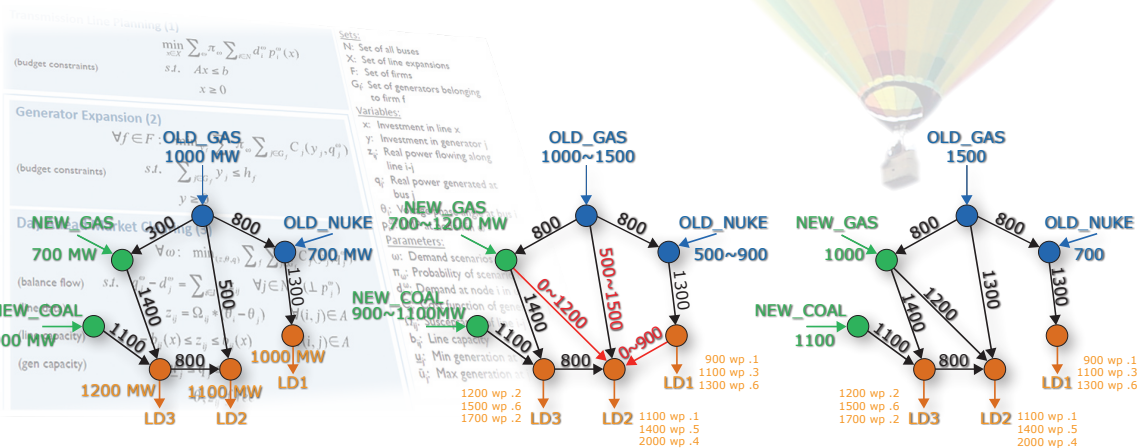
State-of-the-Art Solvers

GAMS incorporates all major commercial and academic state-of-the-art solution technologies for a broad range of problem types, including global nonlinear optimization solvers.

GAMS/EMP - An Extended Mathematical Programming Framework

EMP couples existing model structures and types with user-provided annotations specifying new or extended structures and relationships. The EMP solver expresses the extended model in standard symbolic form and builds on existing mature solution technology. It is part of the current GAMS distribution and supports many problem classes, including:

- extended nonlinear programming (e.g. soft penalization of constraints)
- embedded complementarity systems
- hierarchical models (e.g. bilevel programs)
- variational inequalities
- disjunctive programming and logical constraints
- stochastic programming and risk measures



For more information about EMP please visit: <http://www.gams.com/emp>

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