Bruce McCarl's GAMS Newsletter Number 6

More than one Solver Version for popular Solvers

I note when I call up the solver list in the IDE that we have MINOS, MINOS5, CONOPT, CONOPT2, PATH, PATHC, PATHNLP, CPLEX, CPLEXPAR, OSL, OSL2, OSLSE and some others. Let me spend a few words clarifying what all this is. Each of these depicts either a newer version of a solver or a version with different capabilities. When more than one version is available and one is newer than the other the reason for keeping the older is, that there are some problems that the older version works better for. In particular

- CONOPT2 is newer than CONOPT but sometimes CONOPT is better.
- MINOS is newer than MINOS5 but sometimes MINOS5 is better.
- OSL2 is newer than OSL but sometimes OSL is better for integer programs.
- OSLSE is the stochastic extension of OSL for stochastic programs with recourse.
- CPLEXPAR is a parallel processor version of CPLEX for use on machines with more than one CPU.
- PATHC is PATH with a preprocessor but which does not support MPSGE applications.
- PATHNLP takes a GAMS NLP, forms a complementary problem, and applies PATH to it. It works best for large problems with many (10-100K) degrees of freedom and nonlinear variables, as many other solvers will hit a superbasics limit on these.

Notes on use of most of these appear in the Solver manuals.

Coming soon GAMS 20.1 a new release

A release of GAMS will appear that has GAMS to other language converters, beta test data security features, CPLEX 7.1, beta test Global optimization solvers, PATHNLP, and new model library entries. I have a newsletter written on these features that will be sent out when the release is available.

Interactive Graphics

A topic of interest to some is likely to involve the use of graphics routines, which may be used to display output directly from a GAMS file. Tom Rutherford originally developed such a capability using GNUPLOT http://debreu.colorado.edu/inclib/tools.htm and Uwe Schneider and I developed a related package that allowed more easy plotting of XY graphs http://agecon2.tamu.edu/people/faculty/mccarl-bruce/gnuplot/gnuplot.html. I developed a set of notes http://www.gams.com/mccarl/graphgams.pdf illustrating use of Schneider and McCarl's GNUPLTXY directly from GAMS. The upstart of this is that by inserting a couple of commands in a GAMS program on a windows machine you can get a graph developed and displayed during any PC GAMS run. It will also work on XWINDOWS under LINUX with a little modification.

Courses offered

I teach Basic GAMS in College Station, Texas November 5-8, 2001 (note this is a change from the earlier announced time) and Advanced GAMS in Texas in January 7-10, 2002. Further information and other courses are listed on http://www.gams.com/courses.htm.

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