MultiExtLib: Multi-External Function Library Manager for Vensim™

Overview

The MultiExtLib converts Vensim's standard external function library capability into a plugin architecture, permitting simultaneous use of more than one library. This makes it easy to use libraries from a variety of sources and to keep functions addressing a particular topic compartmentalized in separate projects.

The library was developed by Tony Kennedy at Ventana Systems UK, with a little help from Tom Fiddaman at Ventana Systems, Inc.
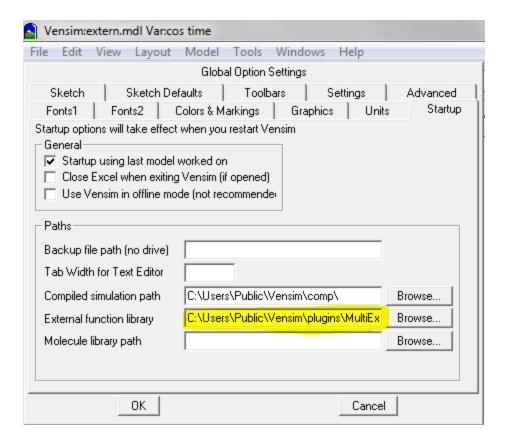
http://www.ventanasystems.co.uk/

http://ventanasystems.com/

https://www.vensim.com/

Installation and Usage

1. Create a "plugins" directory in a convenient location. We recommend the standard Vensim installation path, e.g. C:\Users\Public\Vensim on Windows 7. (This is where you will find the \comp and \dll directories, help system and sample models.)
2. Place the MultiExtLib.dll in the plugins directory. You can either use the binary .dll files supplied, or compile the library yourself (see next section). The latest library will generally be available at http://www.vensim.com/workbench .
3. Place any other libraries you plan to use in the plugins directory alongside the MultiExtLib.
   a. If you want to selectively enable libraries, you can create a "disabled" subdirectory within plugins, and move libraries in and out as needed. The MultiExtLib will only search the root level of the plugins directory.
   b. You can include both single and double precision versions of libraries in the same directory – MultiExtLib will compare versions and not load any mismatched directories. (SP libraries have version 51050, while DP libraries are 51051.)
   c. MultiExtLib checks for function namespace conflicts (functions in different libraries with the same name). It resolves these by appending the name of the library file to subsequent instances of duplicate function names.
4. Point Vensim at the MultiExtLib.dll, using Tools>Options>Startup:

5. After an Open/Close model cycle, Reform & Clean, or quit/restart of Vensim, your functions will be available.

At runtime, MultiExtLib delivers relatively few warnings to Vensim. Warnings from client libraries are also passed through. Be sure that Warnings are set to Display on Tools>Options>Settings if you need to see these. More information is written to a text file, MultiExtLib.dll.log, which you can inspect if you're seeing errors.

Adapting & Improving the Library

Source code for the library is provided under the Apache 2.0 license, a permissive Open Source license, so that you may adapt it to your own purposes or improve its features. We welcome submissions. If you plan to do some work on the library that you would like to share, let us know in advance and we can set up a source code repository.

The source code provided includes a Microsoft Visual Studio 2010 project. For testing, you can use a copy of the sample external function library from the standard Vensim distribution (extern.mdl and venext6.dll, in the comp directory).

Note that there is a dependency on HPSLIB, Copyright (c) 2007, AlpineSoft http://www.alpinesoft.co.uk , provided in the ezutf_src directory, which is licensed under the LGPL. The LGPL and Apache licenses are not strictly compatible. In order to comply with the LGPL, we have provided a way to build the

MultiExtLib.dll without HPSLP by defining the NOLOG preprocessor macro, after which the ezutf_src directory may be removed, and standard C fprintf() or similar may be substituted for the missing functionality if needed.

http://www.apache.org/licenses/LICENSE-2.0

http://www.gnu.org/copyleft/lesser.html

Support

Strictly speaking, this is unsupported software, and neither Ventana nor Ventana UK assumes any liability or provides any warranty or support. However, we are happy to entertain questions and suggestions in the Vensim forum, http://www.ventanasystems.co.uk/forum/viewforum.php?f=2 , and we will endeavor to be as helpful as we can.

If you need support or extensions for mission critical work, Ventana or Ventana UK may be able to undertake that as a consulting project.

License

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