Start Here
for
Model*Sim* EE

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EE Start Here - Part # M16500   **US$50**

Thank you

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ModelSim Elite Edition Simulators for UNIX and Windows

- **EE/VHDL** - for VHDL simulation only
- **EE/VLOG** - for Verilog simulation only
- **EE/LNL** - for **either** VHDL, **or** Verilog simulation (Language-Neutral Licensing)
- **EE/PLUS** - for single-language, or mixed VHDL/Verilog simulation

Questions?

If you have questions about the product you have purchased here are a few sources of information:

- "Locating Documentation" (p21)
- "Tech Support, Updates & Licensing" (p25)
- "Online References" (p32)

This document

In this document you will find information on ModelSim installation and documentation for our Elite Edition (EE) simulators. You will also find sections on tech support, licensing, and EDA industry references. If you are using this document online (the best way to use it), links for cross-references, email and the web are available - just click on the blue text.

Help preserve the Silicon Forest

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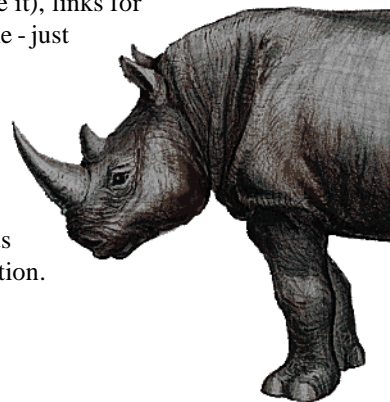
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EE Installation

System requirements for Model*Sim* EE

Platform	Operating system & interface	Memory	Storage
SPARCstation	SunOS 4.1 & OpenWindows Solaris 2.4, 2.5, 2.6 & OSF/Motif , OpenWindows, or CDE	32 Mb minimum (memory need scales with size of circuit - med to large gate design may need 256 Mb)	hard disk with at least 35 Mb spare capacity
IBM RISC/6000	AIX 4.1, 4.2 & OSF/Motif		
HP 700	HP-UX 9x through 11.0 & HP VUE , OSF/Motif, or CDE		
X86	network-ready (see note) Windows NT 4.0 or 95/98		

Platform-specific instructions

Select your platform for installation instructions.

- Installation - UNIX platforms (p7)
- Installation - Windows platforms (p10)

Note: Any PC client or server must be connected to a network with TCP/IP or IPX/SPX. If you are installing on an NT machine, make sure you are logged in as "administrator" when running the installation program.

Installation - UNIX platforms

Before you begin a new Model*Sim* EE installation on a UNIX machine, make sure you have a Globetrotter license data file (*license.dat* file); you'll need the file to run Model*Sim*. If you don't have a license file see

Your workstation's identification is required for a license; here are the commands that return the ID:

Syntax	Platform
hostid	SPARC
/etc/lanscan	HP 700
uname -m	RISC/6000

The commands used to install Model*Sim* are case-sensitive, so they must be entered exactly as shown in the following steps. (Note that neither the prompt nor the <Return> at the end of a line is shown in the examples.)

1 Model*Sim* can be installed in any directory. These instructions assume that you are installing it in the */usr* directory. You can change to the desired installation directory by entering one of the following commands:

```
cd /usr
    or
cd <pathname>
```

2 From a mounted Model*Sim* CD, extract the file for your platform with the following syntax (this creates the top-level directory *modeltech*):

```
tar xf /<CD-ROM>/WORKSTATION/install/<filename.tar>
```

where the <filename.tar> is:

Platform	<filename.tar>
All platforms	base.tar (extract for all platforms)
Sun OS-4/Solaris 1.x	sun4.tar
Sun OS-5/Solaris 2.x	sunos5.tar

Platform	<filename.tar>
HP	hp700.tar
IBM	rs6000.tar
All platforms	docs.tar (Model*Sim* manuals in pdf format)

In addition to the platform-specific file you need to extract *base.tar* (common Model*Sim* files) and *docs.tar* (documentation).

3 Add the pathname of the Model*Sim* executable directory to your search path (use one of the following):

```
/usr/modeltech/sun4
/usr/modeltech/sunos5
/usr/modeltech/hp700
/usr/modeltech/rs6000
```

If are using shell scripts that require platform independence, you can use the **vco** command within the path of your shell script to return the platform directory to your search path. **Vco** returns a path appropriate for the hardware from which you are invoking the simulator. The shell you are running determines how you add vco to your path:

- for csh:
  ```
  set path = ( $path /usr/modeltech/'/usr/modeltech/vco' )
  ```
- for sh (Bourne or Korn)
  ```
  PATH=$PATH:/usr/modeltech/'/usr/modeltech/vco'
  export PATH
  ```

4 If you are using SunOS 4, and are planning to load shared libraries, you'll need this path included in the LD_LIBRARY_PATH environment variable:

```
/usr/openwin/lib
```

5 Enter or edit the *license.dat* file in the *modeltech* directory. Typically the file looks like this (also see):

```
SERVER hostname nnnnnnnn 1650
DAEMON modeltech ./modeltech ./options
FEATURE vsim modeltech 1997.090 dd-mmm-yyyy 2 \
6C92577EC335F4C9568D ck=61
FEATURE vcom modeltech 1997.090 dd-mmm-yyyy 2 \
6C92577EC335F4C9568D ck=61
```

> **Note:** To enable starting the license daemon from any directory, change the DAEMON line to use the full path. For example:
>
> ```
> DAEMON modeltech /usr/modeltech/hp700/modeltech \
> /usr/modeltech/hp700/options
> ```

6   For HP installation using HP-UX version 9.x only: either the device /dev/lan0 must be writable by the userID that starts the server, or the lmgrd daemon and the lmhostid utility must be made "setuid root". The commands to do this are:

```
chmod a+w /dev/lan0
```

or

```
chown root lmgrd lmhostid
chmod u+s lmgrd lmhostid
```

7   Start the license manager daemon by entering the following commands:

```
cd /usr/modeltech/<platform>
START_SERVER
```

where <platform> can be sun4, sunos5, hp700, rs6000.

If your system runs other applications that use Globetrotter Software's FLEXlm, a complete user's manual for FLEXlm is available at Globetrotter Software's home page:

http://www.globetrotter.com/manual.htm

8   You may delete the executables you don't want. For example, if you don't need Model*Sim* for HP machines:

```
cd /usr/modeltech/
rm -rf hp700
```

Installation - Windows platforms

Note: Any PC client or server must be connected to a network with TCP/IP or IPX/SPX. If you are installing on an NT machine, make sure you are logged in as "administrator" when running the installation program.

Model*Sim* EE requires a server for proper installation. Your server can be one of the following:

- A stand-alone PC with a FLEXlm security key attached. (The PC acts as both server and client.)
- A Windows server (95/98/NT) with a security key attached. (The client has no security key.)
- A UNIX server. (The client nor server have a security key; the server's hostID provides the same locking function as the security key.)

Installing the FLEXid security key

Attach the FLEXid security key (FLEXid is printed on the key) to the parallel port of the PC server or stand-alone PC (key drivers are loaded during installation). If a printer or other device is using the parallel port, install the security key on the port first, then attach that device to the key. The security key will not interfere with normal device operations.

Please remember to protect your security key; Model Technology will replace a defective key, but not one that is lost or stolen.

Installation and setup for a PC server

Follow this process to set up a floating license server on a PC. If you are installing Model*Sim* on a stand-alone PC, the license is still a considered floating license. If you are using a UNIX server see: .

1   Run the Model*Sim* installation.
- **Install from the CD -** install will auto-run when you insert the CD, or you can click on the CD icon.
- **Install from an FTP file** - run the installation executable as noted below.

The password-protected Model*Sim* installation executable (mti52ee.exe) and documentation file (ee_docs.zip) are available within the version-numbered directories at:

   ftp.model.com/pub/EE/

Place the unzipped documentation files in the *modelsim\docs* directory after Model*Sim* is installed.

2 During installation you will be asked to choose a Sentinel driver for your specific FLEXid security key. The number on your FLEXid security key (something like 7-xxxxxxxx, or 8-xxxxxxxx) relates to the driver you will select.

3 Copy *license.dat* (the license file you received by email when you purchased Model*Sim*) to *C:\modelsim\win32\license.dat*, or to your specific Model*Sim* pathname if different. Pasting the text from the email into the *license.dat* file is the safest way to create a valid license file. See "A license.dat file example" (p29) for details on the structure of a license file.

4 Verify your hostname (the server's computer name) via the Windows Control Panel with either FLEXlm > Advanced > Diagnostics, or with Network > Identification.

5 Edit the *license.dat* file and make the following changes:
   • Replace "hostname" with the server computer name.

   • Change the "1650" port value only if this port is already used. If uncertain, do not change.

   • Change the DAEMON path to correspond with the full pathname of the modeltech daemon. For example,
   ```
   DAEMON modeltech C:\modelsim\win32\modeltech
   ```

6 Set the environment variable for LM_LICENSE_FILE.
   • For **Windows NT** go to Control Panel > System > Environment and add LM_LICENSE_FILE with an initial value of 1650@MYPC, where MYPC is the hostname.

   • For **Windows 95/98** edit the *autoexec.bat* and add the following line:
   ```
   set LM_LICENSE_FILE=1650@MYPC
   ```
   where MYPC is your hostname.

Note that the changes made to your *license.dat* file are reflected in the port# (1650) and the hostname (MYPC) that you set for LM_LICENSE_FILE.

Note: If the LM_LICENSE_FILE variable is already defined, you can add a second value by separating the two values with a semi-colon (;). For example: LM_LICENSE_FILE=1650@MYPC;c:\renoir\license.dat

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7 For Windows 95/98, reboot your machine; no reboot is needed for NT.

---

8   Go to the FLEXlm License Manager located in your Control Panel. Choose the Setup tab and add the pathnames for the lmgrd.exe, license.dat, and debug.log. Make sure the pathnames and extensions are correct, then save the setup. Typical entries might look like this:

lmgrd.exe	C:\modelsim\win32\lmgrd.exe
License file	C:\modelsim\win32\license.dat
Debug log file	C:\modelsim\win32\debug.log

9   Next choose the FLEXlm Control tab. Press the start button. Wait a moment, then press the status button. The server should be up. If the server does not start, try the following troubleshooting procedures.

Troubleshooting PC server setup

1   Open a DOS window and go to the appropriate *modelsim\win32* directory. For example, C:\modelsim\win32. Enter the command:

```
lmutil lmdiag
```

This allows you to verify each feature independently.

2   From a DOS window, and the same *win32* directory, enter the following:

```
lmutil lmstat -a
```

This shows you all licenses that are available.

3   Go to the *debug.log* inside the *win32* directory. This may provide other information about the source of the license server problems.

Setup for a UNIX server

Check with your system administrator for the server's hostname and port#, then follow the installation instructions above (steps 5 through 7) to set the LM_LICENSE_FILE variable for your platform.

Windows platform installation details

Licensing

Model*Sim* licensing is handled by the FLEXlm license manager from Globetrotter Software. In a Windows-only environment, a FLEXid security key is installed that identifies the machine as the license server (a stand-alone PC acts as server *and* client). A UNIX machine may also be used as the license server, and requires no security key because FLEXlm uses the UNIX server's hostID as the identifier.

The license file (*license.dat*) is based on the server identifier (the FLEXid, or host ID), and is obtained from either Model Technology or Mentor Graphics. (See "Licenses - ModelSim EE" (p29) if you need a license file.)

If your license server is a UNIX workstation, make sure you are running lmgrd version 5.12b. If you have Model*Sim* 5.2 installed on the UNIX server, you have the current version - earlier lmgrd versions will not work for Windows machines accessing the server. If you need a new version of lmgrd, please download it from: http://www.globetrotter.com/lmgrd.htm. If you are a Mentor customer using an MGC license, consult MGC documentation for setting up your server.

How to find the security key ID

The key ID is on a sticker attached to the key. If you can't easily access the key, you can run a utility from the DOS prompt that reads the key ID. Type **lmutil lmhostid -flexid** at the DOS prompt on the Windows server. You'll find *lmutil.exe* in the *<install_dir>\modelsim\win32* directory after Model*Sim* installation.

Regenerating your design libraries

Depending on your current Model*Sim* version, you may need to regenerate your design libraries before running a simulation. Check the installation readme file to see if your libraries require an update. You can easily regenerate your design libraries with **-refresh**. By default, the **work** library is updated; use **-work <library>** to update a different library. For example, if you have a library named **mylib** that contains both VHDL and Verilog design units you would use both of these commands:

```
vcom -work mylib -refresh
vlog -work mylib -refresh
```

Note: As in the example above, you will need to use **vcom** to refresh VHDL, and **vlog** to refresh Verilog design units. Also, you **don't** need to regenerate the std, ieee, vital22b, and verilog libraries.

Important: The library mapping for the provided Model*Sim* libraries varies between Model*Sim* PE and Model*Sim* EE. For example, the std library in the PE *modelsim.ini* says $MODEL_TECH/std, where EE says $MODEL_TECH/../std. To prepare a new *modelsim.ini* for Model*Sim* EE it is best to change the name of your PE *modelsim.ini* to another name, and then use **vmap** to copy a new *modelsim.ini* file.

Installed directories and files

A typical installation for any EE platform would include the base file structure illustrated below. For platform-specific (hp700, rs6000, sun4, sunos5, and Win32) directories see

Installed files - Model*Sim* EE		
Directory	Files & subdirectories	Description
<install directory> /<modelsim_dir> * NOTE: the default Model*Sim* directory is /modeltech for UNIX, and /modelsim for Windows	convert.tcl, modelsim.ini, rebuild_libs.csh, rebuild_libs.sh, release_notes, release_notes.html, vsim.ps	translates 4.6 DO files into 5.1 DO files, modelsim initialization file, recreates all libraries from the source files (for csh and sh shells), modelsim readme files in text and HTML formats, Postscript header file
./arithmetic	std_logic_arith	Mentor Graphics synthesis-specific arithmetic packages
./bin	various	UNIX platform-independent executables and QuickHDL mappings to Model*Sim* executables

Installed files - Model*Sim* EE		
Directory	Files & subdirectories	Description
./docs	technotes, HTML, winhelp, ee_start_here.pdf, ee_tutorial_<ver>.pdf, ee_manual_<ver>.pdf, ee_doc_index.pdf sdk_um.pdf,	general Model*Sim* technotes, HTML versions of the Tcl/Tk man pages, WinHelp version of the Tcl man pages, Start Here document in PDF format, Model*Sim* Tutorial in PDF format, EE/PLUS Reference Manual in PDF format, Model*Sim* documentation index, MGC standard developer's kit manual in PDF format
./examples	various	example simulation models, testbenches, macros, and utilities
./examples/foreign	various	example file directory for foreign interface
./examples/mixedhdl	various	example file directory for mixed VHDL/Verilog design
./examples/tcl_getstart	various	example files for Tcl/Tk tutorial

Installed files - Model*Sim* EE		
Directory	Files & subdirectories	Description
./ieee	various	library for accelerated IEEE and Synopsys arithmetic packages
./ieeepure	various	standard VHDL IEEE library
./include	various	include files for use with Verilog PLI, VHDL foreign interface, and TCL
./mgc_portable	various	Mentor Graphics Quick*Sim* compatible logic set
./std	various	VHDL STD library and package TEXTIO
./std_developerskit	various	libraries for MGC standard developer's kit
./synopsys	various	accelerated arithmetic packages (also in ieee)
./tcl	bitmaps, tcl8.0, tix4.1, tk8.0, vsim	libraries for Tcl, Tix, Tk, and, vsim
./verilog	vl_types	VHDL package for mapping to Verilog states
./vhdl_src/ arithmetic	std_arit.vhd (see note below)	source for Mentor Graphics synthesis arithmetic libraries

Installed files - Model*Sim* EE		
Directory	Files & subdirectories	Description
./vhdl_src/ieee	mti_numeric_bit.vhd, mti_numeric_std.vhd, stdlogic.vhd	sources for rebuilding basic IEEE std_logic_1164 library and accelerated IEEE arithmetic packages
./vhdl_src/mentor	numeric_extra.vhd, numeric_signed.vhd, numeric_unsigned.vhd, qsim_logic.vhd, qsim_relations.vhd, qsim_tc.vhd, std_logic_1164_ext.vhd	source for Mentor Graphics QuickHDL add-ons
./vhdl_src/std	standard.vhd, textio.vhd	sources for VHDL STD library and package TEXTIO
./vhdl_src/ std_developerskit	examples, iopakb.vhd, iopakp.vhd, mempakb.vhd, mempakp.vhd, regpakb.vhd, regpakp.vhd, simflagb.vhd, simflagp.vhd, synthreg.vhd, timingb.vhd, timingp.vhd	sources and examples for MGC standard developer's kit

Installed files - Model*Sim* EE		
Directory	Files & subdirectories	Description
./vhdl_src/synopsys	mti_std_logic_arith.vhd, mti_std_logic_misc.vhd, mti_std_logic_signed.vhd mti_std_logic_unsigned.vhd, std_logic_textio.vhd, syn_ari.vhd, syn_attributes.vhd, syn_type.vhd	sources for rebuilding accelerated arithmetic packages
./vhdl_src/verilog	vltypes.vhd	source for rebuilding Verilog library
./vhdl_src/vital2.2b	prmtvs_b.vhd, prmtvs_p.vhd, timing_b.vhd, timing_p.vhd	sources for rebuilding VITAL version 2.2b library
./vhdl_src/vital95	prmtvs_b.vhd, prmtvs_p.vhd, timing_b.vhd, timing_p.vhd	sources for rebuilding VITAL version 95 library

Note: The version of std_logic_arith contained in file *std_arit.vhd* is NOT the version that is compiled into the Model*Sim* **ieee** library.

This version is compiled into library **arithmetic** and is available for customers who may have previously used Mentor QuickVhdl, and used the Mentor **arithmetic** package that contained std_logic_arith modified for use with the Mentor synthesis tools.

The source for the ieee-precompiled version is in:

```
vhdl_src/synopsys/mti_std_logic_arith.vhd
```

Platform-specific directories

Platform-specific directories within the *<modelsim_dir>* directory (*hp700*, *rs6000*, *sun4*, *sunos5, and win32*) contain files as noted below.

Platform-specific directories - UNIX platforms	
Files in UNIX platform directory	Description
DUMPLOG64	dumps readable content for vsim .wav file
START_SERVER	license manager script
libhm.sl, libsm.sl, libswiftpli.sl	SmartModel and hardware modeler support libraries
lmborrow, lmcksum, lmdiag, lmdown, lmgrd, lmhostid, lmremove, lmreread, lmstat, lmswitchr, lmutil, lmver, modeltech	Globetrotter license manager executables
options	license manager user-specified options
sm_entity, hm_entity	Model*Sim* tools for use with LMG Smartmodels and hardware modeler
tssi2mti	Model*Sim* tool for use with SEF files
vcom	Model*Sim* VHDL compiler
vdel, vdir, vlib, vmake, vmap	Model*Sim* library management tools
vlog	Model*Sim* Verilog compiler
vish	Tcl/TK user interface
vlm	simulation license manager

Platform-specific directories - UNIX platforms	
Files in UNIX platform directory	Description
vgencomp	Model*Sim* tool for use with Verilog modules in VHDL
vsim	Model*Sim* simulator
wav2log	translates Model*Sim* log file to QuickSim II log file
./rs6000/mti_exports	list of foreign interface routines exported from mti
./sun4/vsim.swift	Model*Sim* simulator for use with LMG models; only required for Sun4

Platform-specific directories - Windows platforms	
Files in the ../win32 directory	Description
dumplog64.exe	dumps readable content for vsim .wav file
libsm.dll, libsm.exp, libsm.lib, libswiftpli.dll	SmartModel support libraries
flexlm.cpl, lmgr325c.dll, lmgrd.exe, lmutil.exe, modeltech.exe	Globetrotter license manager executables and libraries
license.dat	license manager data file
modelsim.exe	invokes Model*Sim* environment
modelsim.ini	Model*Sim* project file
sm_entity.exe	Model*Sim* tool for use with LMG models

Platform-specific directories - Windows platforms	
Files in the ../win32 directory	Description
tcl80.dll, tclpip80.dll, tix4180.dll, tk80.dll	Tcl, Tix and Tk dynamic libraries
tssi2mti.exe	Model*Sim* tool for use with SEF files
vcom.exe	Model*Sim* VHDL compiler
vdel.exe, vdir.exe, vlib.exe, vmake.exe, vmap.exe	Model*Sim* library management tools
vlog.exe	Model*Sim* Verilog compiler
vish.exe	Tcl/TK user interface
vlm.exe	simulation license manager
vgencomp.exe	Model*Sim* tool for use with Verilog modules in VHDL
vsim.exe	Model*Sim* simulator
wav2log.exe	translates Model*Sim* log file to QuickSim II log file

Locating Documentation

Online documentation

Model Technology documentation, including this booklet, is available in Adobe Acrobat (PDF) format for online viewing.

PDF documentation is more than electronic images of paper manuals. You'll find it easier to follow cross references (click on blue links), and navigate the document with the outline/bookmark feature of the Acrobat Reader. Find and Search capabilities allow you to locate any text string, and since the table of contents and index entries are also links into the document, the Acrobat Reader "turns the pages" for you.

Our documentation requires Acrobat Reader version 3.01 for viewing (free from adobe.com, and on the Model*Sim* CD). We suggest you use the Reader *with Search* for viewing the files because it facilitates indexed searching, which is much faster than simple text-string searches. See "Using ModelSim's PDF documentation" (p25) for more information about using Search.

Getting the most current PDF manuals

Download the current PDF reference manuals from the Model Technology FTP site: ftp://ftp.model.com/pub. Choose either the EE or PE tree; you'll find the documentation files within the version-numbered directories. The *Reference Manual* files are password-protected for registered users. The *ModelSim EE Start Here* and *EE Tutorial* are available from www.model.com; no password is required. For the latest version of Model*Sim* software see "Updates" (p30), www.model.com , or the ftp site above.

Getting paper manuals

If you need a printed copy of the *ModelSim Reference Manual* or the *ModelSim Tutorial,* use one of the request cards attached to this booklet. Registered users may request up to two copies of each book for each license purchased. You might save the second form to order new books when versions change. (Additional copies are available at US$50 per book, you might also consider printing only the sections you need from the PDF file.)

EE documentation

Model*Sim* EE documentation is included on the Model*Sim* CD in the electronic formats shown below.

Model*Sim* EE/PLUS Reference Manual
- PDF format (in print for US$50)
- command and simulation reference for all EE products
- default path: <modelsim_dir>/docs/ee_manual_<version>.pdf

Model*Sim* EE Tutorial
- PDF format (in print for US$50)
- beginning tutorial for all EE products
- default path: <modelsim_dir>/docs/ee_tutorial_<version>.pdf

Std_DevelopersKit User's Manual
- PDF format

- Mentor Graphics VHDL design development kit
- default path: /<modelsim_dir>/docs/sdk_um.pdf

Start Here for Model*Sim* (this guide)
- PDF format
- installation and support references
- default path: /<modelsim_dir>/docs/ee_start_here.pdf

Technotes
- text format
- various
- default path: /<modelsim_dir>/docs/technotes/

Tcl man pages
- HTML format, and WinHelp format
- Model*Sim* menu pick: Help > Tcl Man Pages

Available from our web site:

Model*Sim* Quick Guide
- PDF format
- quick reference for commands, variables, tools
- from web site: www.model.com/pdf/quickguide.pdf

Using Model*Sim*'s PDF documentation

Getting the Acrobat Reader

Model*Sim* PDF documentation requires Adobe Acrobat Reader version 3.01 (Reader with Search is recommended). Installation files for the Reader with Search are in the Acrobat directory on the Model*Sim* CD, or available directly from Adobe at: http://www.adobe.com/

Searching PDF files

The Acrobat Reader with Search provides two methods for finding text within PDF documents: Search (fast, indexed search), and Find (slower text search). Look for these icons on the Acrobat Reader toolbar:

Search icons help you quickly search through an indexed PDF document. The small binocular icon (the Find icon is larger) returns a search criteria dialog box. To use Search you must be viewing an

indexed document. See "Requirements for Acrobat Search" (p24) below.

🔍 The **Find icon** initiates a simple text search of the PDF file. Depending on the speed of your machine and the size of the file, Find can be slow (but effective).

Requirements for Acrobat Search

To use Acrobat Search with Model*Sim* PDF docs you need the following file/directory structure. If you installed Model*Sim* from the CD-ROM or downloaded the documentation set from our web site (http://www.model.com) you will likely have this structure. Search is intended for use with the complete *Manual/Tutorial* documentation set. Search will not work correctly with individual files that are not part of the directory structure below.

Doc files for Model*Sim* EE

These Model*Sim* documentation files must be in the directory shown for Acrobat Search to work.

This directory:

```
<intall_dir>/<modelsim_dir>/docs/
```
must include these files:
```
ee_manual_<version>.pdf (reference manual)
ee_tutorial_<version>.pdf (ModelSim tutorial)
ee_start_here.pdf (this document)
ee_doc_index.pdf (links to documentation)
sdk_um.pdf (Mentor Std_developersKit)
ee_index.pdx (PDF index file)
/ee_index (directory and subdirectories for PDF index)
```

Copy and Paste from PDF files

You can copy text from PDF files and paste it into Model*Sim*'s Main transcript.

📋 Select the **abc** button on the Acrobat Reader toolbar. You can then select and copy text from the PDF file into Model*Sim*. This is especially helpful if you want to copy and paste examples from the tutorials to the command line.

Tech Support, Updates & Licensing

Model*Sim* contact matrix

If you are viewing this document online, select a link for Model*Sim* sales and support from the table below, or see the sections that follow for additional detail.

Model Technology (www.model.com)		
Americas	Europe	Asia

Mentor Graphics (www.mentorg.com)	
North America	Outside North America
1-800-547-4303	supportnetweb.mentorg.com

Annapolis Microsystems	www.annapmicro.com
Exemplar Logic	www.exemplar.com
Hewlett Packard EEsof	www.hp.com/go/hpeesof
Synplicity	www.synplicity.com

Technical support - by telephone

Mentor Graphics customers In North America

For customers who purchased products from Mentor Graphics in North America, and are under a current support contract, technical telephone support is available from the central SupportCenter by calling toll-free 1-800-547-4303. The coverage window is from 6:00am to 5:30pm Pacific Time, Monday through Friday, excluding Mentor Graphics holidays.

The more preliminary information customers can supply about a problem or issue at the beginning of the reporting process, the sooner the Software Support Engineer (SSE) can supply a solution or workaround. Information of most help to the SSE includes accurate operating system and software version numbers, the steps leading to the problem or crash, the first few lines of a traceback, and problem sections of the Procedural Interface code.

Mentor Graphics customers outside North America

For customers who purchased products from Mentor Graphics outside of North America, should contact their local support organization. A list of local Mentor Graphics SupportCenters outside North America can be found at supportnetweb.mentorg.com under "Connections", then "International Directory".

Model Technology customers worldwide

For customers who purchased from Model Technology, please contact Model Technology via the support line at 1-503-641-1340 from 8:00 AM to 5:00 PM Pacific Time. Be sure to have your server hostID or hardware security key authorization number handy.

Technical support - electronic support services

Mentor Graphics customers

Mentor Graphics Customer Support offers a SupportNet-Email server for North American and European companies that lets customers find product information or submit service requests (call logs) to the SupportCenter 24 hours a day, 365 days a year. The server will return a call log number within minutes. SSEs follow up on the call logs submitted through SupportNet-Email using the same process as if a customer had phoned the SupportCenter. For more information about using the SupportNet-Email server, send a blank e-mail message to the following address: support_net@mentorg.com.

Additionally, customers can open call logs or search the Mentor TechNote database of solutions to try to find the answers to their questions by logging onto Mentor Graphics' Customer Support web home page at http://supportnetweb.mentorg.com.

To establish a SupportNet account for your site (both a site-based SupportNet-Web account and a user-based SupportNet Email account), please submit the following information: name, phone number, fax number, email address, company name, site ID. Within one business day, you will be provided with the account information for new registrations.

While all customers worldwide are invited to obtain a SupportNet-Web site login, the SupportNet-Email services are currently limited to customers who receive support from Mentor support offices in North America or Europe. If you receive support from Mentor offices outside of North America or Europe, please contact your local field office to obtain assistance for a technical-support issue.

Model Technology customers

Support questions may be submitted through the Model Technology web site at: www.model.com. Model Technology customers may also email test cases to support@model.com; please provide the following information, in this format, in the body of your email message:

- Your name:
  Company:
  Email address (if different from message address):
  Telephone:
  FAX (optional):

- Model*Sim* product (EE or PE, and VHDL, VLOG, or PLUS):

- Model*Sim* Version:
  (Use the Help About dialog box with Windows; type **vcom** for UNIX workstations.)

- Host operating system version:

- PC hardware security key authorization number:

- Host ID of license server for workstations:

- Description of the problem (please include the exact wording of any error messages):

Technical support - other channels

For customers who purchased Model*Sim* as part of a bundled product from an OEM, or VAR, support is available at the following:

- **Annapolis Microsystems**
  email: wftech@annapmicro.com
  telephone: 1-410-841-2514
  web site: http://www.annapmicro.com

- **Exemplar Logic**
  email: support@exemplar.com
  telephone: 1-510-789-3333
  web site: http://www.exemplar.com

- **Hewlett Packard EEsof**
  email: hpeesof_support@hp.com
  telephone: 1-800-HPEESOF (1-800-473-3763)
  web site: http://www.hp.com/go/hpeesof

- **Synplicity**
  email: support@synplicity.com
  telephone: 1-408-617-6000
  web site: http://www.synplicity.com

Updates

Mentor customers: getting the latest version via FTP

You can ftp the latest EE or PE version of the software from the SupportNet site at ftp://supportnet.mentorg.com/pub/mentortech/modeltech/. Instructions are there as well. A valid license file from Mentor Graphics is needed to uncompress the Model*Sim* EE files. A password from Model Technology is required to uncompress the Model*Sim* PE files. Contact license@model.com if you are a current PE customer and need a password.

Model Technology customers: getting the latest version via FTP

You can ftp the latest version of the software from the web site at ftp://ftp.model.com. Instructions are there as well. A valid license file from Model Technology is needed to uncompress the Model*Sim* EE files. A password from Model Technology is needed to uncompress the Model*Sim* PE files. Contact license@model.com if you are a current PE customer and need a password.

Licenses - Model*Sim* EE

Where to obtain your license

Mentor Graphics customers must contact their Mentor Graphics salesperson for Model*Sim* EE licensing. All other customers may obtain Model*Sim* EE licenses from Model Technology. Please contact Model Technology at license@model.com.

If you have trouble with licensing

Contact your normal technical support channel:

- Technical support - by telephone (p25)
- Technical support - electronic support services (p26)
- Technical support - other channels (p28)

All customers: Model*Sim* EE licensing

Model*Sim* EE uses Globetrotter's FLEXlm license manager and files. Globetrotter FLEXlm license files contain lines that can be referred to by the word that appears first on the line. Each kind of line has a specific purpose and there are many more kinds of lines that MTI does not use.

A *license.dat* file example

```
SERVER hostname 11111111 1650
DAEMON modeltech ./modeltech ./options
FEATURE vcom modeltech 1998.080 31-aug-98 1 \
0C944D8F0C79B02EF5CF ck=117
```

```
FEATURE vsim modeltech 1998.080 31-aug-98 1 \
FCB4FD0F2A635C20E5CF ck=128
FEATURE vlog modeltech 1998.080 31-aug-98 1 \
0C944D9F176CA773E889 ck=10
FEATURE vsim-vlog modeltech 1998.080 31-aug-98 1 \
FCB41D9FC43C87567DBC ck=116


FEATURE hdlcom modeltech 1998.080 31-aug-98 1 \
4C94EDFF6A00858BC8F2 ck=93
FEATURE hdlsim modeltech 1998.080 31-aug-98 1 \
4CF48DDF6A6EA59BCEF2 ck=89
# NOTE: You can edit the hostname on the SERVER line (1st arg),
#       the port address on the SERVER line (3rd arg), the paths
#       to the daemon and options files on the DAEMON line
#       (2nd and 3rd args), or any right-half of a string (b)
#       of the form a=b where (a) is all lowercase. (For example,
#       xxx in vendor_info="xxx" can be changed).
#       Any other changes will invalidate this license.
```

A Globetrotter FLEXlm license file contains information about the license server, the daemon required to authorize the feature, and a line for each product feature you are authorized to execute.

The first line is a SERVER line; it spells out which computer on the network is the license server. The license server is a network resource that will manage the features for all users of Model*Sim* products. The SERVER line includes the server's hostname (the server's network identification - for Windows, check the Network properties Identification tab), hostID (a unique serial number), and a socket number. The hostname and socket number may be changed in a license file, but any change to the hostID will invalidate the license. If the host is a Windows machine, the hostID is the FLEXid security key number, and will take the alpha-numeric form: 7-xxxxxxxx, or 8-xxxxxxxx.

If you need to find the unique server ID, use one of these UNIX commands: for Sun, **hostid**; for HP, **/etc/lanscan**; for IBM RISC/6000: **uname -m**. To determine the security key ID on a Windows server, from the DOS prompt, invoke: **lmutil lmhostid -flexid** (located in the *modelsim\win32* directory).

A DAEMON line specifies the name of the license daemon and the locations of the daemon and options files it will use. This is the full path to the modeltech daemon. In the example file, the UNIX "./" means "look in the current directory". This is the directory in which the server was started. If the server is to be started from another directory, the full path to the *modeltech* and *options* files would need to be added to this line.

For example,

```
DAEMON modeltech /usr/mti5.2/sunos5/modeltech \
/usr/mti5.2/sunos5/options
```

A FEATURE line describes how many licenses ("tokens") are available; it contains the feature name, daemon required, most current build date authorized to run, token expiration date, number of tokens for the feature, license code, and a checksum. The features are:

> **vcom** is a VHDL compilation feature
> **vsim** is a VHDL simulation feature
> **vlog** is a Verilog compilation feature
> **vsim-vlog** is a Verilog simulation feature

When a VHDL design is compiled, a **vcom** token is used. When a Verilog design is compiled, a **vlog** token is used. When a VHDL design is simulated, a **vsim** token is used. When a Verilog design is simulated, **vsim-vlog** is used. This is why two people running different single-language designs can work at the same time with one Model*Sim* PLUS product. When a design with both languages is run, one of each token is checked out.

With Model*Sim* EE/LNL, **hdl** FEATURE lines are added. With LNL (language-neutral licensing), either VHDL or Verilog - but not both - can be used. The hdl FEATURE lines are shown in the example:

> **hdlcom** is a compilation feature used with either VHDL or Verilog
> **hdlsim** is a simulation feature used with either language

Notice the FEATURE lines. If a line is too long for the email program, a backslash ("\") appears at the end of the line. A UNIX system reads that as "whatever you read on the next line belongs on this line". So never edit out the "\" when you are transcribing a license file. Never put another character after it either.

All the important lines end in checksums. FLEXlm will let you know if you mistyped something when transcribing the license files because the checksum will not match the line's contents. (GLOBEtrotter has a utility that will report any checksum errors in a file. Use this command: lmchksum <license.file>) Lines that start with "#" are comments.

If you want to learn more about the tools that license Model*Sim*, read the license manager appendix in the Model*Sim* reference manual, and visit GLOBEtrotter at http://www.globetrotter.com/home.htm.

All customers: maintenance renewals and EE licenses

When maintenance is renewed, a new license file that incorporates the new maintenance expiration date will be automatically sent to you. If maintenance is not renewed, the current license file will still permit the use of any version of the software built before the maintenance expired until the stop date is reached.

All customers: license transfers and server changes

Model Technology and Mentor Graphics both charge a fee for server changes or license transfers. Contact sales@model.com for more information from Model Technology, or contact your local Mentor Graphics sales office for Mentor Graphics purchases.

Online References

The Model Technology web site includes links to many EDA information sources. Check the links below for the most current information.

Books and publications

model.com/support/tnbooksvhd.html

Partners

model.com/partners/index.html

Training partners

model.com/support/training.html

Resources

Useful quick guides and other references.

model.com/resources/index.html

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Software License Agreement
This is a legal agreement between you, the end user, and Model Technology Incorporated (MTI). By opening the sealed package, or by signing this form, you are agreeing to be bound by the terms of this agreement. If you do not agree to the terms of this agreement, promptly return the unopened package and all accompanying items to the place you obtained them for a full refund.

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7. OTHER RESTRICTIONS. You may not rent or lease the SOFTWARE. You shall not mortgage, pledge or encumber the SOFTWARE in any way. You shall ensure that all support service is performed by MTI or its designated agents. You shall notify MTI of any loss of the SOFTWARE.

8. TERMINATION. MTI may terminate this Agreement, or any license granted under it, in the event of breach or default by you. In the event of such termination, all applicable SOFTWARE shall be returned to MTI or destroyed.

9. EXPORT. You agree not to allow the MTI SOFTWARE to be sent or used in any other country except in compliance with this license and applicable U.S. laws and regulations. If you need advice on export laws and regulations, you should contact the U.S. Department of Commerce, Export Division, Washington, DC 20230, USA for clarification.

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Keep these numbers handy for tech support:

UNIX server hostid # :

_____

FLEXid security key # :

_____