

ModelSim[®] Installation & Licensing

Software Version 6.0

21/Jan/05



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Contractor/manufacturer is:

Mentor Graphics Corporation

8005 S.W. Boeckman Road, Wilsonville, Oregon 97070-7777.

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Contacting ModelSim Support

Telephone: 503.685.0820

Toll-Free Telephone: 877-744-6699

Website: www.model.com

Support: www.model.com/support

Contact technical writer: www.mentor.com/supportnet/documentation/reply_form.cfm

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Are you upgrading?

- From 5.8x or an earlier version

When you upgrade to 6.0, you will need to regenerate your design libraries after installing the software. See "Regenerating your design libraries" (p27) for details.

ModelSim version 6.0 uses version 8.2 of FLEXlm. Sites that have existing license servers running an older version must shut down the servers and restart them using the license server (lmgrd) and vendor daemon (modeltech or mgcld) provided in this release.

- From an earlier version of EE

If you run ModelSim EE, and are upgrading to ModelSim SE 6.0, you will need a viewer license in order to run the GUI. Contact Model Technology Sales for more information.

Supported platforms

The following list of platforms covers all versions of ModelSim (i.e., SE, PE, Designer, etc.). Not all versions run on all platforms. For example ModelSim PE and ModelSim Designer run only on Windows.

Platform / OS	VCO name ¹	Memory capacity
HP 700 / HP-UX 11.x (64-bit capable)	hp700 (32-bit binary) ²	3GB / 4GB ³
HP 700 / HP-UX 11.x (64-bit capable)	hppa64 (64-bit binary)	terabytes
Itanium 2 / Redhat Linux Advanced Workstation 2.1 ⁴ (64-bit only)	linux_ia64 (64-bit binary)	terabytes
Itanium 2 / HP-UX B.11.22 (64-bit only)	hpux_ia64 (64-bit binary)	terabytes
EM64T / SuSE Linux 9.1 or Redhat EWS 3.0 (32-bit mode only) ⁵	linux (32-bit binary)	3GB ⁶
EM64T / SuSE Linux 9.1 or Redhat EWS 3.0 ^{6, 7} (64-bit)	linux_x86_64 (64-bit binary)	terabytes
RS/6000 / AIX 4.3.x, 5.1, 5.2 (32-bit only)	rs6000 (32-bit binary)	2GB
RS/6000 / AIX 4.3.x, 5.1, 5.2 (64-bit capable)	rs6000 (32-bit binary) ²	2GB
RS/6000 / AIX 5.1.x, 5.2 (64-bit capable)	rs64 (64-bit binary)	terabytes
SPARC / Solaris 2.6, 7, 8 ⁸ , 9 (32-bit only)	sunos5 (32-bit binary)	4GB
SPARC / Solaris 7, 8 ⁸ , 9 (64-bit capable)	sunos5 (32-bit binary) ²	4GB
SPARC / Solaris 7, 8 ⁸ , 9 (64-bit capable)	sunos5v9 (64-bit binary)	terabytes
x86 / Win98, 2000, NT, Me, XP	win32	2GB
x86 / Redhat Linux 7.2 and higher	linux, linuxle	3GB ⁶
AMD64 / SuSE Linux 9.0 or Redhat EWS 3.0 (32-bit mode only)	linux	3GB ⁶

Platform / OS	VCO name ¹	Memory capacity
AMD64 & Athlon 64 / Redhat EWS 3.0 ⁷	linux_x86_64	terabytes

1. The VCO name refers to the platform directories that are created during installation.
2. Due to the superior performance of the 32-bit version, we recommend that you run 32-bit ModelSim on 64-bit capable systems *unless* you actually need the capacity offered by the 64-bit version.
3. HP-UX 11.0 has a memory capacity of 3GB; HP-UX 11.11 has a memory capacity of 4GB.
4. This version was built and tested on Linux kernel release 2.4.18-e.12smp for ia64.
5. FlexLM v8.2a (which is currently shipped in 6.0x) is not supported on an EM64T machine loaded with Suse 9.1 OS.
6. Memory usage is limited to the maximum process size allowed by the Linux kernel.
7. The Profiler is not supported on this platform.
8. ModelSim runs on all UltraSPARC hardware including the Sun Blade platform.

SystemC supported platforms

SystemC runs on a subset of ModelSim supported platforms. The table below shows the currently supported platforms and compilers versions. See *SystemC simulation* in the *ModelSim User's Manual* for more details.

Platform	Supported compiler versions
HP-UX 11.0 or later	aCC 3.45 with associated patches
RedHat Linux 7.2 and Enterprise version 2.1 and later	gcc 3.2.3
RedHat Linux 7.3 and later	gcc 3.2 <i>or</i> 3.2.3
SunOS 5.6 or later	gcc 3.2
Windows NT and other NT-based platforms (win2K, XP, etc.)	Minimalist GNU for Windows (MinGW) gcc 3.2.3

Discontinued and retiring operating systems

The following is a list of discontinued operating systems and their last-supported ModelSim release. Technical support will gladly answer questions regarding discontinued operating systems but no patches are available subsequent to the last supported ModelSim version.

We also want you to be aware of the operating systems we plan to retire. Retiring operating systems will receive patches through the number release indicated.

Operating System	Status	Last supported ModelSim version
AIX 3.2	discontinued	5.2b
AIX 4.1	discontinued	5.3d
Sun 4	discontinued	5.3d
SunOS 5_2.5.1	discontinued	5.4e
Win95	discontinued	5.5f
HP 10.20	discontinued	5.6e
AIX 4.2	discontinued	5.7x
Red Hat 6.0 - 7.1	discontinued	5.8x

Licensing

Overview

ModelSim uses FLEXlm licenses which are tied to a workstation or hardware ID (see below for how to locate your ID). When you purchase ModelSim, we will generate and email you a license file that you install on either a license server or the stand-alone system running ModelSim. The following is an abbreviated example of a license file:

```
SERVER gates 117234f39g1m 1650
DAEMON mgcld ./mglsl/lib/mgcld ./options
FEATURE hdlcom_c mgcld 2001.010 dd-mmm-yyyy 1 \
4C78A0D4F7D6D42760FC VENDOR_STRING=aaaaaaaa \
ISSUER="MTI Ops" ck=42
FEATURE hdlsim_c mgcld 2001.010 dd-mmm-yyyy 1 \
DC8840045A90791FBA9E VENDOR_STRING=aaaaaaaa \
ISSUER="MTI Ops" ck=15
```

The installation instructions on subsequent pages tell you how to install the license file. Keep in mind that you should modify the license file only as directed in these instructions. Make sure you do not inadvertently add spaces or line breaks to the file; this may prevent ModelSim from running.

Licensing on Windows platforms

On Windows platforms the hardware identifier may be either a hardware security key or an Ethernet ID. To determine a security key ID number, check the number printed on the key. To determine the Ethernet ID, select **Start > Run** then Open "cmd" (Windows NT/2000/XP), or Open "command.com" (Windows 98/Me) to open a command prompt. At the command prompt type:

```
doskey  
ipconfig -all |more
```

Check the configuration listing for your Ethernet "Physical Address". Windows 98 and Me users: Your listing may include two Physical Addresses; use the Physical Address for your Ethernet card, NOT the PPP Adapter.

Licensing on Unix platforms

On Unix platforms you'll need your workstation ID to obtain a license. Here are the commands that return the ID:

Syntax	Platform
/sbin/ifconfig eth0	Linux Look for the line that reads something like this: "Ethernet HWaddr 00:00:00:00:00:00." Remove the colons and you have the required 12-digit ID.
uname -i	HP-UX "uname -i" reports a long decimal number; convert to hexadecimal or pre-pend with #
uname -m	RS/6000 returns a long number; delete the last two digits and use the remaining last eight digits
hostid	SPARC

Mentor Graphics licensing on Unix platforms

To use ModelSim 6.0 in a Mentor Graphics environment you must be running MGLS version v5.1_2.0 (or newer) and Packaging Information version v3.0_8.0e (or newer). You can check your current versions using the following method:

1. Make sure the MGLS_HOME environment variable is set to
`<install directory>/modeltech/<platform>/mgl`s
2. Execute `$MGLS_HOME/bin/mgl`s_admin -v

If you are running a license server with an earlier version, the license server should be shut down and restarted using the license server (lmgrd) and vendor daemon (mgcld or modeltech) found in v5.1_2.0 MGLS. Platform-specific MGLS is included in the ModelSim installation at *<install directory>/modeltech/<platform>/mgl*s.

In ModelSim versions 5.4 (and later), the MGLS_HOME environment variable is set in a non-persistent way inside the simulation environment. If MGLS_HOME is already set, it will be changed temporarily to point at the known good mgls tree while ModelSim is invoked. MGLS_HOME's persistent setting will not be changed.

In ModelSim versions 5.5 (and later), the mgcld daemon is automatically installed into the binary directory when ModelSim is installed.

Installation

The commands used to install ModelSim are case-sensitive, so they must be entered exactly as shown. If you are upgrading, we recommend that you install in a new directory to avoid overwriting your old files and libraries.

Read the section(s) that applies to your environment and platform(s).

- Node-locked license on a stand-alone Windows PC (p13)
- Floating license on a stand-alone Windows PC (p15)
- Stand-alone Unix workstation (p17)
- Windows PC client (obtains license from a server) (p19)
- Unix client (obtains license from a server) (p20)
- Windows PC license server (p22)
- Unix license server (p25)



When referring to installation paths, this manual uses “modeltech” as a generic representation of the install directory for all versions of ModelSim. The actual install directory on your system may contain version information.

Node-locked license on a stand-alone Windows PC

Use this setup if you are installing on a stand-alone Windows PC with a node-locked license. Node-locked licenses are tied to a hardware key (attached either to the parallel port or a USB port) or system Ethernet ID. Therefore, ModelSim can be run on one system only. A hardware key may be moved from one system to another but ModelSim will run only on the system that has the key attached. In the case of an Ethernet ID, ModelSim can be run only on the system with that specific Ethernet ID.



If you are installing on an NT/2000/XP machine, make sure you are logged in as "administrator" when running the installation program.

1. If you received a hardware security key (dongle), install it on the parallel or USB port of your PC. Skip this step if you licensed ModelSim to the PC's Ethernet ID.
2. Install ModelSim from the CD or via a downloaded installation executable. The ModelSim installation executable is available on the web at <http://www.model.com/downloads>.
3. Once the software is done installing, you will be prompted to install a hardware security key driver. Choose **Yes** if you installed a security key in step 1; choose **No** if you licensed ModelSim to the PC's Ethernet ID.
4. After installation is complete, save the *license.dat* file (attached to the email you received from Model Technology) to *C:\modeltech\win32pe\license.dat*, or to your specific ModelSim pathname if different.

Make sure there are no extra spaces or line breaks in the license file. It must exactly match the license you received by email, including upper and lower case and any backslashes (\).

5. Set the LM_LICENSE_FILE environment variable with the pathname to the license file:
 - For Windows NT/2000/XP, right-click the My Computer icon and select Properties, and then select the Environment tab (in Windows 2000/XP select the Advanced tab and then Environment Variables).

Add LM_LICENSE_FILE with a value of
C:\modeltech\win32pe\license.dat (the path to the license file).

- For Windows 98/Me, add the following line to the autoexec.bat file:

```
set LM_LICENSE_FILE=C:\modeltech\win32pe\license.dat
```

6. Reboot your PC.
7. Invoke ModelSim through the Windows Start menu (**Start > Programs > Model Tech > Modelsim**).

Floating license on a stand-alone Windows PC

Use this setup if you are installing on a stand-alone Windows PC with a floating license. When stand-alone PCs use a floating license, ModelSim and the license server run on the same system.

1. If you received a hardware security key (dongle), install it on the parallel or USB port of your PC. Skip this step if you licensed ModelSim to the PC's Ethernet ID.
2. Install ModelSim from the CD or via a downloaded installation executable. The ModelSim installation executable is available on the web at <http://www.model.com/downloads>.
3. Once the software is done installing, you will be prompted to install a hardware security key driver. Choose **Yes** if you installed a security key in step 1; choose **No** if you licensed ModelSim to the PC's Ethernet ID.
4. After installation is complete, save the *license.dat* file (attached to the email you received from Model Technology) to *C:\modeltech\win32pe\license.dat*, or to your specific ModelSim pathname if different.

Make sure there are no extra spaces or line breaks in the license file. It must exactly match the license you received by email, including upper and lower case and any backslashes (\).

5. Verify the name of your PC via the Windows Control Panel by selecting Network > Identification (in Windows 2000/XP, System > Network Identification).
6. Open the *license.dat* file and change the server name to the name of your PC. Use a text editor like Notepad rather than a word processor. Word processors may add extra hidden formatting characters to the file and cause problems.

7. Set the LM_LICENSE_FILE environment variable with the port# and hostname:
 - For Windows NT/2000/XP, right-click the My Computer icon and select Properties, and then select the Environment tab (in Windows 2000/XP select the Advanced tab and then Environment Variables).

Add LM_LICENSE_FILE with a value of 1650@hostname, where hostname is the name of your PC.

- For Windows 98/Me, add the following line to the autoexec.bat file:

```
set LM_LICENSE_FILE=1650@hostname
```

where hostname is the name of your PC.

8. Reboot your PC.
9. Launch *lmtools.exe* from the `<install_dir>\modeltech\win32` directory.
10. Choose the Config Services tab and add the pathnames for *lmgrd.exe*, *license.dat*, and *debug.log*. Typical entries might look like this:

```
lmgrd.exe -- C:\modeltech\win32\lmgrd.exe  
License file -- C:\modeltech\win32\license.dat  
Debug log file -- C:\modeltech\win32\debug.log
```

Click **Save Setup** when you finish entering the pathnames.

11. Choose the Start/Stop/Reread tab and click **Start Server**.
12. To verify that the server started, choose the Config Services tab and click **View Log**. Look for two lines similar to the following:

```
14:31:00 (lmgrd) Starting vendor daemons ...  
14:31:00 (lmgrd) Started modeltech (pid 1088)
```

Close *lmtools* once the server is started.

13. Invoke ModelSim through the Windows Start menu (**Start > Programs > Model Tech > Modelsim**).

Stand-alone Unix workstation

Use this setup if you are running ModelSim on a stand-alone Unix workstation. ModelSim and the license server run on the same system.

1. From a mounted ModelSim CD or a downloaded file, uncompress *modeltech-base.tar.gz* and *modeltech-docs.tar.gz*. Compressed ModelSim installation files can be accessed on the web via <http://www.model.com/downloads>. Use **tar xzf** to extract the compressed files.
2. If you are using SystemC, uncompress the appropriate gcc compiler for your platform. For example:

```
tar xvf gcc-3.2-sunos58.tar
```

3. Uncompress and execute the appropriate *.exe* file for your platform:

Platform	<filename.exe>
HP-UX 11.0 (32-bit)	hp700.exe
HP-UX 11.0 (64-bit)	hppa64.exe
IBM (32-bit)	rs6000.exe
IBM AIX 4.3 (64-bit)	rs64.exe
Itanium 2 / Redhat Linux 7.2 (64-bit)	linux_ia64.exe
Itanium 2 / HP-UX B.11.22 (64-bit)	hpux_ia64.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (32-bit)	linux.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (64-bit)	linux_x86_64.exe
Sun OS-5/Solaris 2.6 Solaris 7, 8 (32-bit)	sunos5.exe

Installation

Platform	<filename.exe>
Sun OS-5 v9/ Solaris 7, 8 (64-bit)	sunos5v9.exe
x86 and Opteron	linux.exe or linuxle.exe
Opteron & Athlon 64/ Redhat EWS 3.0 (64-bit)	linux_x86_64.exe

Follow the onscreen instructions.

4. After installation is complete, save the *license.dat* file (attached to the email you received from Model Technology) into the *<install_path>/modeltech* directory.
5. Open the *license.dat* file and change the server name to the hostname of your workstation.
6. Start the license manager daemon with the following commands:

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

where *<platform>* can be *sunos5*, *sunos5v9*, *hp700*, *hppa64*, *hpux_ia64*, *rs6000*, *rs64*, *linux*, *linux_ia64*, or *linux_rh60*.

7. Set the *LM_LICENSE_FILE* environment variable to the hostname:

```
setenv LM_LICENSE_FILE 1650@hostname
```

8. Add the modeltech executables directory to your PATH:

```
PATH=<install_path>/modeltech/<platform>
```

where *<platform>* can be *sunos5*, *sunos5v9*, *hp700*, *hppa64*, *hpux_ia64*, *rs6000*, *rs64*, *linux*, *linuxle*, *linux_ia64*, or *linux_x86_64*.

9. Enter the following command at the shell prompt to start ModelSim:

```
vsim
```

Windows PC client (obtains license from a server)

Use this setup if you are installing on a Windows PC that will obtain a license from a Windows PC or Unix license server.

1. Install ModelSim from the CD or via a downloaded installation executable. The ModelSim installation executable can be accessed on the web via <http://www.model.com/downloads>.
2. Once the software is done installing, you will be prompted to install a hardware security key driver. Choose **No** since you are obtaining the license from a server.
3. Once installation is complete, check with your system administrator for the license server's hostname (the network machine name) and port# (1650 is the default port number).
4. Set the LM_LICENSE_FILE environment variable with the port# and hostname given you by the system administrator.
 - For Windows NT/2000/XP, right-click the My Computer icon and select Properties, and then select the Environment tab (in Windows 2000/XP select the Advanced tab and then Environment Variables).

Add LM_LICENSE_FILE with the value port#@hostname, reflecting the data given you by your system administrator.

- For Windows 98/Me, add the following line to the *autoexec.bat* file:

```
set LM_LICENSE_FILE=port#@hostname
```

where port# is the port number of the license server and hostname is the name of the license server.

5. Reboot your PC.
6. Make sure the license server is running, then invoke ModelSim through the Windows Start menu (**Start > Programs > Model Tech > Modelsim**).

Unix client (obtains license from a server)

Use this setup if you are installing on a Unix system that will obtain a license from a Unix or PC server.

1. From a mounted ModelSim CD or a downloaded file, uncompress *modeltech-base.tar.gz* and *modeltech-docs.tar.gz*. Compressed ModelSim installation files can be accessed on the web via <http://www.model.com/downloads>. Use **tar xzf** to extract the compressed files.
2. If you are using SystemC, uncompress the appropriate gcc compiler for your platform. For example:

```
tar xvf gcc-3.2-sunos58.tar
```

3. Uncompress and execute the appropriate .exe file for your platform:

Platform	<filename.exe>
HP-UX 11.0 (32-bit)	hp700.exe
HP-UX 11.0 (64-bit)	hppa64.exe
IBM (32-bit)	rs6000.exe
IBM AIX 4.3 (64-bit)	rs64.exe
Itanium 2 / Redhat Linux 7.2 (64-bit)	linux_ia64.exe
Itanium 2 / HP-UX B.11.22 (64-bit)	hpux_ia64.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (32-bit)	linux.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (64-bit)	linux_x86_64.exe
Sun OS-5/Solaris 2.6 Solaris 7, 8 (32-bit)	sunos5.exe

Platform	<filename.exe>
Sun OS-5 v9/ Solaris 7, 8 (64-bit)	sunos5v9.exe
x86 and Opteron	linux.exe or linuxle.exe
Opteron & Athlon 64/ Redhat EWS 3.0 (64-bit)	linux_x86_64.exe

Follow the onscreen instructions.

- Once installation is complete, check with your system administrator for the license server's hostname (the network machine name) and port# (1650 is the default port number).
- Set the LM_LICENSE_FILE environment variable with the port# and hostname:

```
setenv LM_LICENSE_FILE 1650@hostname
```

where hostname is the name of the license server.

- Add the modeltech executables directory to your PATH:

```
PATH=<install_path>/modeltech/<platform>
```

where <platform> can be sunos5, sunos5v9, hp700, hppa64, hpux_ia64, rs6000, rs64, linux, linuxle, linux_ia64, or linux_x86_64.

- Make sure the license server is running, then enter the following command at the shell prompt to start ModelSim:

```
vsim
```

Windows PC license server

Use this setup if you are installing a Windows PC license server that will checkout licenses to Windows or Unix clients. If you already have a FLEXlm installation on the server, you need only install the modeltech or mgcld daemon and the license file (contact [Model Technology support](#) if this is your situation).

1. If you received a hardware security key (dongle), install it on the parallel or USB port of your server. Skip this step if you licensed ModelSim to the server's Ethernet ID.
2. Install ModelSim from the CD or via a downloaded installation executable. The ModelSim installation executable can be accessed on the web via <http://www.model.com/downloads>.
3. Once the software is done installing, you will be prompted to install a hardware security key driver. Choose **Yes** if you installed a security key in step 1; choose **No** if you licensed ModelSim to the server's Ethernet ID.
4. After installation is complete, save the *license.dat* file (attached to the email you received from Model Technology) to *C:\modeltech\win32\license.dat*, or to your specific ModelSim pathname if different.

Make sure there are no extra spaces or line breaks in the license file. It must exactly match the license you received by email, including upper and lower case and any backslashes (\).

5. Verify the name of your server via the Windows Control Panel by selecting Network > Identification (in Windows 2000/XP, System > Network Identification).
6. Open the *license.dat* file and change the server name to the name of your server. Use a text editor like Notepad rather than a word processor. Word processors may add extra hidden formatting characters to the file and cause problems.

7. Set the LM_LICENSE_FILE environment variable with the port# and hostname.
 - For Windows NT/2000/XP, right-click the My Computer icon and select Properties, and then select the Environment tab (in Windows 2000/XP select the Advanced tab and then Environment Variables).

Add LM_LICENSE_FILE with a value of 1650@hostname, where hostname is the name of your server.

- For Windows 98/Me, add the following line to the autoexec.bat file:

```
set LM_LICENSE_FILE=1650@hostname
```

where hostname is the name of your server.

8. Reboot the server.
9. Launch *lmtools.exe* from the `<install_dir>\modeltech\win32` directory.
10. Choose the Config Services tab and add the pathnames for *lmgrd.exe*, *license.dat*, and *debug.log*. Typical entries might look like this:

```
lmgrd.exe -- C:\modeltech\win32\lmgrd.exe  
License file -- C:\modeltech\win32\license.dat  
Debug log file -- C:\modeltech\win32\debug.log
```

Click **Save Setup** when you finish entering the pathnames.

11. Choose the Start/Stop/Reread tab and click **Start Server**.
12. To verify that the server started, choose the Config Services tab and click **View Log**. Look for two lines similar to the following:

```
14:31:00 (lmgrd) Starting vendor daemons ...  
14:31:00 (lmgrd) Started modeltech (pid 1088)
```

Close *lmtools* once the server is started.

Troubleshooting Windows PC server setup

The **Licensing Wizard** located in the ModelSim program group can help you solve ModelSim licensing problems. Run the wizard on a client machine to check the availability of the license from your PC server.

In addition to running the Licensing Wizard, try the following:

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

```
lmutil.exe lmdiag
```

This allows you to verify each feature independently.

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

```
lmutil.exe lmstat -a
```

This shows you all licenses that are available.

- Go to the *debug.log* inside the *win32* directory. This may provide other information about the source of the license server problems.
- Verify that FLEXlm 8.2 was installed on the server. Launch *lmtools.exe* from the *<install_dir>\modeltech\win32* directory and select **Help > About**.

Unix license server

Use this setup if you are installing a Unix license server that will checkout licenses to clients. If you already have a FLEXlm installation on the server, you only need to install the modeltech or mgcld daemon and the license file. Contact [Model Technology support](#) for more information.

1. From a mounted ModelSim CD or a downloaded file, uncompress *modeltech-base.tar.gz* and *modeltech-docs.tar.gz*. Compressed ModelSim installation files can be accessed on the web via <http://www.model.com/downloads>. Use **tar xzf** to extract the compressed files.
2. Uncompress and execute the appropriate .exe file for your platform:

Platform	<filename.exe>
HP-UX 11.0 (32-bit)	hp700.exe
HP-UX 11.0 (64-bit)	hppa64.exe
IBM (32-bit)	rs6000.exe
IBM AIX 4.3 (64-bit)	rs64.exe
Itanium 2 / Redhat Linux 7.2 (64-bit)	linux_ia64.exe
Itanium 2 / HP-UX B.11.22 (64-bit)	hpux_ia64.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (32-bit)	linux.exe
EM64T / Redhat EWS 3.0 or SuSe 9.1 (64-bit)	linux_x86_64.exe
Sun OS-5/Solaris 2.6 Solaris 7, 8 (32-bit)	sunos5.exe
Sun OS-5 v9/ Solaris 7, 8 (64-bit)	sunos5v9.exe
x86 and Opteron	linux.exe or linuxle.exe

Installation

Platform	<filename.exe>
Opteron & Athlon 64/ Redhat EWS 3.0 (64-bit)	linux_x86_64.exe

Follow the onscreen instructions.

3. After installation is complete, save the *license.dat* file (attached to the email you received from Model Technology) into the *<install_path>/modeltech* directory.
4. Open the *license.dat* file and change the server name to the hostname of your server.
5. Start the license manager daemon with the following commands:

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

where *<platform>* can be *sunos5*, *sunos5v9*, *hp700*, *hppa64*, *hpux_ia64*, *rs6000*, *rs64*, *linux*, *linuxle*, *linux_ia64*, or *linux_x86_64*.

6. Set the *LM_LICENSE_FILE* environment variable with the port# and hostname:

```
setenv LM_LICENSE_FILE 1650@hostname
```

where *hostname* is the name of the license server.

Regenerating your design libraries

When you upgrade between number versions (e.g., from 5.7 to 5.8), you must regenerate your design libraries. This is not true for letter versions (e.g., 5.7a to 5.7d).

Regenerating methods

Explicit refresh

You can easily regenerate your design libraries with **-refresh**. You must use the **vcom** compiler with the **-refresh** option to update the VHDL design units in a library, and **vlog** with the **-refresh** option to update Verilog design units. 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
```

Rebuild libraries without source code

An important feature of **-refresh** is that it rebuilds the library image without using source code. This means that models delivered as compiled libraries without source code can be rebuilt for a specific release of ModelSim (4.6 and later only). In general, this works for moving forwards or backwards on a release. Moving backwards on a release may not work if the models used compiler switches or directives (Verilog only) that do not exist in the older release or if a bug was fixed that makes it impossible to do a “backwards” refresh.



You **don't** need to regenerate the `std`, `ieee`, `modelsim_lib`, `vital`, and `verilog` libraries as these are provided with each release of ModelSim. However, if you have your own copies of these libraries, you will need to refresh them.

AutoRefreshing

ModelSim 6.0 library files can be used by any 6.0 simulator type (PE, LE, SE, or SE/64-bit) with the help of AutoRefresh. AutoRefresh works during simulation loading to build the library files needed by the current simulator type.

AutoRefresh builds only the files needed by the loading simulation, and then only refreshes files for design units that have changed, leaving the rest of the library files untouched.

The binary details

AutoRefresh regenerates the binaries for PE/LE (.psm), SE (.asm), and SE/64-bit (.asm64) that are stored in the ModelSim libraries. For example, if a module is changed and recompiled on PE/LE, the next time an SE simulator tries to use that library, ModelSim automatically regenerates the necessary .asm files.

One library can contain the code for both formats. For example, for each design unit in a "work" library, there can be an SE and PE/LE version co-existing. In fact if you run a PE/LE-compiled design on SE (5.2e and later), it will auto-refresh itself when you invoke **vsim**. The library format that SE needs is generated "on the fly" from the PE/LE format. After that point, both formats exist in the library and no more format conversion will occur.

Why two different formats? The SE compiler has several performance optimizations that aren't in the PE/LE compiler. Consequently, the generated code for SE has to be different.

Library compatibility between versions

Libraries are compatible between different letter versions of the tool as long as the version number is the same. For example, 5.6 libraries are compatible with 5.6a, but not 5.5d.

Installed directories

A typical installation for ModelSim 6.0 includes the directories listed below. All directories are located within the *modeltech* directory.

Installed directories - ModelSim 6.0	
Directory	Description
<code>./bin</code>	soft links to all ModelSim commands, allowing platform-independent invocation
<code>./docs</code>	ModelSim documentation, general ModelSim technotes, HTML versions of the Tcl/Tk man pages
<code>./drivers</code>	drivers for Windows hardware keys
<code>./examples</code>	example simulation models, testbenches, macros, and utilities
<code>./gcc*</code>	gcc compiler tested for use with ModelSim
<code>./ieee</code>	library for accelerated IEEE and Synopsys arithmetic packages
<code>./ieeepure</code>	standard VHDL IEEE library
<code>./include</code>	include files for use with the WLF API, Verilog PLI/VPI, SystemVerilog API, VHDL foreign interface, and TCL
<code>./modelsim_lib</code>	library that contains special utilities for VHDL
<code>./std</code>	VHDL STD library and package TEXTIO
<code>./std_developerskit</code>	libraries for MGC standard developer's kit
<code>./synopsys</code>	accelerated arithmetic packages (also in ieee)
<code>./tcl</code>	libraries for Tcl, Tix, Tk, and vsim

Installed directories

Installed directories - ModelSim 6.0	
Directory	Description
./verilog	VHDL package for mapping to Verilog states
./vhdl_src/ieee	sources for rebuilding basic IEEE std_logic_1164 library and accelerated IEEE arithmetic packages
./vhdl_src/modelsim_lib	
./vhdl_src/std	sources for VHDL STD library and package TEXTIO
./vhdl_src/std_developerskit	sources and examples for MGC standard developer's kit
./vhdl_src/synopsys	sources for rebuilding accelerated arithmetic packages
./vhdl_src/verilog	source for rebuilding Verilog library
./vhdl_src/vital2.2b	sources for rebuilding VITAL version 2.2b library
./vhdl_src/vital95	sources for rebuilding VITAL version 95 library
./vhdl_src/vital2000	sources for rebuilding VITAL 2000 library

Platform-specific directories

Platform-specific directories within the *modeltech* directory (e.g., *linux*, *win32*, etc.) contain ModelSim, Logic Modeling, gdb, and licensing executables.

Library notes

Pre-compiled versions of some non-standard libraries and packages are no longer provided. The ARITHMETIC library, which contained a package for doing signed and unsigned vector arithmetic, is no longer included. However, you can download the source file at <ftp://ftp.model.com/pub/obsolete/arithmetric.tar>. The source for the ieee-precompiled version is in

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

The packages NUMERIC_EXTRA, NUMERIC_SIGNED, NUMERIC_UNSIGNED, and STD_LOGIC_1164_EXTENSIONS, all from the IEEE library, are no longer included. However you can download the source file at <ftp://ftp.model.com/pub/obsolete/mentor.tar>.

Tech Support and Updates

The Model Technology web site includes links to support, software updates, and many other information sources for both Model Technology and Mentor Graphics customers.

Support

Online and email technical support options, maintenance renewal, and links to international support contacts:

www.model.com/support/default.asp

Mentor Graphics support:

www.mentor.com/supportnet

Updates

Access to the most current version of ModelSim:

www.model.com/downloads

Latest version email

Place your name on our list for email notification of news and updates.

www.model.com/products/informant.asp

FLEXlm Licenses

ModelSim uses Macrovision's FLEXlm license manager and files. Macrovision 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.

ModelSim version 6.0 uses version 8.2 of FLEXlm. Sites that have existing license servers running an older version must shut down the servers and restart them using the license server (lmgrd) and vendor daemon (modeltech or mgcld) provided in this release.

Where to obtain your license

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

If you have trouble with licensing

Contact your normal technical support channel. See www.model.com/support/default.asp for details.

Maintenance renewals and licenses

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

License transfers and server changes

There is a charge for server changes or license transfers. Contact sales@model.com for more information or contact your local Mentor Graphics sales office.

License file examples

A node-locked *license.dat* file for FLEXid keys:

```
FEATURE vcom modeltech 1999.050 04-may-1999 0 \
2C0534248F9BC5B764CE " " FLEXID=7-b285f259
FEATURE vsim modeltech 1999.050 04-may-1999 0 \
4C254404F97335475064 " " FLEXID=7-b285f259
```

A floating *license.dat* file:

```
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 hdlstim 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 Macrovision FLEXlm floating 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 SERVER line

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 ModelSim 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 port number. The hostname and port 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 or the machine's Ethernet ID. The possible security key numbers include: 6-xxxxxxx or 7-xxxxxxx for Sentinel keys; 8-xxxxxxx for Dallas keys; 9-xxxxxxx for Aladdin USB keys.



Dallas key IDs (8-xxxxxxx) must be upper case. Aladdin USB key IDs (9-xxxxxxx) must be lower case.

See "Licensing" (p9) for information on how to locate a server or key ID.

The DAEMON line

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 or mgcld 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* or *mgcld* and *options* files would need to be added to this line.

For example,

```
DAEMON modeltech /usr/mti5.8/sunos5/modeltech \  
/usr/mti5.8/sunos5/options
```



The "options" line is only necessary if you are using a FLEXlm options file.

The FEATURE line

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.

If a FEATURE entry is too long to fit on a single line, 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.

FEATURE lines in a floating license 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. (FLEXlm has a utility that will report any checksum errors in a file. Use this command: `lmchksum <license.file>`). Lines that start with "#" are comments.

FEATURE lines in a node-locked license for a FLEXlm key end with the security key number.

Feature names

The names on the feature lines in the license file correspond to particular functions in ModelSim. The functional tasks for each of the license features are described in the table below. The '_c' suffix denotes a license file that uses the MGCLD daemon. The 'qh' and 'msim' prefixes denote license files that were generated by Mentor Graphics.

Feature name	Description
cdebug, cdebug_c, msimcdebug	C Debug
dataflow, dataflow_c, msimdataflow	dataflow window
hdlcom, hdlcom_c, msimhdlcom	language neutral compiler (vhdl or verilog)
hdlmix, hdlmix_c, msimhdlmix	mixed-language simulator
hdlsim, hdlsim_c, msimhdlsim	language neutral simulator
le-vsimg-vlog, levsimgvlog_c, msimlevsimgvlog	LE verilog compiler and simulator
pe-swift, peswift_c, msimpeswift	PE SWIFT software models
pe-vcom, pevcom_c, msimpevcom	PE vhdl compiler
pe-vlog, pevlog_c, msimpevlog	PE verilog compiler
pe-vsimg, pevsmg_c, msimpevsimg	PE vhdl simulator
pe-vsimg-vlog, pevsmgvlog_c, msimpevsimgvlog	PE verilog simulator
systemc, systemc_c, msimsystemc	SystemC compiler and simulator
vcom, vcom_c, qhvhcom	VHDL compiler
vlog, vlog_c, qhvlcom	Verilog compiler
vsimg, vsimg_c, qhsimgvh	VHDL simulation
vsimg-vlog, vsimgvlog_c, qhsimgvl	Verilog simulation

FLEXIm Licenses

Feature name	Description
vsim-compare, vsimcompare_c, msimcompare	waveform compare
vsim-coverage, vsimcoverage_c, msimcoverage	code coverage
vsim-profile, vsimprofile_c, msimprofile	performance profiler
vsim-viewer, vsimviewer_c	waveform viewer
mtverification	general verification license (PSL and SystemVerilog assertions, functional coverage)

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16. **SEVERABILITY.** If any provision of this Agreement is held by a court of competent jurisdiction to be void, invalid, unenforceable or illegal, such provision shall be severed from this Agreement and the remaining provisions will remain in full force and effect.
17. **PAYMENT TERMS AND MISCELLANEOUS.** You will pay amounts invoiced, in the currency specified on the applicable invoice, within 30 days from the date of such invoice. This Agreement contains the parties' entire understanding relating to its subject matter and supersedes all prior or contemporaneous agreements, including but not limited to any purchase order terms and conditions, except valid license agreements related to the subject matter of this Agreement (which are physically signed by you and an authorized agent of Mentor Graphics) either referenced in the purchase order or otherwise governing this subject matter. This Agreement may only be modified in writing by authorized representatives of the parties. Waiver of terms or excuse of breach must be in writing and shall not constitute subsequent consent, waiver or excuse. The prevailing party in any legal action regarding the subject matter of this Agreement shall be entitled to recover, in addition to other relief, reasonable attorneys' fees and expenses.

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Keep these numbers handy for tech support:

UNIX server hostid # :

FLEXid security key # :

Ethernet ID # :

Rainbow dongle # :
