What's New

In Inforum Software

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It's time again to give you an update on changes in Inforum software over the last year. Like last year at Bertinoro, we're giving out CDs that include latest versions of the software, the Borland and GNU free compilers, and several other items.

What's on the CD

Before going into the details of software changes over the course of the year, let's take a moment to understand what's on the CD. The main directory structure is:

- INSTALL - Below this directory are several subdirectories. Each one (SLIMDYME, BC45, BC55, QUEST, etc.) contains a file SETUP.EXE that can be run to install the software easily on your hard disk. We've used the *InstallShield* software to make the installation of these items relatively painless. If you've installed much Windows software, you are already familiar with the *InstallShield* approach. Besides ease of use, another advantage of *InstallShield* is that the software can be easily uninstalled, using Add/Remove Programs icon in the Control Panel.
- SLIMDYME - You can find DYMEV26.ZIP here, as well as some earlier versions.
- DOC - We've put here the new *G Reference*, the *Overview of Interdyme*, this *What's New* as well as the older ones, the INTERDYME manual, as well as documentation in .PDF format of *Compare*, *VamToG*, *Vam2Vam*, *Banker*, *Press*, *Splice* and *123ToG*. You can also find the most recent Inforum/MD dissertation by Dan Wilson (WILSON.PDF), entitled *Capital Embodied Technological Change*. There are several other papers here from the Inforum working papers web site: Clopper's PADS paper (PADS.PDF), *Can Investment Change Trade Patterns?*, by Almon & Grassini (LEONBOOK.PDF), *A Brief Guide to C and C++ for FORTRAN Programmers* (CPPLESNS.PDF) and *Scientific Programming with Borland C++ Builder* (BUILDERINTRO.PDF). Two sessions of a seminar we gave as an Introduction to the *IdLift* model are in the files LIFTINTRO1.PDF and LIFTINTRO2.PDF. Finally, in the directory \DOC\CRAFT are the parts of *The Craft of Economic Modeling*.
- PDG - This directory contains current versions of Inforum software, as well as the files needed to build a model with *G/Build*, such as the *QUEST* model of the U.S.
- QUEST - This directory contains a complete and current version of *QUEST*, used to illustrate the model optimization techniques discussed in Clopper's paper.
- G7 - Source code and help source files for *G7*.
- DYME - Source code for *Fixer*, *Macfixer* and *IdBuild*.
- BC45 - Zip files that can be used to build a working Borland C++ 4.5 installation.
- DJGPP - Zip files that can be used to build a working GNU C++ installation.
- UTIL - Miscellaneous utility programs you may find useful.
- BEERSHEBA - A slide show from Clopper's old Tennessee home.

New Features of Interdyme (Version 2.6)

Since the version of last summer (2.51), most of the changes in Interydme have been bug fixes, making the modeling framework much more bullet proof. Portability has also been improved. Models in Interdyme have now been made to run under Borland C++ 4.5 (with or without DOS Extender), Borland C++ 5.5 (free version), Borland C++ Builder versions 1 to 4, DJGPP (free GNU compiler for

DOS/Windows environment), and the GNU C/C++ compiler for Linux. (Would somebody like to volunteer with another compiler?)

New Features In G7 (7.35)

- A *G Reference Manual* has been compiled that covers both *G7* and *G6 for DOS.* It is included in the DOC directory of the CD.
- Add @diff() and @dlog() functions. @diff can be abbreviated @d(). These take the first difference, and the first difference in logs (growth rate).
- Changed "dvam" command so that it can be given without a letter. In this case, it finds the lowest letter in the alphabet that has a Vam file opened on it, and assigns that as the default. "dvam" also provides information about which is the current default, when no letter is given.
- Added the "vammode" command, which lets you treat the Vam file and G bank from an Interdyme simulation as a combined bank, if you like. The calling format is:

  ```
  vammode < s | a>
  ```

  where 's' indicates "simple" mode and 'a' indicates "advanced" mode. In simple mode, using the "vam command opens up the Vam file only. In advanced mode, the G bank and the Vam file are opened as a unit. This allows you to graph or type macrovariables from what looks to *G* like the same bank. Note that "vammode" is 's' by default, so you may want to put "vammode a" in your INIT.ADD file.
- The "ipch" command now allows you to add extra parameters. The new calling format of "ipch "is:

  ```
  ipch [<which>] <label> <sector> [<type>] [<psn1>]...[<psnN>] [“extra” [var1] [var2]
  ... [varN] ]
  ```

  To use this feature, give the "ipch" command just as you would have done before. At the end of the command, type the word "extra" (without the quotes), and then type several variable names that hold the values of extra parameters you would like to pass to the file. For example, for an investment equation, which calculates capital stocks, and replacement investment, a physical service life is needed to calculated the spill rate. The following code would write the physical life at the end of the parameter list:

  ```
  f plf1 = 4.9
  r eqi1 = out1, out1[1], out1[2]
  ipch eqi 1 a extra plf1
  ```
- The @pow() function has been modified so that it can take variables or expressions for either argument. It used to take only integers, and you had to use a combination of @exp() and @log() to form an arbitrary exponential expression.
- In addition to the color numbers written by the Graph, Settings command, you can now use named colors in the "line" command for *G7* graphs. Remember, this is the calling format for the "line" command:

  ```
  line <linenumber> <color num | name> <thickness> <mark> <style> <barfill> <left>
  <right>
  ```

  See the new *G Reference Manual* for the full help for "line" command.

- Added "width" and "decs" commands for controlling field width and decimal points in various print commands, including "ty" and "matty".
- Added one-character abbreviations for several commands (I'm a lazy typist!): 'a' = "add"; 'b' = "bank"; 'c' = "cbk"; 'd' = "decs"; 'e' = "edit"; 'g' = "graph"; 'h' = "help"; 'l' = "look"; 'p' = "print"; 's' = "show"; 't' = "type"; 'v' = "vam"; 'w' = "width".

- Added the "intvar" command which is used in model optimization.
- Various changes were made in certain dialog boxes to incorporate model optimization.
- Added the "intvar" command for work with optimization.
- Added "optimize" and "stochastic" options on the Model, Run menu.
- Bug Fixes: See the file G7REV.TXT if you are interested to see if your bug is fixed.

To install the latest version of *G7*, run the SETUP.EXE file in the \INSTALL\G7 directory on the CD. This uses the *InstallShield* program to make for a relatively easy install.

News about G6 (6.44)

In case you didn't realize it, *G6* for DOS is alive and well! It is not really a direct descendant of the old *G* version 6.2, but more like a brother of *G7*, combining the features of the older *G* and *Vam* programs, and much more. *G7* now has a total of 161 commands, *G6* has 157. Of these, 150 work exactly the same in both versions. (Commands in *G7* that are either not present or work differently in *G6* are "cwd", "smf", "close", "clear", "gidmake", "gname", "gsave", "gprint", "gridty", "showt" and "intvar". Commands in *G6* that are not present in *G7* are "color", "display", "printer", "maxobs", "mem", "tcolor" and "wsinfo".) We're continually working to make these two fine programs command-line compatible with each other.

To get and install *G6*, get the files G64.ZIP and BGI.ZIP from the \G64 directory on the CD. Unzip G64.ZIP into your \PDG directory. Create a \PDG\BGI subdirectory, and unzip BGI.ZIP into that subdirectory. Make sure that \PDG is on your PATH. (Or if you like, install all the Inforum software using the SETUP.EXE program in the \INSTALL\PDG subdirectory on the CD. That's much easier!)

G6 help now uses Borland Turbo Vision, which is a windowing system for console mode programming. To use the "edit" command in *G6*, make sure that your favorite editor is on your path, and copied to ED.EXE. I highly recommend the *FTE* editor for DOS console editing, and have included it on the CDROM, in the \UTIL directory. Other editors and utilities are there as well. The *FTE* editor is available for DOS/Windows, Linux and OS/2, works almost exactly the same in each OS, and provides syntax highlighting, bookmarks, folding of code, block indenting, and many other handy features.

New Features in Compare (6.571)

Compare is now a mature program, and few changes were made this year. One new feature is the "\rtf" command, which we have just started to develop. The idea is much like the "\wk1" command. When you give the "\rtf" command, that indicates the the output should go into an .RTF file. If you are not familiar with RTF, it is a very portable file format for word-processing. At present, giving the "\rtf" command simply creates a basic output file, in lineprinter font. However, many features are potentially available with this format, including:

- Use of different fonts and different size fonts for headers and titles.
- Headers and footers.
- Automatic page numbering.
- Inclusion of bitmaps such as logos, etc, at the top of the page.
- Page borders, such as boxes or lines.

Your suggestions are welcome. For ideas, you may want to refer to the *RTF 1.5 Specifcation*, which can currently be found at http://www.cena.dgac.fr/~sagnier/info/formats/rtf/rtfspe15.htm.

Slimdyme Distribution, Version 2.6

The main progress from from version 2.51 to 2.6 has been dozens of bug fixes, and an increase in portability. You can now choose from 6 different compilation environments:

1. Borland C++ 4.5 (Traditional Real Mode DOS, limited memory)
2. Borland C++ 4.5 with DOS Extender (up to 16 Mb of memory)
3. Borland C++ Builder, versions 3 and 4 (full 32-bit environment)
4. Borland C++ 5.5 (32-bit environment, free compiler)
5. Delorie GNU C++ (32-bit Unix like environment, open source)
6. Linux GNU C++

The Slimdyme 2.6 distribution is in the file DYMEV26.ZIP in the \SLIMDYME directory of the CD ROM. To install it, simply create the directory \SLIMDYME on any drive, copy DYMEV26.ZIP to that directory, and unzip the file there. (If you don't have a version of pkunzip available, there are several alternatives included in the \UTIL directory of the CD, including UNZIP32.EXE, which is ported from Unix, and compiled using DJGPP.)

For each of the DOS environments in the above list, a batch file named ALLx.BAT is present, where 'x' is the number in the list. For example, to compile, link and run the model using DJGPP, use ALL5.BAT. The batch files are actually good tests to see if your compiler is installed correctly. If the Slimdyme model doesn't compile, try running the make file to compile and link it outside of the batch file first.

Last year's *What's New* had a section at the end entitled "How to Upgrade an Existing Interdyme Model to Version 2.51". That advice still applies to version 2.6, so I refer you to that paper on the CD. Here are the current versions of Inforum software you should be using with Interdyme 2.6:

Macfixer version 1.62

Fixer version 1.8

IdBuild version 5.83

G7 version 7.35

G6 version 6.442