Bruce McCarl's GAMS Newsletter Number 21

McCarl User's Guide

I recently updated the McCarl Guide to be compatible with version 22.4 of GAMS. This document will be distributed with GAMS systems 22.5 and newer. For the time being a pdf copy is available. All of the new GAMS and IDE features below are discussed in this document.

GAMS user guide

GAMS Corporation has recently been introducing appendices on recent features into the otherwise almost 10 year old User Guide available over the web or though IDE help. Readers may want to see the appendix coverage on (a) File compression and encryption, (b) GDX facilities and utilities, and (c) Grid Computing.

Compressed and Encrypted Input Files

GAMS has developed features to allow one to compress and encrypt input files using new commands $COMPRESS, $DECOMPRESS and $ENCRYPT. Encrypting requires a special license. The new McCarl guide reviews use of these features as does Appendix I of the Users Guide.

New language commands

GAMS now includes

- A Nonnegative variable modifier,
- New workspace specification through the GAMS parameter Workspace
- A GDX load with domain checking ($Loaddc),
- New functions arccos, arcsin, tan, arctan2, binomial, and GamsVersion.
- Several functions associated with Grid computing - HeapFree, HandleStatus, HandleDelete, HandleSubmit, HandleCollect and Sleep(sec) – more below.

The GAMSIDE contains

- A utility for solver option files including documentation access.
- Improved GDX file viewing, sorting and searching.
- Some features for graphing data from GDX viewers which exhibit flashes of great potential but have some major shortcomings so I have not explored them deeply.
- A scripting or macro capability – see below.
- A Find in Files that allows you to work in the files with the search window.
- A spell checker activated through a right click in the edit window.

In addition more models were put in the model and test libraries.

Solvers

The releases 22.3-22.4 contains new versions of BARON, CoinGlpk, CoinCbc, CONOPT, CPLEX, KNITRO, MOSEK, PATH, SNOPT, XA and XPRESS plus a new CoinIpopt interior point NLP solver. The changes are overviewed in the release notes.

GAMS Grid Facility

The GAMS language has been extended to manage the submission of multiple independent jobs to multiple CPUs and Computing Grids then collect their solutions see the McCarl Guide on Grid Computing or www.gams.com/docs/gridcomputing.htm

GDX file Compression and Backward Compatibility

GDX files can now be compressed and are not backward compatible with versions of GAMS before 22.3. The utility gdxcopy permits translation.

IDE list file navigation

The IDE contains a LST file navigation window. To find out where a LST file entry is in that window locate the cursor in the LST file and press control click.

IDE Scripting / Macros

For years I have felt it would be desirable to have a macro like facility to run several linked jobs in the IDE when one is away. This can be done through call and execute but a new feature in the IDE called scripting holds promise. One can record scripts through the **utilities>script** menu. The running of these is a little awkward as of now but is workable and perhaps this will develop.

Courses offered

I teach

Basic GAMS June 4-7, 2007 in the Colorado mountains at Frisco (near Breckenridge). The course is designed for those without GAMS usage experience but has also proved useful for those with up to a years experience.

Advanced GAMS class August 6-9, 2007 in the Colorado mountains at Frisco (near Breckenridge). The course covers such diverse topics as links to other programs like spreadsheets, speeding up GAMS, scaling, debugging, improving output and advanced basis use along with many other topics.

Further information and other courses are listed on http://www.gams.com/courses.htm.

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