

CPLEX and Beyond

Tim Magee
CADSWES

CPLEX Overview

- Produced by ILOG
- Callable Library
 - Using only Simplex algorithm for Linear Programming.
- Robust, fast, well supported, and solid future.
- Prices are rising out of control!!!
 - Still worth it for large models.
 - Too much for small models, model development, and opt/rules.

Requirements for Alternatives

- Callable library
 - C or C++ primal or dual simplex code.
 - Similar interface for the features we use.
- Robust on small problems.
- Well supported & good future prospects.
- Free or low cost.
- Windows XP and Solaris (and pref. LINUX).
- Not necessarily fast.

Open Source

- CLP – part of the COIN-OR project, non-profit initially sponsored by IBM, relatively new.
- GLPK – GNU Linear Programming Kit.
- lp_solve – well established, Version 5.1
- Mailing lists for questions, bug reports, etc.
- Generally, require some payment for commercial use.

Commercial Alternatives

- LINDO API \$395-3995
- MOSEK
- XLSOL – Frontline systems \$995-4995
- XPRESS-MP Dash Optimization \$5995
- XA – Sunset Software

Summary

- CPLEX is still valuable for large problems.
- Three open source codes seem promising.
- Most established commercial codes are expensive.
- Worth a deeper investigation.