Installing NanoSim®

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Installing NanoSim®, C-2009.06

Installing NanoSim

This document describes how to install the NanoSim product.

This document contains the following sections:

- Media Availability and Supported Platforms
- Disk Space and Memory Requirements
- Installing the Software
- Setting Up the User Environment
- Setting Up the Discovery AMS Simulation Interface (SimIF)
- Verifying the NanoSim Installation

To ensure a successful installation, Create the Synopsys root directory (see *Installing Synopsys Tools*, available at http://www.synopsys.com/install) before beginning the installation process.

Media Availability and Supported Platforms

NanoSim is available on CD or by EST download. Obtain the appropriate binary executable files based on the operating system you need. Table 1 shows the supported platforms for the version C-2009.06 release (including ADFMI, NanoSim Integration with VCS, nWave, and Verilog-A).

Table 1 Supported Platforms and Keywords

Platform	Operating system	Synopsys platform keyword
AMD Opteron	Red Hat Enterprise Linux v4, 5[1]	amd64 (64-bit mode) linux (32-bit mode)
EM64T	SUSE Enterprise Linux 9, 10[1]	suse32 (32-bit mode) suse64 (64-bit mode)

Table 1 Supported Platforms and Keywords (Continued)

Platform	Operating system	Synopsys platform keyword
IA-32 (X86)	Red Hat Enterprise Linux v4, 5[1]	linux (32-bit mode)[2]
X86	Solaris 10	x86sol32 (32-bit mode) x86sol64 (64-bit mode)
Sun SPARC	Solaris 9, 10[1]	sparcOS5 (32-bit mode) spacr64 (64-bit mode)
IBM RS/6000	AIX 5.3	rs6000 (32-bit mode) aix64 (64-bit mode)

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

2. The 32-bit (x86) linux software is binary compatible with Intel EM64T or AMD Opteron running Red Hat Enterprise Linux.

Disk Space and Memory Requirements

The NanoSim tool has the following minimum memory requirements:

- Physical Memory – 512 MB (1GB is recommended)
- Swap space – 512 MB (2GB are recommended)

The disk space requirement varies, depending on the platform and tool selected for installation. During the installation process, Synopsys Installer displays the required disk space.

Accessing Memory Beyond 2 GB With 32-Bit Tools

In general, UNIX-based systems support a maximum memory of 2 GB for 32-bit processes. However, the NanoSim tool can extend memory beyond 2 GB.

Note:

Available memory is space not used by the OS, the windowing system, or other applications.

To access memory beyond 2 GB,

1. Make sure your server has Solaris 9 (or later) loaded.
2. Make sure your server has at least 4 GB of memory (physical and swap space) available.

   Note:

   Physical memory equals data size plus stack size, but stack size is used before data size. Therefore, setting stack size to a large value causes problems for designs that need to go over 2 GB. If you set the stack size too high, you cannot get enough memory for your data. To check the settings, use the `limit` command at the system prompt. For more information, see *Installing Synopsys Tools*.
3. Make sure the system you are using does not have restrictions that prevent you from using more than 2 GB of memory.
4. Create unlimited data size in the shell that you are using: C, Bourne, Korn, or Bash. If there are system-wide limits on the data size you can create, you can remove them or override them. You can do this in one of two ways:

   - Enter one of the following commands:

     For the C shell,

     ```
     % limit datasize 3800000
     ```

     For the Bourne, Korn, or Bash shell,

     ```
     # ulimit -S -d 3800000
     ```

   - Modify the kernel of your server. This approach allows everyone using your server to extend memory beyond 2 GB.

Installing the Software

NanoSim uses the Synopsys Installer tool, which allows you to use a graphical user interface (GUI) or a text script. For information about downloading the Synopsys Installer and NanoSim, see *Installing Synopsys Tools*.

To install NanoSim by EST or from the CD, follow the procedures described in *Installing Synopsys Tools*.

Installing Synopsys Tools shows an example Synopsys media installation script for the synthesis tools. NanoSim is installed in a similar manner.

NanoSim is a stand-alone product and cannot be installed over an existing Synopsys product, including a prior version of NanoSim. You must create a new directory for NanoSim.

The NanoSim ADFMI, Verilog-A, and NanoSim-VCS features, and the nWave waveform viewer are automatically installed with the NanoSim installation. However, you must install the Discovery AMS Simulation Interface (SimIF) tool stand-alone in a new empty directory.

Download instructions for the Discovery AMS Simulation Interface (SimIF) are included with the NanoSim EST download instructions.

Setting Up the User Environment

To set up the user environment, you must specify the location of the executable file and set the license environment variable.

Specifying the Executable File Location

The approach you take will depend on the shell you are using.

To set up a new NanoSim tool user,

- If you are using the C shell, source the CSHRC_ns file located in the install directory.

  ```
  % source install_dir/CSHRC_ns
  ```

  The CSHRC_ns file sets the path for NanoSim and the NanoSim man pages, as follows:

  ```
  set path=(install_dir/bin $path)
  setenv MANPATH install_dir/doc/ns/man:$MANPATH
  ```

  where *install_dir* is the directory where the tool has been installed.

  The default executable is NanoSim 32-bit. To run the NanoSim 64-bit executable, set the NANOSIM_64 environment variable before launching NanoSim:

  ```
  setenv NANOSIM_64 1
  ```

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

```
PATH=install_dir/bin:$PATH
export PATH
MANPATH=install_dir
```

Setting the SNPSLMD_LICENSE_FILE Environment Variable

You must install the SCL software and define the `SNPSLMD_LICENSE_FILE` variable before you can verify the NanoSim installation.

For information about downloading and installing SCL and on setting the license variable, see *Installing Synopsys Tools*.

Setting Up the Discovery AMS Simulation Interface (SimIF)

To set up a new Discovery AMS Simulation Interface (SimIF) user,

- If you are using the C shell, source the CSHRC_platform file located in the install directory.

  ```
  % source install_dir/CSHRC_simif
  ```

  The CSHRC_ simif file sets the path for Discovery AMS Simulation Interface as follows:

  ```
  setenv SNPS_SIMIF install_dir
  set path=(${SNPS_SIMIF}/bin $path)
  ```

  where *install_dir* is the directory where the tool has been installed.

  If you do not source the CSHRC_simif file, copy the preceding line and set the path from that file.

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

  ```
  SNPS_SIMIF=install_dir
  export SNPS_SIMIF

  PATH=${SNPS_SIMIF}/bin:$PATH
  export PATH
  ```

Verifying the NanoSim Installation

To verify the NanoSim or the Discovery AMS Simulation Interface installation,

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

   ```
   % cd $HOME
   ```

2. Invoke Nanosim by entering

   ```
   % nanosim
   ```

   If you see information about the product version, production date, and copyright, the installation was successful.

3. Invoke the Discovery AMS Simulation Interface tool by entering

   ```
   % simif
   ```

   If you see the Discovery AMS Simulation Interface window, the installation was successful.