

Support

Sales

Solvers

Documentation

Model Library

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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.

A 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

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.

```

b(j) demand at market j in cases
new-york 325
chicago 300
topeka 275 ;

Table d(c,i,j) distance in thousands of miles
seattle new-york chicago topeka
san-diego 2.5 1.8 1.4 ;

scalar f freight in dollars per case per thousand miles /90/ ;
parameter c(c,i,j) transport cost in thousands of dollars per case ;
c(c,i,j) = f * d(c,i,j) / 1000 ;

Variables
x(c,i,j) shipment quantities in cases ;
Positive variable x ;

Equations
cost define objective function
supply(i) observe supply limit at plant i
demand(j) satisfy demand at market j ;
cost .. z = sum(c(i,j), c(i,j)*x(c,i,j)) ;
supply(i) .. sum(c, x(c,i,j)) =w= a(c,i) ;
demand(j) .. sum(c, x(c,i,j)) =w= b(c,j) ;
Model transport /all/ ;
Solve transport using lp minimizing z ;

```

```

Plant 3 153.675000 x(san-diego,topeka) demand(topeka) s
4 153.675000 x(san-diego,new-york) supply(seattle) s
Optimal solution found
Objective 153.675000
--- restarting execution
--- transport.gms(88) 1 MB
--- loading solution for model transport
--- transport.gms(88) 3 MB

```

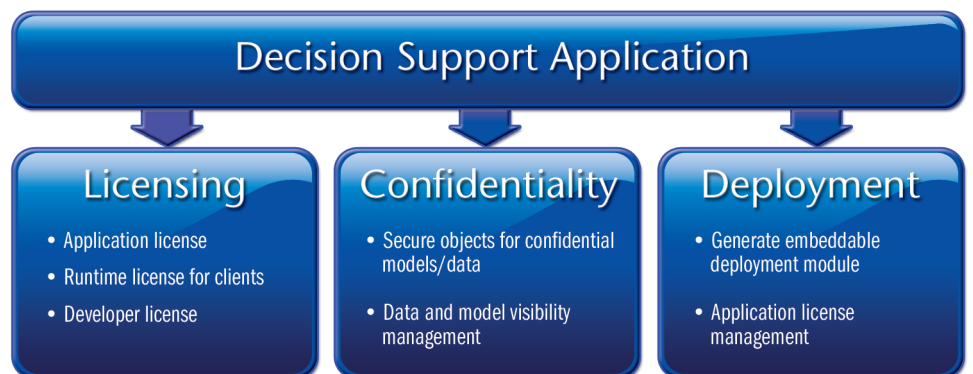
GAMS Integrated Developer Environment for editing, debugging, solving models, and viewing data.

Application Development

We understand the complexity of developing decision support applications. GAMS simplifies the process by integrating tools which take care of

- Licensing
- Confidentiality
- Deployment

Optimization models developed with GAMS can easily be integrated into other applications having GUI front ends, interconnect with databases and utilize graphical data analysis routines. Furthermore, GAMS has been used successfully in web-based implementations for distributed applications.



GAMS incorporates tools to make the development of end-user customer decision support applications as simple as possible: from licensing, to handling confidentiality issues (data and model) to actual deployment, GAMS helps you to be more productive.