SYNOPSYS®

SmartModel Library Release Notes

March 2002

Contents

Release Notes

Introduction

This document contains information about the following topics:

For general information about SmartModel Library documentation, or to navigate to a different online document, refer to the *Guide to SmartModel Documentation*. For information about which platforms, operating systems, and simulators support SmartModels and FlexModels, refer to *SmartModel Library Supported Simulators and Platforms*.

What's New?

These release notes are frequently updated to keep you informed about important changes in the SmartModel software or alert you to issues and workarounds that you should know about. If you want to focus on just the information that is new or noteworthy, use this section as your guide.

Migration of Cyclone and VSS Users to Scirocco

As of September 24, 2001 Synopsys has informed Cyclone and VSS customers of the Synopsys plan to migrate to Scirocco and obsolete Cyclone and VSS.

swiftpli Shared Libraries for Verilog

Synopsys now ships the LMTV PLI application and other interface code in the form of swiftpli shared libraries (.so, .sl, or .dll) for Verilog-XL, NC-Verilog, and MTI Verilog on all supported platforms. With these new shared libraries there is no need to build a new Verilog executable or a libpli. Just point your load path variable to the platform-specific directory in $LMC_HOME and use a switch on the simulator invocation line to specify the swiftpli. Changes to the LMTV interface will now get picked up automatically whenever you update your model installation. For more information, refer to the *Simulator Configuration Guide for Synopsys Models*.

SmartModels on Linux

SmartModels (including FlexModels) are now available on the Red Hat Linux 6.1 platform.

FlexModel Enhancements

FlexModels were recently enhanced with the following features:

- Reset—FlexModels now support resetting a simulation back to time zero during a simulation run.

- Uncoupled Mode—FlexModels now support multiple command streams that operate independently in a C testbench.

- Multiple Command Streams—A single C testbench can now provide commands to more than one FlexModel or multiple instances of the same FlexModel.

- Linux Support—FlexModels are now supported on Red Hat Linux 6.1.

- AIX Support—FlexModels are now supported on AIX 4.3.2.

- New interrupt commands—the commands, FLEX_SET_VALUE, FLEX_GET_VALUE, and FLEX_WAIT_ON_NODE, allow you to prompt the simulator for values on individual nets from within a C program. You can set, get, or wait on the value of any net in a design.

For information about using multiple command streams and uncoupled mode with C testbenches, refer to the *FlexModel User's Manual*.

Simulator Configuration Guide for Synopsys Models

The *Simulator Configuration Guide for Synopsys Models* is the latest addition to the SmartModel Library documentation set. This guide explains how to integrate SmartModels, FlexModels, MemPro models, and hardware models with the most widely used simulators. It also explains how to integrate SmartModels and FlexModels on all supported SWIFT simulators. Along with this enhancement, the *SWIFT Usage Notes for QuickSim II and Verilog-XL* has been retired. All of the information formerly in that manual is now contained in the new guide.

SystemC/SWIFT Support

Synopsis provides a SystemC/SWIFT interface that supports Flex Models. SystemC is a C++ class library used for creating cycle-accurate models of software algorithms, hardware architecture, and interfaces for System-on-Chip (SoC) and system-level designs. As part of its class library, SystemC provides a cycle simulation environment, is designed to work with event-driven logic simulators, and provides extensive support for modeling device timing accurately. For more details see the *SmartModel Products Application Notes Manual*.

New Tool, cnvrt2mif

A new tool, cnvt2mif, replaces mi_trans for converting memory data files to the memory image file (MIF) format. Using cnvt2mif, you can optionally specify the number, name, and bitwidth of output files and perform endian conversion. In addition, you can select data from within the input file by specifying an address range for the conversion. You can also specify a base address for indexed addressing, and control the verbosity and extent of message display. cnvt2mif reads hexadecimal digits in either upper or lower case. You should use cnvt2mif for new designs, but mi_trans is still supported for backward compatibility. For more details see the *SmartModel Library User's Manual*.

Supporting 32 Bit Libraries on 64 Bit Platforms

If you would like to run 32 bit Synopsys tools on a 64 bit HP-UX or Solaris platform, set the `LMC_USE_32BIT` environment variable to `1` before invoking the tool.

FlexModel Issues and Workarounds

Following are known issues with the FlexModel software, along with suggested workarounds:

- When using multiple instances of a FlexModel within one or more top level Verilog testbenches (VCS, Verilog-XL,...) you may see the message:

  ```
  Error: undefined symbol "flex_<cmd name>" (<testbench> line <number>)
  ```

  To work around this error

  a. Add the line

     `undef FLEXMODEL_CMDS_INC

     before the line that reads

     `` `include `` *model*_pkg.inc

  b. On the simulator invocation line add the multi-instance specification to your invocation.

     +define+flex_multi_inst

- The *model*_set_pin commands do not work in timing mode. The observed behavior is that certain pins do not set. We recommended that you do not use this command when timing mode is turned on.

- The Veribest (Verilog and VHDL) model wrapper generator tools on Intel NT do not work with FlexModels.

- Do not use multiple HDL command streams to control a single FlexModel instance. This may cause unpredictable behavior.

- If you get an error message similar to the following example, you need to recompile your C testbench. (This message appears as an exception in the transcript window.)

  ```
  C interface versions of flexmodel_pkg(1) & fastm_cmdcore(2) do not
  match
  ```

  This error occurs when your testbench has been compiled with an earlier version of flexmodel_pkg and you have updated your LMC_HOME tree with the latest flexmodel_pkg and Command Core. For information on how to recompile a C testbench, see the *FlexModel User's Manual.*

SmartModel Issues and Workarounds

Following are known issues with the SmartModel software, along with suggested workarounds:

- "Synopsys Models on Scirocco" on page 9
- "Compiling FlexModels and MemPro Models for Scirocco 2000.12-1 and Above" on page 9
- Synopsys Models with VCS on HP-UX 11.0
- NT Issues and Workarounds

Attention

With the Mentor Graphics D.1 release, support for the SWIFT integration on QuickSim II transferred from Synopsys to Mentor Graphics. If you are using a D.1 or higher release of QuickSim II, refer to the Mentor Graphics documentation for information about using the SWIFT interface with their software. If you are using a Mentor Graphics release prior to D.1, refer to the *Simulator Configuration Guide for Synopsys Models*.

Synopsys Models on Scirocco

With Scirocco version 2000.02, you must use the -debug_all switch on the simulator invocation line. This switch is not needed with version 2000.06 and above.

Also, versions 2000.02 and 2000.06 of Scirocco generate faulty memory window arrays for SmartModels.

Compiling FlexModels and MemPro Models for Scirocco 2000.12-1 and Above

Synopsys now supports Scirocco versions 2000.12-1 and above. It is not necessary to use the -noevent switch when compiling slm_hdlc.vhd for FlexModels and MemPro Models for these versions of Scirocco. You will need to re-compile your slm library. See "Using FlexModels with Scirocco" on page 129 and "Using MemPro Models with Scirocco" on page 132 in the *Simulator Configuration Guide* manual for more details.

Synopsys Models with VCS on HP-UX 11.0

Customers using Synopsys models with VCS 5.2.1 or VCS 6.0 on the HP-UX 11.0 platform should contact

vcs_support@synopsys.com

or call 1-800-VERILOG for assistance.

NT Issues and Workarounds

The following issues and workarounds apply only to the Intel NT platform:

- There is no longer a win32.lib directory at %LMC_HOME%\lib. Instead, there is a pcnt.lib directory. If your EDA software looks for the libswift.dll in the win32.lib it will not find the directory. This will cause the software to issue an error message about being unable to load SWIFT.

  To solve this problem, create a win32.lib directory at %LMC_HOME%\lib and copy over the libswift.dll file from the pcnt.lib or alphant.lib directory.

- The SmartModel Library save and restore feature for SmartCircuit models is currently not functional on NT.

- ASCII readme files have .txt extensions. Some Windows NT installations are set up by default to associate such files with the Microsoft Notepad tool, which does not display the files correctly. If you have this problem, try using WordPad to read the ASCII files.

- The modeldiff tool is not supported on NT.

- Incremental Installs—When you use the Admin tool to install additional or revised models into an existing SmartModel Library installation (%LMC_HOME%) the tool may generate error messages about being unable to update certain files because they are in use. If you experience this type of problem, the workaround is to:

  - Make sure there are no users on your network that are simulating with SmartModel Library models

  - Shut down the license server

  - Run the Admin tool off the CD-ROM to perform the incremental install

- Reset/Restart with Flexmodels—The reset/restart feature of FlexModels is not supported in the NT environment.

- For the VCS simulator on the NT platform, HDL interrupts are supported in version 5.1 and higher only.

- For the VCS simulator on the NT platform, commands flex_set_value, flex_get_value and flex_wait_on_node are supported in version 5.1 and higher only.

Getting Help

If you have a question while using Synopsys products, use the following resources:

1. Start with the available product documentation installed on your network or located at the root level of your Synopsys CD-ROM. Every documentation set contains overview information in the intro.pdf file.

   Additional Synopsys documentation is available at this URL:

   > http://www.synopsys.com/products/lm/doc

   Datasheets for models are available using the Model Directory:

   > http://www.synopsys.com/products/lm/modelDir.html

2. Visit the online Support Center at this URL:

   > http://www.synopsys.com/support/lm/support.html

   This site gives you access to the following resources:

   ❍ SOLV-IT!, the Synopsys automated problem resolution system

   ❍ product-specific FAQs (frequently-asked questions)

   ❍ lists of supported simulators and platforms

   ❍ the ability to open a support help call

   ❍ the ability to submit a delivery request for some product lines

3. If you still have questions, call the Support Center:

   North American customers:
   Call the Synopsys Eagle*i* and Logic Modeling Products Support Center hotline at 1-800-445-1888 (or 1-503-748-6920) from 6:30 AM to 5 PM Pacific Time, Monday through Friday.

   International customers:
   Call your local sales office.

The Synopsys Website

General information about Synopsys and its products is available at this URL:

> http://www.synopsys.com

Synopsys Common Licensing (SCL) Document Set

Synopsys common licensing (SCL) software is delivered on a CD that is separate from the tools that use this software to authorize their use. The SCL documentation set includes the following publications, which are located in (root)/docs/scl on the SCL CD and also available on the Synopsys FTP server (ftp://ftp.synopsys.com):

- *Licensing QuickStart*—(142K PDF file)
  This booklet provides instructions for obtaining an electronic copy of your license key file and for installing and configuring SCL on UNIX and Windows NT.

- *Licensing Installation and Administration Guide*—(2.08M PDF file)
  This guide provides information about installation and configuration, key concepts, examples of license key files, migration to SCL, maintenance, and troubleshooting.

You can find general SCL information on the Web at:

http://www.synopsys.com/keys

Comments?

To report errors or make suggestions, please send e-mail to:

doc@synopsys.com

To report an error that occurs on a specific page, select the entire page (including headers and footers), and copy to the buffer. Then paste the buffer to the body of your e-mail message. This will provide us with information to identify the source of the problem.