

Saber® Installation Guide

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SYNOPSIS®

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Installing Saber

This document describes how to install Saber. It includes instructions for installing the Saber simulator, Saber HDL, and design environment on UNIX, Linux, and Windows platforms. Several other tools, including the CosmosScope waveform analyzer install with the Saber simulator.

This document includes the following sections:

- [Preparing for Installation](#)
- [Installing the Software on UNIX, Linux, and Windows](#)
- [Invoking Saber on Windows](#)
- [Setting Up the User Environment on UNIX and Linux](#)
- [Verifying the Saber Installation on UNIX and Linux](#)
- [Using Command Options](#)
- [Troubleshooting Saber Licensing](#)
- [Uninstalling the Software](#)
- [Customer Support](#)

Important:

Install the latest version of Saber in a new folder. A common license can serve multiple versions of Saber.

Important:

The installation instructions in this document are the most up-to-date available at the time of production. However, changes might have occurred. For the latest installation information, see Saber release notes or documentation.

Preparing for Installation

The following points are prerequisites for the installation process.

- If you have not already done so, retrieve your license keys from the SmartKeys Web page at <http://solvnet.synopsys.com/smartkeys>
For detailed licensing information, see the Synopsys Licensing QuickStart Guide Web page at <http://www.synopsys.com/keys>
- *UNIX and Linux users:* You must have root or administration privileges when installing licensing or tools in a restricted directory location. The installation script requires that the Bourne shell is available at /bin/sh.
- *Windows users:* You must have administration privileges for installing and uninstalling the tool. In addition, you must close all running Saber applications (Sketch or Saber) before starting any Saber installation processes on Windows.
- To download the software by electronic software transfer (EST), you must have Netscape Navigator 4.0 or later, Microsoft Internet Explorer 4.0 or later, or Mozilla 1.x or later.
- Verify that your disk space is adequate. See [Table 3 on page 6](#) for information on disk space requirements for each platform.
- By default, the interface files that support MATLAB version 7.0 SP2 are installed. When you set the PATH environment variable, put the value for MATLAB in front of the other values. For example,

```
% PATH = C:\Program Files\MATLAB7.0\bin\win32; \  
C:\synopsys\version\ai_bin
```

For access to other versions of MATLAB, see the INSTALL_README.wri file. For instructions about setting up other optional software (Cadence, Mentor, ModelSim, Verilog) see the [Installing Saber Optional Software](#) chapter

The *Saber Release Notes* provides information about changes in licensing, memory requirements, and supported platforms, as well as other enhancements and changes regarding the Saber tool.

To read the release notes,

1. Go to <https://solvnet.synopsys.com/ReleaseNotes> (If prompted, enter your user name and password. If you do not have a Synopsys user name and password, follow the instructions to register with SolvNet.)
2. Click Saber, then click the release you want in the list that appears at the bottom.

The Release Notes are in Portable Document Format (PDF) and require a PDF file reader to view and print them.

Note:

To view and print Saber documentation in Portable Document Format (PDF), you must have Adobe Acrobat Reader installed on your machine. To acquire the latest version of the Adobe Reader software, free of charge, go to <http://www.adobe.com/> and click the Get Adobe Reader button. Follow the instructions on the Web page.

The following sections describe:

[Supported Platforms and Compilers](#)

[Disk Space and Memory Requirements](#)

[Installing the Software on UNIX, Linux, and Windows](#)

[Invoking Saber on Windows](#)

[Invoking Saber on UNIX and Linux](#)

[Troubleshooting Saber Licensing](#)

[Uninstalling the Software](#)

[Customer Support](#)

Supported Platforms and Compilers

Saber and Saber HDL are available on CD or by EST. Obtain the appropriate binary executable files for your operating system. [Table 1 on page 4](#) lists the supported platforms for this release. Note that Saber HDL installs only on Solaris, Linux, and Windows platforms.

Note:

For platform support for co-simulator interfaces and frameway interfaces and integrations, including Frameway Integration for Mentor Graphics and the Frameway Integration for Cadence, see the *Saber Release Notes* in SolvNet.

Table 1 Supported Platforms, Operating Systems, and Keywords

Platform	Operating system	Synopsys platform keyword
AMD Opteron	Red Hat Enterprise Linux v 4.5 ¹	amd64 (64-bit mode)
HP PA-RISC 2.0	HP-UX 11.0, 11.11 (11i) ¹	hp32 (32-bit mode)
Sun SPARC	Solaris 9, 10 ¹ (Solaris 9 with shared library patch 111711-12 or later)	sparcOS5 (32-bit mode)
IA-32 (x86)	Red Hat Enterprise Linux v4, 5 ¹ (with update 5)	linux (32-bit mode)
IA-32 (x86)	Windows XP Professional v2002	winXP
	Windows 2000 SP3 or higher	win2000

1. *Binary-compatible hardware platform or operating system. Note, however, that binary compatibility is not guaranteed.*

The Saber tools work with the Solaris operating system in combination with a FORTRAN, C, or C++ compiler. You will need one of these compilers if you are performing any of the following tasks:

- Writing templates that call routines in a language other than the MAST modeling language (“foreign” routines)

- Writing user-defined batch measures
- Providing user-defined windowing functions for a fast Fourier transform (FFT) analysis executed from within Saber
- Installing the mixed-signal interface if you choose certain Verilog-XL options

Table 2 shows the supported compilers for each platform.

Table 2 Compatible Operating System Compilers

Operating system	C	C++	FORTRAN
HP 9000 PA-RISC 2.0 (HP 8000) using HP-UX 11 (32-bit)	B.11.11.04	A.03.33	B.11.01.42
Red Hat Enterprise Linux (IA-32 (x86))	gcc 3.3.6	g++ 3.3.6	g77 3.3.6
Microsoft Windows 2000 (32-bit)	MS Visual .NET	MS Visual .NET	Intel Visual Fortran 9.0 with patch 24
Sun Solaris (SPARC)	5.5 (Sun Studio 8)	5.5 (Sun Studio 8)	5.5 (Sun Studio 8)

The following sections describe:

- [Disk Space and Memory Requirements](#)
- [Installing the Software on UNIX, Linux, and Windows](#)
- [Invoking Saber on Windows](#)
- [Invoking Saber on UNIX and Linux](#)
- [Troubleshooting Saber Licensing](#)
- [Uninstalling the Software](#)
- [Customer Support](#)

Disk Space and Memory Requirements

The disk space requirement varies depending on the platform and the features selected for installation. Table 3 shows the maximum space required for installing all Saber features on a particular platform. Each CD also includes this information in the top-level INSTALL_README.wri file.

Table 3 Saber Disk Space and Memory Requirements (in Megabytes)

Platform	Software (maximum)	Default temporary directory location	Temporary disk space from CD	Temporary disk space from EST
HP-UX	1060	/var/tmp	350	350
Sun Solaris	1470	/var/tmp	400	400
Linux	1500	/tmp	390	390
Windows	1310	%TEMP% or C:\My Documents\temp	365	365

The following sections describe:

[Installing the Software on UNIX, Linux, and Windows](#)

[Invoking Saber on Windows](#)

[Invoking Saber on UNIX and Linux](#)

[Troubleshooting Saber Licensing](#)

[Uninstalling the Software](#)

[Customer Support](#)

Installing the Software on UNIX, Linux, and Windows

You can install Saber and Saber HDL using the common install GUI. To install Saber by using text commands, see *Installing Synopsys Tools*, available at <http://www.synopsys.com/install>

The following sections describe:

[Installing the Software by EST](#)

[Installing the Software From a CD](#)

[Running the Installation Program](#)

Installing the Software by EST

Download the Saber release to a temporary directory. You can obtain the latest Saber download instructions from the Release Library, which is accessible through SolvNet.

To install the software on UNIX and Linux systems,

1. Double-click the downloaded file, or enter the file name at the command prompt.
2. Continue with the steps in [Installing Synopsys Tools](#).

To install the software on Windows systems,

1. Locate and double-click the .exe file. For example, double-click `Saber_version_win.exe` where *version* is the release you are installing.
2. Continue with the steps in [Installing Synopsys Tools](#).

The following sections describe:

[Installing the Software From a CD](#)

[Running the Installation Program](#)

Installing the Software From a CD

Mounting the CD might require root access privileges. If you do not have root access privileges, see your system administrator for instructions on mounting the CD. For detailed instructions, see [Installing Synopsys Tools](#).

To mount the CD on UNIX and Linux systems,

1. Place the CD in the CD drive.

Most UNIX and Linux systems will automatically mount the CD. If the CD does not mount, see [Installing Synopsys Tools](#).

2. To invoke the installer, enter

```
% /cdrom/saber_version_platform.bin
```

or

```
% cd your_cd_path; ./saber_version_platform
```

3. Continue with the steps in [Installing Synopsys Tools](#).

To mount the CD on Windows systems,

1. Place the CD in the CD drive.

The installation program should start automatically. If it does not, double-click the setup.exe executable file, located at the root level of the CD. For example,

```
D:\saber_version_win.exe
```

where D is your CD drive.

2. Continue with the steps in “[Running the Installation Program](#),” next.

The following section describes:

[Running the Installation Program](#)

Running the Installation Program

Make certain that any open applications are closed before proceeding with the installation. Also, consider disabling virus checking for the duration of the installation process, because virus checks can slow the installation process.

When the installation program begins, the Welcome screen appears. Answer the installation prompts and click Next to continue. If scroll bars appear in the panel, scroll to make sure you have reviewed all available information.

Only the path destination screen, which requires more explanation, is shown. (Note that selections shown in this screen are for demonstration purposes only and might not reflect the current product version.)

1. Read the Welcome Screen.
2. In the Installation Type window, select the type of installation you want to perform.

UNIX and Linux: Select a Typical or Custom installation.

Windows: Select a Typical or Custom installation, or select a Network installation to establish network access from a client machine to previously installed products on a remote machine.

3. If you selected a Typical or Custom installation, enter a directory name that does not include spaces in the Destination box. You can also use the Browse button to select a directory.
4. (Windows only) If you have chosen to perform a network installation, create a network mapped drive to a remote machine on which the Saber software was previously installed. If not, skip to step 6.
5. (Windows only) Set up network access to a remote machine.

Note:

The Network installation option allows you to link to Saber applications, which are installed on other Windows machines. It is assumed that a stand-alone Saber installation has already been performed on that machine.

Using Saber via a network installation is slow and results in poor performance when compared to a local installation.

Chapter 1: Installing Saber

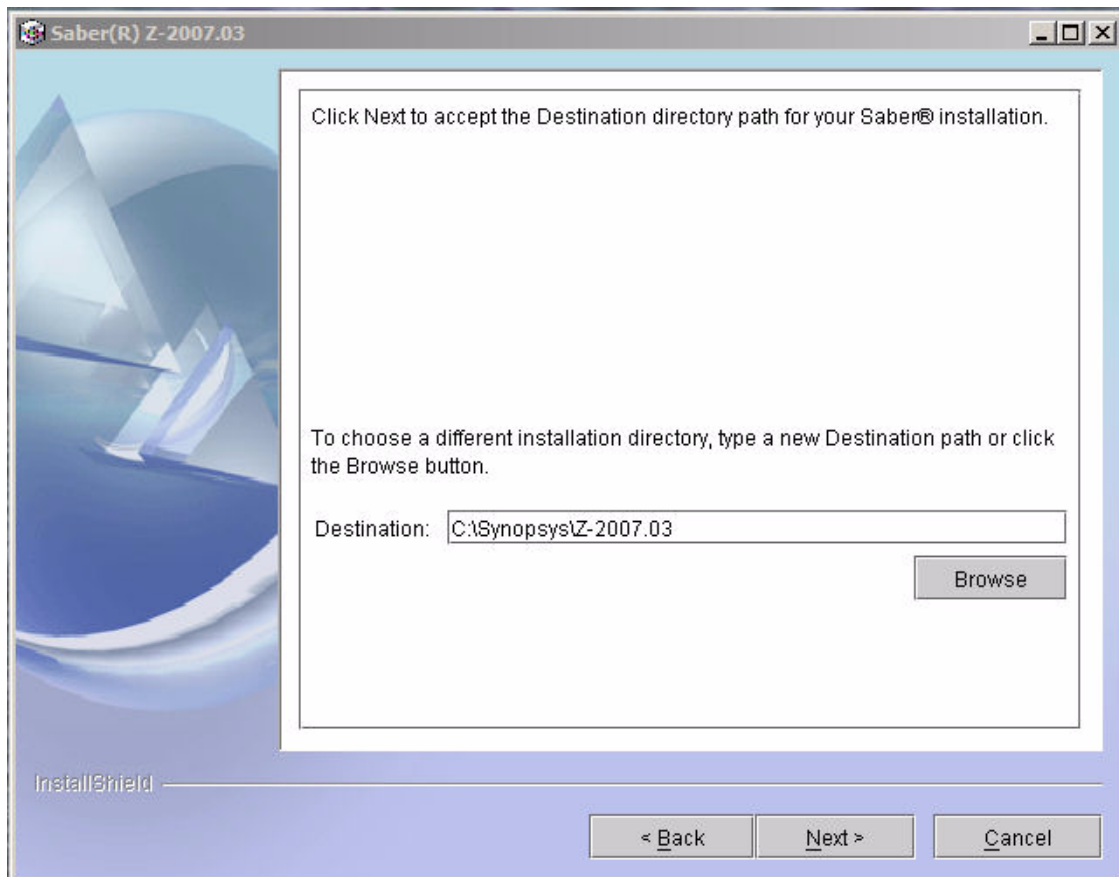
Installing the Software on UNIX, Linux, and Windows

- Enter the source path by using the previously created mapped drive, which resolves to the location where the ai_bin directory is located. For example,

S:\Synopsys\Z-2007.03

where S: is your network mapped drive.

- Enter a destination path name to a location on the local host machine where a minimal set of files will be installed. In the Browse window, navigate to the directory you want, for example, Z-2007.03. Select this directory and click the Open button. The path to the Z-2007.03 directory is inserted in the Source box.



6. If you selected a custom installation, select the Saber features you want to install.

7. You will see a screen that asks you to wait while the disk space is being verified. Then the summary information screen appears. This screen summarizes the selections you have made and the disk space requirements.
8. Wait while the products are installed.

While files are being copied, you can track the Installation progress in the progress bar. When the bar shows a 100 percent progress, a Release Notes dialog box opens. Click Yes to read the release notes, click No to continue. You must wait while the uninstall program is created. The final installation status is then displayed, with the message that the tool has finished installing.

If errors are displayed in the final installation status, see the install log for details.
9. Click Finish to exit the installation program.

The following sections describe:

- [Invoking Saber on Windows](#)
- [Invoking Saber on UNIX and Linux](#)
- [Troubleshooting Saber Licensing](#)
- [Uninstalling the Software](#)
- [Customer Support](#)

Invoking Saber on Windows

Beginning in December 2005, regardless of which version of Saber you are installing, you must use Synopsys Common Licensing 10.9.1 or later, which requires only a single license daemon, `snpslmd`. For additional information, see *Installing Synopsys Tools*.

To run Saber on Windows platforms,

1. Check that your `SNPSLMD_LICENSE_FILE`, `LM_LICENSE_FILE`, or another tool-specific license variable is set to a valid licensing server. If licenses are not available, the Saber Simulator will fail when invoked.

The port and host name variables correspond to the TCP port and license server host name specified in the `SERVER` line of the Synopsys license file.

Chapter 1: Installing Saber

Invoking Saber on UNIX and Linux

Each license file can contain licenses for many packages from multiple vendors. You can specify multiple license files by separating each entry with a semicolon (;).

2. Start the tool by going to Start > Programs > Synopsys > Saber *version* > Saber Simulator.

The Saber window opens.

3. To check the product version, choose Help > About Saber, and in the window that opens, click Copyright/Legal, then scroll to the bottom of the screen to view the version.
4. To exit Saber, choose File > Exit.

The following sections describe:

[Invoking Saber on UNIX and Linux](#)

[Troubleshooting Saber Licensing](#)

[Uninstalling the Software](#)

[Customer Support](#)

Invoking Saber on UNIX and Linux

This section explains how to invoke Saber on UNIX and Linux. The following sections describe:

[Setting Up the User Environment on UNIX and Linux](#)

[Specifying the Executable File Location](#)

[Setting the SNPSLMD_LICENSE_FILE or LM_LICENSE_FILE Environment Variable](#)

[Verifying the Saber Installation on UNIX and Linux](#)

[Using Command Options](#)

Setting Up the User Environment on UNIX and Linux

To set up the user environment, you must specify the location of the executable files and set the license environment variable. The directory containing the executable commands is located within the ai_bin directory in the *install_home* installation root.

The following sections describe:

[Specifying the Executable File Location](#)

[Setting the SNPSLMD_LICENSE_FILE or LM_LICENSE_FILE Environment Variable](#)

[Verifying the Saber Installation on UNIX and Linux](#)

[Using Command Options](#)

Specifying the Executable File Location

To set up a new Saber user, add the executable file to the path.

- If you are using the C shell, add the following line to the `.cshrc` file:

```
setenv PATH install_home/ai_bin:$PATH
```
- If you are using the Bourne, Korn, or Bash shell, add the following line to the `.profile`, `.kshrc`, or `.bashrc` file:

```
PATH=install_home/ai_bin:$PATH  
export $PATH
```

The following sections describe:

[Setting the SNPSLMD_LICENSE_FILE or LM_LICENSE_FILE Environment Variable](#)

[Verifying the Saber Installation on UNIX and Linux](#)

[Using Command Options](#)

Setting the SNPSLMD_LICENSE_FILE or LM_LICENSE_FILE Environment Variable

You must install the SCL software and define the `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` before you can verify the Saber installation.

For information about downloading and installing SCL and on setting the license variable, see [Installing Synopsys Tools](#).

Specifying the Executable File Location

To set up a new Saber user, add the executable file to the path.

- If you are using the C shell, add the following line to the `.cshrc` file:

```
setenv PATH install_home/ai_bin:$PATH
```

- If you are using the Bourne, Korn, or Bash shell, add the following line to the `.profile`, `.kshrc`, or `.bashrc` file:

```
PATH=install_home/ai_bin:$PATH  
export $PATH
```

The following sections describe:

[Verifying the Saber Installation on UNIX and Linux](#)

[Using Command Options](#)

Verifying the Saber Installation on UNIX and Linux

To verify the installation of the Saber tools,

1. Make sure you are in a directory where you have read/write privileges.

```
% cd $HOME
```

2. Invoke the tool by entering

```
% saber
```

or

```
% saberhdl
```

If the Saber tools are correctly installed, this command invokes the tool, displays the welcome screen, then opens the tool.

Specifying the Executable File Location

To set up a new Saber user, add the executable file to the path.

- If you are using the C shell, add the following line to the `.cshrc` file:

```
setenv PATH install_home/ai_bin:$PATH
```

- If you are using the Bourne, Korn, or Bash shell, add the following line to the `.profile`, `.kshrc`, or `.bashrc` file:

```
PATH=install_home/ai_bin:$PATH  
export $PATH
```

The following section describes:

[Using Command Options](#)

Using Command Options

You can install Saber on UNIX and Linux platforms by using the `setup` script command and on Windows platforms by invoking the `setup.exe` installation program. By default, the Saber installer invokes the GUI installation program on all platforms. If you want to install the software in silent mode or in the background, use the `-silent` command-line option, which is supported on all platforms. If you do not use the `-silent` option at the command line, any option you enter is reflected in the GUI.

The following options are available from the command line. Unless otherwise indicated, they are available for UNIX, Linux, and Windows systems.

Usage: `setup [options]`

`-silent`

Suppresses all graphics output. When you use the `-silent` option, Saber is installed in the default directory, `C:\Synopsys\version`.

`-installdir destination_directory`

Installs files to a destination directory. The path name cannot include spaces.

`-typical (default)`

Installs typical features.

Chapter 1: Installing Saber

Using Command Options

```
-custom all | feature1 feature2 ...
```

Select one or more features to install: SaberSimulator, SaberSketch, CosmosScope, SaberHarness, ComponentLibrary, TemplateLibrary, eProductsDesigner, Cadence, and MentorGraphics.

FrameWay features (Cadence, eProductsDesigner, and MentorGraphics) might not be available on all platforms.

```
-license port host1 [host2 host3] [license file]
```

Windows

Sets up licensing services on Windows platforms. If you specify a license file, the file must already exist and have an absolute path name. If you don't specify a license file, the default license file path name is used. You can change the default after installation.

The `LM_LICENSE_FILE` environment variable is set using the port and host information specified. If the `LM_LICENSE_FILE` environment variable already exists, only unique port and host information will be added.

To set up or modify a local Windows license server, use the Macrovision LMTOOLS program, which you can access by choosing Start > Programs > Synopsys > Saber *version* > License Tool.

To set or modify the `LM_LICENSE_FILE` environment variable, open the Control Panel and choose System > Environment (Windows NT) or System > Advanced > Environment Variables (Windows 2000 or later). You cannot use LMTOOLS to modify environment variables.

`-is:tempdir temporary_directory`

Specify an alternative location in which to store temporary files. On UNIX and Linux platforms, the default temporary directory might not contain enough free space to install the tool, causing the installer to terminate abnormally.

The following sections describe:

[Troubleshooting Saber Licensing](#)

[Uninstalling the Software](#)

[Customer Support](#)

Troubleshooting Saber Licensing

If you see this licensing error,

“Could not get the license package SABER_SKETCH”

check the following settings:

UNIX: Check the `LM_LICENSE_FILE` environment variable to make certain it is set to `27000@hostname`.

Windows: Check the location of the license file in the LMTOOLS Config service tab. If required, reread the license file in the Start/Stop/Reread dialog box.

The following sections describe:

[Uninstalling the Software](#)

[Customer Support](#)

Uninstalling the Software

To uninstall the software on UNIX and Linux,

- Execute the uninstall program, which is located in the *Install_home/_Saber* directory, or delete the entire software directory.

If you delete the directory, you must also delete the *vpd.properties* file located in your home directory.

To uninstall the software on Windows,

- From the Control Panel, select “Add/remove programs.”
or
- Choose Start > Programs > Synopsys > Saber *version* > Uninstall.
or
- Execute the uninstall program. For Saber, the uninstall program is located in the *Install_home_Saber* directory. For example,

```
c:> install_home\_saber\uninstall
```

The following section describes:

[Customer Support](#)

Customer Support

The following support centers are available:

United States

- Oregon office: 866-898-6700 or 503-547-6700, or send an e-mail message to saber-hotline@synopsys.com

International

- Germany: Telephone +49-89-99-320-0, fax +49-89-99-320-117, or e-mail saber-hotline-ge@synopsys.com
- France: Telephone +33 (0) 1 45 12 04 76, fax +33 (0) 1 45 12 07 07, or e-mail saber-hotline-fr@synopsys.com
- Sweden: Telephone +46 08 555 20220, fax +46 08 55520249, or e-mail saber-hotline-swe@synopsys.com

Installing Saber Optional Software

This document describes how to install the optional Saber tools in the following sections:

- [Installing the Frameway Integration for Mentor Graphics](#)
- [Troubleshooting a Frameway Integration for Mentor Graphics Installation](#)
- [Installing the Saber Co-Simulation Interface With ModelSim](#)
- [Installing the Frameway Integration for Cadence](#)
- [Installing the Saber Co-Simulation Interface With Verilog](#)
- [Setting Up the Software to Use a Remote System](#)
- [Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)
- [Installing the Frameway Integration for eProduct Designer](#)

Installing the Frameway Integration for Mentor Graphics

This section describes how to install the Frameway Integration for Mentor Graphics option, how to set up your environment, and what to do if problems occur.

The Frameway Integration for the Mentor Graphics Falcon Framework is loaded when you select MGC Frameway Integration on the installation tool menu as a part of the software installation procedure.

For the Saber netlister to function, you must load the CDP package when you install the Mentor Graphics software. The complete package name is

CDP V8 Ap SW

Chapter 2: Installing Saber Optional Software

Installing the Frameway Integration for Mentor Graphics

Note:

The `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` license variable and the `PATH` environment variable must be defined before you run the Frameway Integration or Co-Simulation Interface option.

```
% set PATH= (install_home/ai_bin $PATH)
```

where `install_home` is the path to the Saber home directory.

(For detailed instructions on setting the license variable, see *Installing Synopsys Tools*, available at http://www.synopsys.com/support/installation/install_guide.html.)

Installing the Software

To install the Frameway Integration for Mentor Graphics option,

1. Verify that `$MGC_HOME` is set, and test the Mentor Graphics products: Design Manager, Design Architect, and Design Viewpoint Editor.
 - To invoke Design Manager, enter `dmgr`.
Exit Design Manager.
 - To invoke Design Architect, enter `da`.
Exit Design Architect.
 - To invoke Design Viewpoint Editor, enter `dve`.
Exit Design Viewpoint Editor.
2. Set up the Mentor Graphics `gen_lib` library.
 - a. Load the Mentor Graphics `gen_lib` library according to the instructions provided by Mentor Graphics.
 - b. Direct the software to the library by using one of the following methods:

Define `MGC_GENLIB` only in the location map file. Usually this definition will have already been set as part of the Design Architect installation procedure. For more information, see the *Installing Mentor Graphics Software* manual.

Include the location of the `gen_lib` library in the `MGC_GENLIB` environment variable. If you set this environment variable, you can also include an `MGC_GENLIB` entry in a location map file or not use a location map at all.

3. Verify that the Saber simulator is installed and works correctly.
4. Load the Frameway Integration software.

If you did not load the Frameway Integration for the Mentor Graphics Falcon Framework software at the time the Saber simulator was installed, do so now.

5. Add the license information to the license file. If needed, install the licenses for the Saber/Verilog Co-Simulation option and the Digital Simulation option.
6. Copy the Saber.dofile files and create symbolic links.

To take advantage of Design Architect and Design Viewpoint userware, you must copy the .dofile file from the installation directory to the Mentor Graphics MGC_HOME directory.

- a. Make this location your current (working) directory. For example, on a Sun system enter

```
% cd $MGC_HOME/shared/etc/cust
```

- b. If the following directories do not already exist, create and change to them:

```
% mkdir dve
```

```
% cd dve
```

```
% mkdir userware
```

```
% cd userware
```

```
% mkdir En_na
```

- c. Create the following symbolic link:

```
% ln -s En_na default
```

- d. Copy the .dofile files by entering

```
% cp $install_home/Saber/framework/falcon/ \
    userware/dve/setup_Saber.dofile default
```

- e. Return to your home directory.

```
% cd
```

7. Create or modify environment variables in your startup file.

If you have scripts that automatically configure your environment, be aware that they can overwrite some of the environment variables mentioned in this step. You should place the variable declarations described in this step so that they are executed last.

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Installing the Framework Integration for Mentor Graphics

To automatically set up your environment variables, use a text editor to create the lines in your startup file.

UNIX: For the `.cshrc` file in the C shell,

- Enter the following lines in the `.cshrc` file after the `setenv install_home` and `setenv MGC_HOME` variable definitions:

```
setenv SABER_FALCON $install_home/Saber/framework/
falcon
setenv AMPLE_PATH $SABER_FALCON/userware
setenv MGC_TYPE_REGISTRY $SABER_FALCON/saber_rgy/
registry/ \
    type_registry/saber.rgy
setenv ANLG_IPC_PKG $install_home/Saber/framework/ \
    falcon/ipc
setenv ANALOGY_SABER available
setenv SABER_MGC8_SYMBOLS $SABER_FALCON/symbols
```

The order of these lines in your `.cshrc` file is important.

Note:

If `AMPLE_PATH` exists, add `$SABER_FALCON/userware` to the colon-separated list of paths. Typically, this path is placed at the end of the list, but you must determine the appropriate order of the list (enter as all one line). If `MGC_TYPE_REGISTRY` already exists, just add `$SABER_FALCON/saber_rgy/registry/type_registry/saber.rgy` to the colon-separated list of paths. The following is an example of how these would be listed in your `.cshrc` file:

```
setenv AMPLE_PATH $AMPLE_PATH:$SABER_FALCON/userware
setenv MGC_TYPE_REGISTRY$MGC_TYPE_REGISTRY:$SABER_FALCON/ \
    saber_rgy/registry/type_registry/saber.rgy
```

For the `.profile` file in the Bourne shell,

- Enter the following lines in the `.profile` file after the `install_home` and `MGC_HOME` environment variable definitions:

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Installing the Frameway Integration for Mentor Graphics

```
SABER_FALCON="install_home/Saber/framework/falcon"
AMPLE_PATH="$SABER_FALCON/userware"
MGC_TYPE_REGISTRY="$SABER_FALCON/saber_rgy/registry/
\
type_registry/saber.rgy"
ANGL_IPC_PKG="install_home/Saber/framework/falcon/ \
ipc" $SABER_FALCON/
ANALOGY_SABER=available
SABER_MGC8_SYMBOLS="$SABER_FALCON/symbols"
export SABER_FALCON
export AMPLE_PATH
export MGC_TYPE_REGISTRY
export ANLG_IPC_PKG
export ANALOGY_SABER
export SABER_MGC8_SYMBOLS
```

The order of these lines in your .profile file is important.

Note:

If AMPLE_PATH or MGC_TYPE_REGISTRY already exist, add the paths specified above to the existing colon-separated list of paths. For example, the previous AMPLE_PATH and MGC_TYPE_REGISTRY entries could be replaced with the following:

```
AMPLE_PATH="$AMPLE_PATH:$SABER_FALCON/userware"
MGC_TYPE_REGISTRY="$MGC_TYPE_REGISTRY: \
$SABER_FALCON/saber_rgy/registry/type_registry/ \
saber.rgy"
```

Windows: On Windows platforms, the Mentor environment variables can be set either in the profile file or from the Start menu.

- Add the following lines to the profile.ksh file:

```
export ANALOGY_SABER=available
export SABER_FALCON=install_dir/Saber/ \
framework/falcon
export AMPLE_PATH=$SABER_FALCON/userware
export MGC_TYPE_REGISTRY=$SABER_FALCON/saber_rgy/ \
registry/type_registry/saber.rgy
export SABER_MGC8_SYMBOLS=$SABER_FALCON/symbols
```

If AMPLE_PATH or MGC_TYPE_REGISTRY is used for other applications, add the Saber paths to these variables as follows:

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Installing the Frameway Integration for Mentor Graphics

```
export AMPLE_PATH="$AMPLE_PATH;$SABER_FALCON/ \
  userware"
export MGC_TYPE_REGISTRY="$MGC_TYPE_REGISTRY: \
  $SABER_FALCON/saber_rgy/registry/type_registry/ \
  saber.rgy"
MGC_TMPDIR=C:/tmp
ANLG_IPC_PKG=$SABER_FALCON/ipc
```

- Go to Start > Settings > Control Panel > System > Advanced tab > Environment Variables. In the User Variable pane, click New and add the following settings:

Variable name	Variable value
ANALOGY_SABER	available
SABER_FALCON	<i>install_dir</i> \Saber\framework\falcon
AMPLE_PATH	%SABER_FALCON%\userware
MGC_TYPE_REGISTRY	%SABER_FALCON%\saber_rgy\registry\type_registry\ saber.rgy
SABER_MGC8_SYMBOLS	%SABER_FALCON%\symbols
MGC_TMPDIR	C:\tmp
ANLG_IPC_PKG	%SABER_FALCON%\ipc

- If AMPLE_PATH or MGC_TYPE_REGISTRY is already set for other applications, add the following Saber paths:

Variable name	Variable value
AMPLE_PATH	<i>old_AMPLE_PATH</i> ;%SABER_FALCON%\userware
MGC_TYPE_REGISTRY	<i>old_MGC_TYPE_REGISTRY</i> ;%SABER_FALCON%\ saber_rgy\registry\type_registry\saber.rgy

Important:

Do not set the ANLG_IPC_PKG variable on Windows.

The following sections describe:

[Verifying the Environment Variable Settings](#)

[Creating or Modifying a Location Map File](#)

[Loading the Saber and CosmosScope Icons](#)

[Verifying the Installation](#)

Verifying the Environment Variable Settings

The environment variables described in the previous steps must be set for noninteractive invocations of `/bin/csh`, as well as interactive invocations of whatever shell you normally use. You cannot depend on noninteractive shells inheriting the environment from interactive shells in either Design Architect or Design Manager.

To ensure that the environment variables are correctly set,

1. Source your `.cshrc` file, create a new shell, or log out and log in.
2. To determine whether the environment is set correctly for interactive shells, enter

```
% printenv
```

3. View the results to verify each environment variable that was described in [Step 7 on Installing the Software on page 20](#). Note that the variables are expanded to their absolute paths.
4. To determine whether the environment is set correctly for a noninteractive C shell, complete the following steps:

- a. Using a text editor, create a file called `my_csh_env` in your current directory containing the following lines:

```
#!/bin/csh
printenv > analogy_csh_env

MGC_TYPE_REGISTRY old_MGC_TYPE_REGISTRY; \
%SABER_FALCON%\saber_rgy\registry\type_registry \
\saber.rgy
```

- b. Make the file executable by entering the following command at the shell prompt:

```
% chmod 777 my_csh_env
```

- c. To invoke Design Architect, enter

⌘ da

- d. When the Design Architect session window appears, move the cursor into the session window area, enter the following command:

```
$system("my_csh_env")
```

- e. Exit Design Architect.

The previous steps create the `analogy_csh_env` file, which contains a list of all environment variables in the noninteractive shell created with the invocation of Design Architect. Check this file to ensure that the environment variables are set correctly.

The following sections describe:

[Creating or Modifying a Location Map File](#)

[Loading the Saber and CosmosScope Icons](#)

[Verifying the Installation](#)

Creating or Modifying a Location Map File

The `MGC_LOCATION_MAP` variable points to a location map file. You need to modify that location map file. However, if you cannot modify the file (or don't want to), you can copy it to your local directory, modify it, and change the `MGC_LOCATION_MAP` variable to point to your local copy. If the variable is not defined, or if you do not know where to find a location map file, ask your system administrator. The `MGC_LOCATION_MAP` variable must point to the location map file for both interactive and noninteractive shells, as outlined in the previous section.

It is not sufficient to simply change the variable for your current shell. If you are not using a location map, set `MGC_LOCATION_MAP` to `NO_MAP`.

To create or modify a location map file,

1. If you need to create a location map file rather than copy an existing one, place the following lines at the beginning of the file:

```
MGC_LOCATION_MAP_2  
(blank line)
```

2. Add the following soft prefixes to the location map file that you are either creating or modifying:

```
$SABER_MGC8_SYMBOLS  
(blank_line)  
$SABER_FALCON  
(blank_line)
```

The Mentor Graphics environment requires that these entries be present in the location map file to indicate that they are soft paths. You do not have to specify hard paths for the location map entries because you already defined them as environment variables, which override the corresponding location map entries. However, if you prefer, you can omit the environment variable specifications and instead specify the hard paths in the location map entries. In either case, the location map entries must be included in the location map file.

If you are using the Mentor Graphics Board Station products, a blank line after the soft prefix name in the location map file can cause a fatal error. Instead, you must specify a hard path for each soft prefix in the location map file (except for the MGC_LOCATION_MAP_2 entry).

3. Initialize the startup file by logging out and logging back in.

The installation of the Frameway Integration software is now complete.

The following sections describe:

[Loading the Saber and CosmosScope Icons](#)

[Verifying the Installation](#)

Loading the Saber and CosmosScope Icons

To load the Saber and CosmosScope icons,

1. Start Design Manager by using the following command:

```
% dmr
```

When Design Manager is running, place the pointer in the Tools window and click to activate the menu bar for the Tools window.

2. Add the Saber toolbox.
 - a. Select the Toolbox window by clicking in the border of the window.
 - b. Use the right mouse button to choose “View toolboxes.”
 - c. When the \$MGC_HOME/toolbox icon appears, choose Edit > Add Toolbox. A prompt bar appears on the lower-left side of the Toolbox window.

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Installing the Frameway Integration for Mentor Graphics

- d. Enter the following full path in the prompt bar and click OK:

```
saberfalcon/saber_rgy/toolbox
```

In the preceding command, `saberfalcon` is the full path name to the place where the `$SABER_FALCON` environment variable resides. You must either specify a hard path or `$SABER_FALCON` must be defined in the location map. If `$SABER_FALCON` is defined in the location map, you can use this soft name in the prompt bar entry.

A second toolbox named `saberfalcon/saber_rgy/toolbox` should now appear in the Toolbox window.

3. Make sure the Saber and CosmosScope icons are visible in the Tools window.

If the Tools window is not present inside the Design Manager window, choose `View > Tools`. The icons for the Saber simulator and CosmosScope should now be present in the Tools window, though you might have to scroll through the window to find them.

4. Exit Design Manager.

The following section describes:

[Verifying the Installation](#)

Verifying the Installation

To verify that the Frameway Integration for Mentor Graphics is installed correctly,

1. Copy the `$install_home/test/install/mentor` directory to a local location.
2. Navigate to the newly created `mentor` directory.
3. Set the `$SABER_FALCON` environment variable to point to your local copy of the `mentor` directory. For example, if you are using the C shell, enter

```
% setenv SABER_EXAMPLE your_path/mentor
```
4. Invoke Design Architect by entering the following command:

```
% da
```
5. In Design Architect, click the Open Sheet icon to open the Open Sheet dialog box.
6. In the Open Sheet dialog box, click the Navigator button, and in the resulting List box, select the component you want to install.

The path to the component appears in the Component Name box of the Open Sheet dialog box.

7. In the Open Sheet dialog box, click OK.
8. Choose Check > Sheet. Close or minimize the “Check sheet” summary.
9. Choose File > Save Sheet.
10. Choose Saber > Netlist > Show Netlister Transcript.
You will be able to watch the netlister process in the resulting Netlister Transcript window.
11. Choose Saber > Netlist > Start Netlister.
This starts the netlister.
12. After the netlist process has finished without any errors, close the Netlister Transcript window.
13. Invoke Saber Guide by choosing Saber > Start Saber Guide.
14. Open the Saber Guide Transcript window by clicking the cmd Simulation Transcript icon.
15. In the Saber Guide Transcript window, execute the following command:

```
<install.scs
```

The install.scs test program starts a simulation of a test circuit and then loads the resultant plot files into CosmosScope.

Note:

The signals are not plotted in the graph window. To plot the same signals in the graph window, use the `scope plot` command in the install.scs command script.

16. If the commands that were executed by the install.scs script produced no errors, the communication between the Mentor Graphics environment and the Saber simulator is good. If you want to complete the test as was done in checking the Saber simulator installation, see steps 7 and 8.
17. Exit Saber and Design Architect.

Chapter 2: Installing Saber Optional Software

Troubleshooting a Frameway Integration for Mentor Graphics Installation

The following sections describe:

[Troubleshooting a Frameway Integration for Mentor Graphics Installation](#)

[Installing the Saber Co-Simulation Interface With ModelSim](#)

[Installing the Frameway Integration for Cadence](#)

[Installing the Saber Co-Simulation Interface With Verilog](#)

[Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Troubleshooting a Frameway Integration for Mentor Graphics Installation

If you followed the steps in the previous section, the environment for running the Frameway Integration for the Mentor Graphics Falcon Framework should be set up correctly. However, other factors can affect the operation of the software. This section describes potential problems and suggests solutions.

PROBLEM 1

A schematic window is open and active but there is no Saber menu item in the menu bar, no Saber Parts Gallery menu item, and no Saber or CosmosScope icons in the palette.

Solution A

The `ANALOGY_SABER` environment variable is not set to the value available. It is also possible that either the variable or the value is misspelled. Setting this environment variable correctly causes the Saber menu item to appear in the menu bar even if the software has not been loaded.

Solution B

If the `ANALOGY_SABER` environment variable is set correctly, other causes might be that you executed an old version of Mentor Graphics software or that some other third-party userware redefined the menu bar. If fixing these potential causes does not solve your problem, contact Customer Support.

PROBLEM 2

A schematic window is open and active and there is a Saber menu item in the menu bar, but there is no pull-down menu associated with it.

Solution

The userware has not been loaded into Design Architect. Enter the following command:

```
% ls $SABER_FALCON/userware
```

Check that the `des_arch`, `base`, and `dve` directories are listed and that there is something in each of these directories. Also, make sure that the `AMPLE_PATH` environment variable contains the exact path that `$SABER_FALCON/userware` resolves to. For information on setting `AMPLE_PATH`, see [Step 7 in Installing the Software on page 20](#).

PROBLEM 3

The first time you open a schematic window, error messages appear in the Design Architect transcript window stating that `$load_library` failed in the `ipc.ample` file.

Solution A

Check that the `$ANLG_IPC_PKG/lib/ample_ipc.dl` file exists. If not, check the `ANLG_IPC_PKG` environment variable setting, which is defined in `$install_home/bin/ai_setupmgc` and `aisetupmgc_csh`.

Solution B

The library mentioned in the `$load_library` message must have execute permissions. Check the permissions of `$ANLG_IPC_PKG/lib/ample_ipc.dl` to ensure that read and execute permissions exist for everybody.

PROBLEM 4

A netlist fails after you chose `Saber > Netlist` or `Saber > Start Saber Guide` and ran an analysis.

Solution A

If a transcript window appears and shows the error message, fix the problem as described. The transcript window shows the actual output of the current run.

Solution B

Check the transcript window carefully for the following message:

```
dvetos.exe: command not found
```

Check that your path environment variable points to the `install_home/ai_bin` directory.

Chapter 2: Installing Saber Optional Software

Troubleshooting a Frameway Integration for Mentor Graphics Installation

PROBLEM 5

The palette icons associated with the Saber products appear as letters or numbers rather than pictures in Design Architect, or the Saber simulator tool icons (Saber and CosmosScope) do not appear in the Design Manager Tools window.

Solution

HP Platforms

Verify that the `$SABER_FALCON/saber_rgy/registry/fonts` directory is not empty. If the fonts directory is not empty, you might be using the wrong fonts. Before rebuilding the fonts, you must remove everything in the fonts directory. If `.snf` files were in this directory before, create X11R4 fonts. If `.pcf` files were in this directory before, create X11R5 fonts.

All Platforms

If the fonts still do not work after you rebuild them, execute the following commands:

```
% xset fp+ $SABER_FALCON/saber_rgy/registry/fonts
% xset fp+ $MGC_HOME/registry/fonts
% xset fp rehash
```

This procedure should get your workstation to recognize the fonts. If you still have problems, ensure that everyone has at least read and execute permissions on all of the directories identified by the `$SABER_FALCON/saber_rgy/registry/fonts` path.

The following sections describe:

[Installing the Saber Co-Simulation Interface With ModelSim](#)

[Installing the Frameway Integration for Cadence](#)

[Installing the Saber Co-Simulation Interface With Verilog](#)

[Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Installing the Saber Co-Simulation Interface With ModelSim

Note:

The `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` license environment variable must be defined before you use a Framework Integration or Co-Simulation Interface option. For detailed instructions on setting the license variable, see [Installing Synopsys Tools](#).

Before you can correctly install the Saber/ModelSim interface, you must verify the proper installation and operation of the ModelSim software and the Saber software.

To correctly set up the Saber/ModelSim interface with the correct master-slave relationships, perform the following operations:

- For Solaris:

If ModelSim is master, enter

```
% setenv SABER_MODELSIM install_home/Saber/ \  
    bin/sabermti.so  
% set path=(install_home/ai_bin $path)  
% setenv LD_LIBRARY_PATH:$install_home/ \  
    Saber/bin
```

If Saber is master, enter

```
% setenv SABER_MODELSIM install_home/Saber/ \  
    bin/sabermti.so
```

`$PATH` must include the path to the ModelSim executable files.

- For HP-UX:

If ModelSim is master, enter

```
% setenv SABER_MODELSIM install_home/Saber/ \  
    bin/sabermti.sl  
% setenv SHLIB_PATH install_home/Saber/bin  
% set path=(install_home/ai_bin $path)
```

If Saber is master, enter

```
% setenv SABER_MODELSIM install_home/Saber/ \  
    bin/sabermti.sl
```

`$PATH` must include the path to the ModelSim executables files.

Chapter 2: Installing Saber Optional Software

Installing the Frameway Integration for Cadence

- For Windows:
 - a. Open the Environment Variables dialog box.
For example, on a Windows 2000 system, go to Start > Settings > Control Panel > System > Advanced > Environment Variables.
 - b. Set the SABER_MODELSIM variable to
`install_home\Saber\sabermti.dll`
 - c. If ModelSim is the master, add the following line to the PATH variable:
`install_home\ai_bin;install_home\Saber\bin`
 - d. PATH must include the path to the ModelSim executable files.

The following sections describe:

[Installing the Frameway Integration for Cadence](#)

[Installing the Saber Co-Simulation Interface With Verilog](#)

[Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Installing the Frameway Integration for Cadence

Note:

The `SABER_HOME` variable and a license environment variable must be defined before you install a Frameway Integration or Co-Simulation Interface option.

Set the `SABER_HOME` environment variable as follows:

```
% setenv SABER_HOME install_home/Saber
```

To set the `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` license environment variable, see [Installing Synopsys Tools](#).

Before you can correctly install the Frameway Integration for the Cadence Design II Environment, you must verify the proper installation and operation of the partner software and the Saber software. To make these checks,

1. Test the Design Framework II software installation.
 - a. Invoke Design Framework II by entering the appropriate command for your system. Your invocation command will be similar to one of the following examples: `icms`, `ictb`, `msfb`, or `icds`.

The Frameway Integration for Design Framework II is compatible with the Cadence Composer and Analog Artist 4.X.

- b. Exit Design Framework II.

Note:

If you are unable to invoke Design Framework II, see the appropriate Cadence installation manual for more information.

2. Verify that the Saber simulator is installed and works correctly.
3. Set the library environment variables.

Set or modify the path to your `LD_LIBRARY_PATH` (Sun) or `SHLIB_PATH` (HP) variable in your `.cshrc` file. A script is provided to automate this procedure. Simply enter the following lines at the command-line prompt:

```
% ed 's/$0/ai_setlibpath/' $SABER_HOME/bin/ \  
    ai_setlibpath > ! /tmp/my_setlibpath  
% source /tmp/my_setlibpath
```

- -
 -
 4. (Optional) If you will be using a partner simulator with the Saber simulator, verify that the Verilog simulator is installed for use as a partner simulator.
 5. Load the Frameway Integration software.

If you did not load the Frameway Integration for the Cadence Design Framework II at the time the Saber simulator was installed, do so now.

- -
 -
 -
 -
 6. Install the necessary license.
 - a. Add the license information to the license file.
 - b. If needed, install the licenses for the Saber/Verilog Co-Simulation option and the Digital Simulation option.
 7. Create the directories.

You must create a directory named `local` in cadence standard directory/ `tools/dfll` and create several directories within the `local` directory.

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Installing the Framework Integration for Cadence

- a. Make this directory your current (working) directory. For example, on a Sun system enter

```
% cd $cds_root/tools/dfII
```

- b. Create this directory, if it does not already exist, as follows:

```
% mkdir local
```

- c. Create the following directories in the local directory if they do not already exist:

```
% cd local  
% mkdir hnl  
% mkdir -p si/caplib  
% cd si/caplib
```

- d. Copy the following files to the caplib directory:

- Copy the si_saber_cds.il file to a Saber.il file in the caplib directory and change permissions, as follows:

```
% cp $SABER_HOME/framework/artist/skill/ \  
    si_saber_cds.il cadence_standard_directory/ \  
    tools/df11/local/si/caplib/Saber.il  
% chmod 755 cadence_standard_directory/tools/df11/ \  
    local/si/caplib/Saber.il
```

- Copy the si_saberHDL_cds.il file to a SaberHDL.il file in the caplib directory and change permissions, as follows:

```
% cp $SABER_HOME/framework/artist/skill/ \  
    si_saberHDL_cds.il cadence_install_dir/ \  
    tools/df11/local/si/caplib/SaberHDL.il  
% chmod 755 cadence_install_dir/tools/df11/ \  
    local/si/caplib/SaberHDL.il
```

- e. Copy the following files to the hnl directory:

- Copy the hnl_saber_cds.il file to a Saber.il file in the hnl directory and change permissions, as follows:

```
% cp $SABER_HOME/framework/artist/skill/ \  
    hnl_saber_cds.il cadence_standard_directory/ \  
    tools/dfII/local/hnl/Saber.il  
% chmod 755 cadence_standard_directory/tools/dfII/ \  
    local/hnl/Saber.il
```

- Copy the hnl_saberHDL_cds.il file to a SaberHDL.il file in the hnl directory and change permissions, as follows:

```
% cp $SABER_HOME/framework/artist/skill/ \
    hnl_saberHDL_cds.il cadence_install_dir/ \
    tools/dfII/local/hnl/SaberHDL.il
% chmod 755 cadence_install_dir/tools/dfII/ \
    local/hnl/SaberHDL.il
```

8. Enter `cd` to return to your home directory.
9. Edit your `cds.lib` file to add symbol information.

The `cds.lib` file is a part of the Cadence Design Framework II software.

- Edit the `cds.lib` file to include the path to the Frameway symbols in the definition of the library search path. You do this by using ASCII files. For example,

```
DEFINE SaberLib $SABER_HOME/framework/artist/symbols/
SaberLib
DEFINE basic $CDS_HOME/tools/dfII/etc/cdslib/basic
INCLUDE ../../other/../../cds.lib
```

These files can call other `cds.lib` files so that system files can be resident in a location and referred to with an `INCLUDE` statement. Environment variables can be used as shown.

If the `cds.lib` file is in your local directory, it is used. Otherwise the `~/cds.lib` file is used. By using a local `cds.lib` file, you can set design-specific search paths.

10. In the Cadence Design Framework II directory, create a MAST file containing initial configuration information.
 - a. To create the file, use an ASCII editor, such as `vi`, that does not insert formatted text and enter

Chapter 2: Installing Saber Optional Software

Installing the Framework Integration for Cadence

```
//Revision 4
//NOTE
// Default template for MAST
// Note:
// Please remember to replace Top Cell
// Library, Cell, and View fields with the
// actual names used by your design.
//END_NOTE

config mast;
design myLib.myCell:myView;

viewlist mast, schematic, symbol;
stoplist mast, symbol;

endconfig
```

- b. Place the file in the following directory:

\$CDS_HOME/tools/dfII/local/hierEditor

- c. Name the file MAST and save it.

11. Copy the .artistSaberDefaults.il file.

The .artistSaberDefaults.il file sets the defaults for menus and dialog boxes in Design Framework II. You can copy this file into your home directory and modify it to set the defaults you prefer for general use, or you can copy it into a particular project directory and then modify it to set the defaults to be used for that project.

If more than one .artistSaberDefaults.il file exists on your system, the .artistSaberDefaults.il file in your current (working) directory is used if it exists. If not, the .artistSaberDefaults.il file in your home directory is used.

- a. Make your home directory or a project directory your working directory.
- b. To copy the file to your working directory, enter

```
% cp $SABER_HOME/framework/artist/ dotfiles/
.artistSaberDefaults.il .
```

Enter the code all on one line. The space and period at the end are important.

- c. To change the default working directory for the Cadence Design Framework II software, which is set by the .artistSaberDefaults.il file, edit the file as follows:

System administrators: To change the sitewide `.artistSaberDefaults.il` file, edit the file in `$SABER_HOME/framework/artist/dotfiles`.

Individual users: Edit your local copy of the `.artistSaberDefaults.il` file.

- Set the `saber_simRunDir` template to point to the specific directory you want.

Or you can set

```
saber_simRunDir = getWorkingDir()
```

- Choose Saber > Set Working Directory and specify the directory you want.
- Use a UNIX environment variable called `SABER_DEFAULT` to set the path to the `.artistSaberDefaults.il` file.

If this path is set and the file is present, this file will be loaded. Otherwise the `.artistSaberDefaults.il` file will be loaded from the home directory or the working directory. For example, suppose you set the variable as follows:

```
setenv SABER_DEFAULT /homes/myfile/latest
```

If an `.artistSaberDefaults.il` file exists in `/homes/myfile/latest`, it will be used instead of any other files present on your system.

12. Load the new `~/.cdsinit` file.

To access the integration to Cadence 5.0 or 5.1, you need to create a new `.cdsinit` file and install it in each user's home directory. Use a text editor, such as `vi`, that does not insert formatted text.

The contents of the `.cdsinit` file for this release are different from the contents in previous versions. An example of the new file contents follows:

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```
load(strcat(getShellEnvVar("install_home")\  
  "/framework/artist/skill/analogy.il "))  
;  
load(strcat(getShellEnvVar("install_home")\  
  "/framework/artist/skill/analogyReg.il"));  
;  
load(strcat(getShellEnvVar("install_home")\  
  "/framework/artist/skill/viewgen.il "))  
;  
analogy_menu_creation()  
;  
printf( "Done with startup  
        initialization.\n" )
```

The analogyReg.il and viewgen.il files are necessary only if you are using the Frameway Integration for Cadence text views feature. These files are used to register the MAST view type. The MAST views must be registered before you can create them.

13. Register the MAST views by performing the following steps:

- a. Go to the data.reg file, which is located at
\$SABER_HOME/framework/artist/skill
- b. Do one of the following:
 - Put data.reg into the home directory.
 - Follow the instructions in data.reg to split it into these files:
cds_install/share/cdssetup/registry/data/mast.reg
cds_install/share/cdssetup/registry/data/anlg_verilog.reg
cds_install/share/cdssetup/registry/data/snps_vhdlams.reg
cds_install/share/cdssetup/registry/tool/mastEditor.reg
cds_install/share/cdssetup/registry/tool/anlg_verilog.reg
cds_install/share/cdssetup/registry/tool/snps_vhdlams.reg
- c. Load the analogyReg.il and viewgen.il files with analogy.il. Add a line to your .cdsinit file that will load all three files.
The viewgen.il file and the analogyReg.il file, which contains the trigger functions, are located at
\$SABER_HOME/framework/artist/skill

- d. To create a MAST view that uses the trigger functions found in analogyReg.il, follow the procedures on creating text views in Cadence in the *Analyzing Designs Using Saber for the Cadence Design Framework II* manual.
14. Verify that the menus have been installed correctly, and complete the installation.
- a. Copy the \$SABER_HOME/test/install/cadence directory to a local location.
 - b. Edit your cds.lib file to include the path of the cadence/install library.
 - c. Invoke Design Framework II by entering the appropriate command for your version of the software (for example, icde, icds, icms, asicfe, layout, layoutPlus, icca, asicpr, or icfb).
The Saber menu item should appear on the menu bar in the schematic window.
 - d. Choose File > Open. The Open File dialog box appears.
 - e. In the Open File dialog box,
 - Select Library Name > install.
 - Then select Cell Name > install.
 - Then select View Name > schematic.
 - Click OK.
 - f. The schematic window should appear with no errors. Check and save the design if necessary.
 - g. In the schematic window,
 - Choose Saber > Set Working Directory.
 - In the resulting Project Information dialog box, check that the Project Directory box is set to *your_path/cadence*.
 - Click OK.
 - h. In the schematic window, select Saber > Netlist > Start Netlister.
This starts the netlister. A simulation window appears that contains the netlister transcript.
 - i. After the netlist process has finished without errors, close the simulation window.
 - j. Invoke Saber Guide by choosing Saber > Start Saber Guide.
The design is automatically loaded in Saber.

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- k. Open the Saber Guide transcript window by clicking the Simulation Transcript icon.
- l. In the Saber Guide transcript window, choose File > Load Command File.
- m. Navigate to *your_path/cadence* and load the *install.scs* file.

This will execute the commands in the *install.scs* file. The *install.scs* test program starts a simulation of a test circuit and then loads the resultant plot files into CosmosScope.

If the commands that were executed by the *install.scs* script produced no errors, the communication between the Cadence Design Framework II and the Saber simulator is good.

- n. Exit Saber and Design Framework II.

The following sections describe:

[Installing the Saber Co-Simulation Interface With Verilog](#)

[Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Installing the Saber Co-Simulation Interface With Verilog

Note:

The `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` license variable must be defined before you install a Frameway Integration or Co-Simulation Interface option. See [Installing Synopsys Tools](#).

To simulate mixed-signal designs by using Verilog-XL as a partner simulator with the Saber simulator, you will need the following licenses:

- Licenses for the Saber/Verilog Co-Simulation Interface (SABER/VERILOG_MM)
- A license from Cadence Design Systems for the Verilog-XL simulator

To build the Verilog executable file, you need to run the `vconfig` utility provided by Cadence.

Set or modify the path to your `LD_LIBRARY_PATH` (Sun) or your `SHLIB_PATH` (HP) variable in your `.cshrc` file.

See the instructions for linking Verilog executable files in the Cadence documentation.

To install your Saber/Verilog software,

1. Install the software.

The Saber/Verilog Co-Simulation Interface software is loaded at the same time you load the Saber integrated suite of products.

2. Install the licenses.

- If you have not yet installed a license file for your software, you can install the license for the `SABER/VERILOG_MM` option as a part of the software installation procedure.
- If you have already installed a license file for your software, update that file by adding the `SABER/VERILOG_MM` license.

3. Verify that the Saber simulator is installed and works correctly.

4. Install the Verilog-XL simulator license.

Obtain a Verilog-XL simulator license from Cadence Design Systems, and complete any installation instructions provided with the license.

5. Test that the Verilog-XL simulator is installed correctly.

- Invoke the Verilog-XL simulator by entering the appropriate command for your system.

If you cannot invoke the Verilog-XL simulator, see the appropriate Cadence Design Systems installation manual for more information.

- Exit the Verilog-XL simulator.

6. (Optional) Create a configuration file for socket communication.

By default, pipe communication mode is used with the Saber simulator. If you want to use socket communication with Saber Guide, you must create a `config.vmx` file as follows:

- a. Copy the `$install_home/bin/config.vmx` file to your working directory.

If you save the `config.vmx` file to a directory other than your working directory, you must modify your `$install_home/bin/verilog.scf` file accordingly.

- b. Make no other changes to the `verilog.scf` file.

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Installing the Saber Co-Simulation Interface With Verilog

The version of the `verilog.scf` file provided with the software must be used when you use the Saber/Verilog software. Check that no other versions are present in the data search path ahead of this file.

7. Create the Verilog executable file.

Follow Cadence instructions for invoking `vconfig`. The instructions likely involve adding a directory to your `PATH` environment variable, for example, `$CDS_ROOT/tools/bin`.

- a. When `vconfig` asks, "What do you want to name the Verilog_XL target?" use the default: `verilog`.
- b. When `vconfig` asks, "Do you want to include Verilog Mixed-Signal Interface?" answer YES.
- c. When `vconfig` asks for the names of additional files to be loaded, enter a single period (`.`).
- d. Create the Verilog executable file by entering

```
% ai_make_verilog
```

For more information about the command, enter

```
% ai_make_verilog -h
```

8. Install the Verilog-XL executable file in the desired directory.

9. (Optional) Change the invocation name for the Saber/Verilog simulator.

You can set the invocation name `verilog` to an ASCII string of your choosing in the `invocation_name.scf` file.

- a. Use an ASCII text editor to open the `$install_home/bin/invocation_name.scf` file.
- b. Change the invocation name item from `verilog` to an ASCII string (for example, `verilog.scf`).

The following section describes:

[Troubleshooting the Saber Co-Simulation Interface With Verilog Installation](#)

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Troubleshooting the Saber Co-Simulation Interface With Verilog Installation

This section describes a series of potential problems and suggests solutions.

PROBLEM 1

You get an error while creating the Verilog executable file.

Solution A

Usually, this error is due to missing or incorrect versions of the C or C++ compilers.

Solution B

Some releases of Cadence's vconfig might produce a script that, when run, produces undefined symbols:

```
ld: Undefined symbol
bcopy
getdtablesize
getwd
```

These symbols are undefined because a Cadence library, `virtuous.a`, is missing from the vconfig output script. The library will be included if you answer the vconfig questions in a particular way. In general, those questions that have **v** as their default answer result in the inclusion of `virtuous.a`. Contact Cadence for details.

PROBLEM 2

When you attempt to operate remotely, the error message “remote_host_name: remote_host_name: cannot open” is displayed.

Solution

The restricted shell version of the `rsh` command was executed instead of the remote shell version. Change your `PATH` environment variable to include the path to the remote shell version of the `rsh` command. This executable file is typically located in either `/usr/ucb` or `/usr/bin`. This directory should appear in the search path ahead of any directories containing, or pointing to, the restricted shell version of the `rsh` command.

PROBLEM 3

When you attempt to operate remotely, the error message “permission denied” is displayed.

Solution

Complete the following steps:

- Log in to the remote system.
- Create or modify a file named `.rhosts` in your home directory on the remote system. Include in the file a line that contains the name of your local system. To view man page information about the `.rhosts` file, enter one or both of the following commands:

```
man login
man rsh
```

PROBLEM 4

You are unable to start Verilog-XL from the Saber simulator.

Solution A

The Verilog-XL executable file does not have execute permission. Change the permission on the executable file, using the command

```
% chmod +x verilog_pathname
```

where *verilog_pathname* is the path to Verilog-XL, including the executable file.

Solution B

The Verilog-XL executable file is not found in the `PATH` variable. Change the path definition to include the directory where the Verilog-XL executable file resides, as follows:

```
set PATH = (verilog_directory $PATH)
```

where *verilog_directory* is the path to the directory containing the Verilog-XL executable file.

PROBLEM 5

Verilog-XL starts but exits immediately with the message

```
***The partner simulator exited unexpectedly***
```

Solution A

Verilog-XL cannot find the license file. Examine the Verilog-XL output file `verilog.log`. Look for a line in the log file similar to this one:

```
Error! ERROR (LM -24): can't find license file.
```

If such an error is found, make sure the license variable (`SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE`) points to the appropriate license file. Modify the environment variable if necessary. For example,

```
setenv LM_LICENSE_FILE "...:verilog_license_file"
```

where `verilog_license_file` is the path to the Verilog-XL license file.

Solution B

The `SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE` license environment variable is pointing to a Verilog-XL license file that is invalid or has expired. Examine the Verilog-XL output file `verilog.log`. Look for a line in the log file similar to this one:

```
Error! ERROR (LM -35): license for feature has expired.
```

If such an error is found, obtain a valid license file from Cadence Design Systems, install the license file, and set the license environment variable accordingly.

PROBLEM 6

When you invoke the Saber/Verilog software with the Verilog-XL simulator running on a remote host, the Verilog-XL simulator starts but exits immediately with the following error message:

```
The partner simulator exited unexpectedly
```

Solution A

There is no permission to execute the shell on the remote host. Verify that you have permission to execute an `rsh` command on the remote host by entering

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Installing the Saber Co-Simulation Interface With Verilog

```
% rsh host 'ls' (Sun machines)
```

```
% remsh host 'ls' (HP machines)
```

where *host* is the name of the remote host. If you are unable to execute a remote shell, contact your system administrator to arrange for you to execute remote shells on the remote host.

Solution B

The remote working directory is invalid. Verify that the working directory on the remote host is valid by entering

```
% rsh host 'cd remote_directory'
```

where *host* is the name of the remote host, and *remote_directory* is the directory where the Verilog-XL simulator will be run on the remote host.

Correct the remote working directory as necessary to ensure a valid path name on the remote host, either by modifying the Saber Guide invocation command line (-pwd option) or by modifying the verilog.scf file (where the remote working directory can be specified).

Solution C

The Verilog-XL executable file cannot be found in the path on the remote system. Verify that the Verilog-XL executable file can be found on the remote system by entering

```
% rsh host 'cd remote_directory; verilog -s verilog_file'
```

where *host* is the name of the remote host, *remote_directory* is the directory where the Verilog-XL executable file will be run on the remote host, and *verilog_file* is the name of Verilog-XL input file.

Change permissions on the Verilog-XL executable file, or modify the path so that the Verilog-XL executable file can be found on the remote system.

The following sections describe:

[Setting Up the Software to Use a Remote System](#)

[Installing the Frameway Integration for eProduct Designer](#)

Setting Up the Software to Use a Remote System

To set up your Saber/Verilog software to run on a remote system,

1. Set up a user account on the remote system.

Your system administrator might need to do this for you.

2. Test that you can execute a remote shell locally.

- To test on an HP system, enter

```
% remsh remote_host_name ls
```

- To test on other systems, enter

```
% rsh remote_host_name ls
```

The following section describes:

[Installing the Frameway Integration for eProduct Designer](#)

Installing the Frameway Integration for eProduct Designer

To complete the eProduct Designer Frameway installation, follow these steps:

1. If it is not already installed, install the Mentor Graphics eProduct Designer software and verify the installation.
2. The Frameway software for eProduct Designer is installed at the same time you load Saber. Select the eProduct Designer option during installation.
3. Copy the viewdraw.ini file, located in the *install_home\Saber\framework\viewlogic\standard* directory, to your %HOME% directory.
4. Modify the Saber symbol path names in the viewdraw.ini file to be absolute path names. Replace the \$(SABER_HOME) path name in each of the Saber symbol library path names with the actual path to the place where the Saber symbol files reside.

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Installing the Frameway Integration for eProduct Designer

For example, if the location of *install_home* is *c:\Synopsys\X-2005.09*, change the symbol library path name from

```
DIR [mr] $(SABER_HOME)/framework/viewlogic/symbols/beta  
(shr_beta)
```

to

```
DIR [rm] c:\Synopsys\X-  
2005.09\Saber\framework\viewlogic\symbols\beta /
```

```
(shr_beta)
```

5. Modify the `WDIR`, `PATH`, and license environment variables as follows:
 - a. Start the System program by choosing Start > Settings > Control Panel > System > Environment tab.
 - b. Add these paths to the `WDIR` variable:

```
install_home\Saber\framework\viewlogic\standard  
install_home\ai_bin  
install_home\Saber\bin
```

- c. Add these paths to the `PATH` variable:

```
install_home\ai_bin  
install_home\Saber\bin
```

- d. Modify the license environment variable (`SNPSLMD_LICENSE_FILE` or `LM_LICENSE_FILE`) to include the location of the Synopsys license file. You can use path or *port@hostname* syntax. For example,

```
27000@server1;C:/Synopsys/license.lic
```

6. Verify that the Saber menu has been added to ViewDraw.
 - a. Restart the eProductDesigner Dashboard.
 - b. Open ViewDraw by clicking the ViewDraw icon.

The Saber menu should be in the menu bar to the left of the Help menu.

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