True Hardware Independence
Solver Independence: What Is It?

- Separation of models and their solution methods
- Depends on both models and solution methods
- Model requirements
  - Use “typical” forms (e.g. hard vs. soft contraints)
  - Avoid “non-standard” parts (e.g. semicont vars)
- Solver requirements
  - Accept “typical” forms
  - Don’t implement “non-standard” parts
- Hardware/OS independence: running everywhere
- Data Independence
A GAMS link: perfect solver independence

GAMS Models (binary version)

Solver Link

Solver XYZ
Soapbox Slide

• What works
  – COIN/OSI
  – Inheritance & callbacks
  – Extensive testing
• What doesn’t work – adding it in at the end
• Pleasures
  – A perfect fit
  – IPOPT inheritance
• Annoyances
  – Untested solver independence