The GAMS Base module includes the GAMS language compiler and execution system, GAMSIDE (Windows), system documentation, model libraries, CONVERT tools, UNIX and GDX utilities, connectivity tools and API’s, COIN-OR, GUSS, LOGMIP, JAMS, MILES, NLPEC, and all other solvers in limited versions.
General Algebraic Modeling System (GAMS)

The General Algebraic Modeling System (GAMS) is a high-level algebraic modeling system for large scale optimization.

**Key Features**
- Robust, scalable state-of-the-art modeling technology
- Tailored for complex, large-scale modeling applications
- Productivity gains through rapid development environment
- Broad academic and commercial network
- 30+ years of experience in industry and academia

**System Overview and Features**

The modeling and optimization framework is based on an **open architecture**, which allows **seamless communication** with integrated components (e.g. optimization solvers) and external systems.

GAMS applications are **fully portable** across platforms (including Windows, Linux, Mac OS X, AIX, Solaris, ...).

GAMS provides a one-of-a-kind solver portfolio with **all major commercial and academic state-of-the-art solvers** and also solvers for **stochastic and global optimization**.

**Basic Model Types**
- Mixed Integer Linear/Quadratic Programs (MIP/MIQCP)
- Mixed Integer Nonlinear Programs (MINLP)
- Mixed Complementarity Problems (MCP)
- Mathematical Programs with Equilibrium Constraints (MPEC)
- Constrained Nonlinear Systems (CNS)
- Extended Mathematical Programming (EMP)

**Interfaces and Connectivity Tools**
- Interactive and batch oriented model execution
- Distributed execution (Grid computing)
- Data exchange with DBMS, MS-Office, Matlab, ...
- Component library with interfaces to C++, Java, .NET, Python...

**GAMS' open architecture** assures a **smooth integration of optimization models** into all kinds of application environments.

**Productivity Tools**
- Model development with the integrated development environment (GAMSIDE)
- Integrated data browser and charting engine
- Profiling tools for performance issues
- Data and model encryption
- Grid computing
- MPSGE for general equilibrium modeling
- Extensive application model library (> 380 models!)
- Additional model libraries: Datalib, EMPlib, FINlib and Testlib
- Benchmarking and deployment tools
- EMP - a framework for automated mathematical programming reformulations
- Scenario Solver (GUSS)

GAMS is dedicated to **performance and reliability**. We started www.gamsworld.org and our own software quality assurance program to address and improve the quality of the GAMS system and the integrated optimization solvers.

**Software Quality Assurance**
- Solver testing
- Extensive test model library for GAMS language
- Client model testing
- Transparent and reproducible for any GAMS user

A **free demo version** of GAMS with all solvers is available at: http://www.gams.com/download