NOTICE: This document contains references to Agilent Technologies. Agilent's former Test and Measurement business has become Keysight Technologies. For more information, go to **www.keysight.com.**





Agilent Technologies

EMPro 2011.01 January 2011 Installing EMPro

© Agilent Technologies, Inc. 2000-2009

5301 Stevens Creek Blvd., Santa Clara, CA 95052 USA

No part of this documentation may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Agilent Technologies, Inc. as governed by United States and international copyright laws.

Acknowledgments

Mentor Graphics is a trademark of Mentor Graphics Corporation in the U.S. and other countries. Microsoft®, Windows®, MS Windows®, Windows NT®, and MS-DOS® are U.S. registered trademarks of Microsoft Corporation. Pentium® is a U.S. registered trademark of Intel Corporation. PostScript® and Acrobat® are trademarks of Adobe Systems Incorporated. UNIX® is a registered trademark of the Open Group. Java[™] is a U.S. trademark of Sun Microsystems, Inc. SystemC® is a registered trademark of Open SystemC Initiative, Inc. in the United States and other countries and is used with permission. MATLAB® is a U.S. registered trademark of The Math Works, Inc.. HiSIM2 source code, and all copyrights, trade secrets or other intellectual property rights in and to the source code in its entirety, is owned by Hiroshima University and STARC.

The following third-party libraries are used by the NlogN Momentum solver:

"This program includes Metis 4.0, Copyright © 1998, Regents of the University of Minnesota", <u>http://www.cs.umn.edu/~metis</u>, METIS was written by George Karypis (karypis@cs.umn.edu).

Intel@ Math Kernel Library, http://www.intel.com/software/products/mkl

SuperLU_MT version 2.0 - Copyright © 2003, The Regents of the University of California, through Lawrence Berkeley National Laboratory (subject to receipt of any required approvals from U.S. Dept. of Energy). All rights reserved. SuperLU Disclaimer: THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

AMD Version 2.2 - AMD Notice: The AMD code was modified. Used by permission. AMD copyright: AMD Version 2.2, Copyright © 2007 by Timothy A. Davis, Patrick R. Amestoy, and Iain S. Duff. All Rights Reserved. AMD License: Your use or distribution of AMD or any modified version of AMD implies that you agree to this License. This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version. This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details. You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Permission is hereby granted to use or copy this program under the terms of the GNU LGPL, provided that the Copyright, this License, and the Availability of the original version is retained on all copies.User documentation of any code that uses this code or any modified version of this code must cite the Copyright, this License, the Availability note, and "Used by permission." Permission to modify the code and to distribute modified code is granted, provided the Copyright, this License, and the Availability note are retained, and a notice that the code was modified is included. AMD Availability: http://www.cise.ufl.edu/research/sparse/amd

UMFPACK 5.0.2 - UMFPACK Notice: The UMFPACK code was modified. Used by permission. UMFPACK Copyright: UMFPACK Copyright © 1995-2006 by Timothy A. Davis. All Rights Reserved. UMFPACK License: Your use or distribution of UMFPACK or any modified version of UMFPACK implies that you agree to this License. This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version. This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details. You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Permission is hereby granted to use or copy this program under the terms of the GNU LGPL, provided that the Copyright, this License, and the Availability of the original version is retained on all copies. User documentation of any code that uses this code or any modified version of this code must cite the Copyright, this License, the Availability note, and "Used by permission." Permission to modify the code and to distribute modified code is granted, provided the Copyright, this License, and the Availability note are retained, and a notice that the code was modified is included. UMFPACK Availability: http://www.cise.ufl.edu/research/sparse/umfpack UMFPACK (including versions 2.2.1 and earlier, in FORTRAN) is available at http://www.cise.ufl.edu/research/sparse . MA38 is available in the Harwell Subroutine Library. This version of UMFPACK includes a modified form of COLAMD Version 2.0, originally released on Jan. 31, 2000, also available at http://www.cise.ufl.edu/research/sparse . COLAMD V2.0 is also incorporated as a built-in function in MATLAB version 6.1, by The MathWorks, Inc. http://www.mathworks.com . COLAMD V1.0 appears as a column-preordering in SuperLU (SuperLU is available at http://www.netlib.org). UMFPACK v4.0 is a built-in routine in MATLAB 6.5. UMFPACK v4.3 is a built-in routine in MATLAB 7.1.

Errata The ADS product may contain references to "HP" or "HPEESOF" such as in file names and directory names. The business entity formerly known as "HP EEsof" is now part of Agilent Technologies and is known as "Agilent EEsof". To avoid broken functionality and to maintain backward compatibility for our customers, we did not change all the names and labels that contain "HP" or "HPEESOF" references.

Warranty The material contained in this document is provided "as is", and is subject to

being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Agilent disclaims all warranties, either express or implied, with regard to this documentation and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Agilent shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Agilent and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.

Technology Licenses The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license. Portions of this product include the SystemC software licensed under Open Source terms, which are available for download at http://systemc.org/. This software is redistributed by Agilent. The Contributors of the SystemC software provide this software "as is" and offer no warranty of any kind, express or implied, including without limitation warranties or conditions or title and non-infringement, and implied warranties or conditions merchantability and fitness for a particular purpose. Contributors shall not be liable for any damages of any kind including without limitation direct, indirect, special, incidental and consequential damages, such as lost profits. Any provisions that differ from this disclaimer are offered by Agilent only.

Restricted Rights Legend U.S. Government Restricted Rights. Software and technical data rights granted to the federal government include only those rights customarily provided to end user customers. Agilent provides this customary commercial license in Software and technical data pursuant to FAR 12.211 (Technical Data) and 12.212 (Computer Software) and, for the Department of Defense, DFARS 252.227-7015 (Technical Data - Commercial Items) and DFARS 227.7202-3 (Rights in Commercial Computer Software or Computer Software Documentation).

nstalling EMPro on Windows	6
Installation Overview	6
Installation Procedure	7
Installation Items	8
Installing on Clients	8
Installing Hardware Acceleration NVIDIA GPU Drivers	9
nstalling EMPro on Linux	10
Installation Overview	L0
Quick Installation	10
Detailed Installation	11
Configuring User Accounts	13

Installing EMPro on Windows

You can install EMPro on a computer running Windows by downloading the EMPro installation images from the EMPro download page $_$

For the latest information, you can refer to the *Release Notes* (relnotes) documentation at the following website: <u>http://www.agilent.com/find/eesof-docs</u>

On this page, choose **EMPro > Current and Archived doc > EMPro 2011.01**.

Installation Overview

The following flowchart provides the installation steps which will help you to install EMPro on computer having Windows.



Installation Procedure

Perform the following steps to install EMPro on a computer running Windows:

0 Note

If you have installed an *Early Access* version of EMPro, you must uninstall it before installing this version.

- 1. Exit all Windows programs.
- 2. Navigate to the location where you have saved the downloaded image file and unzip it.
- 3. Double-click **setup.exe** inside the extracted directory. The *InstallAnywhere* window is displayed.
- 4. At the *Introduction* screen, choose **Next** to read the License Agreement. This is a usage agreement and is not related to the license codewords required to run the software. This appears only when you run "Setup" the first time or after uninstalling EMPro.
- 5. At the *License Agreement* screen, review the agreement, then choose either:
 - I accept the terms of the License Agreement to accept the License Agreement.
 Select Next to continue the setup program.
 or
 - *I do NOT accept the terms of the License Agreement* to reject the License Agreement. Select **Next** to end the setup and exit the program.
- 6. At the *Choose Install Set* screen, choose the Complete Set (only option).
- 7. At the *Choose Install Folder* screen, select either:
 - Next to install to the default folder. The installation program will create this folder if it does not already exist.
 or
 - **Choose** to specify a different destination folder. If you specify a folder that does not already exist, the installation program will create it for you. The folder you specify will be the default startup folder for EMPro. For the best performance, choose a folder on your local, *not network*, drive.
- 8. At the *Pre-Installation Summary* screen, review your choices and click:
 - **Previous** to access previous screens to verify entries and make changes. This screen appears again if you go back to make other choices.
 - **Install** to start the installation. Immediately after clicking *Next*, the *Setup Status* screen will appear and the program configures the installation process. When the program determines that your system is ready, it will begin to install files. The status screen displays the files being installed and the progress of the installation.
 - Select **Cancel** to exit the *Setup* without completing the installation.
- 9. When the installation is done, read the *License Information* screen to learn how to obtain licenses, then click **Next**.
- 10. At the *Hardware Key Drivers* screen, read the information about installing FLEXnet ID dongle drivers, then click **Next**.
- 11. The next screen contains a question asking if you want to install FLEXid dongle drivers; choose:
 - **Yes** if you will use a dongle to run the FLEXnet licensing system. The Acresso installation program loads the latest FLEXid drivers needed for the hardware key. If you need to install the drivers later, Acresso recommends that you install

the FLEXid drivers with their installer, which is included on the EMPro PC Setup disk.

- **No** if you will be using a PC LAN card's Ethernet ID to run the FLEXnet licensing system.
- 12. When the *Install Complete* screen appears, click **Done**; then:
 - Install your codewords. For information on installing codewords, refer to *Installing Your Licenses* (license).
 - Install the Acresso FLEXid software-security hardware key to your PC's parallel or USB port, or use your PC LAN card's Ethernet ID. For instructions, refer to *Installing Your Licenses* (license).
- 13. Start EMPro using the start menu. If you are using license bundles, select a bundle using the *Agilent License Preference Tool* prior to running EMPro. For more information on the Agilent License Preference Tool, refer to "Using the Agilent License Preference Tool" in the ADS documentation.

Installation Items

A complete installation requires approximately 3 GB of disk space and contains the software, as well as, the examples.

Installing on Clients

On some client systems you may need to run a small *setup.exe* configuration program once per system. 32-bit and 64-bit versions of the *setup.exe* program are located in the EMPro download image. On a 64-bit system, you only need to run the 64-bit version of the *setup.exe* program.

```
<Installation Directory Path>\32bit\setup.exe (For 32-bit)
<Installation Directory Path>\64bit\setup.exe (For 64-bit)
```

If desired, the required script can be run in silent mode on the client PC. Use the above path (depending on 32-bit or 64-bit) and replace the *setup.exe* with the following:

msiexec /q /i "32bit\ADS_MM_Setup.msi"

```
1 Caution
```

Running the script in silent mode successfully depends on careful placement of the double-quotes (").

The following is an example of an error message displayed if you use a batch file against a network copy of EMPro and without running the required *setup.exe* configuration program on the client system.

<prompt > .\empro.exe The application has failed to start because its side-by-side configuration is incorrect. Please see the application event log for more detail.

Installing Hardware Acceleration NVIDIA GPU Drivers

You can install the hardware acceleration NVIDIA GPU drivers on a computer running Windows by performing the following steps:

- 1. Download the <u>EMPro download page</u>.
- 2. Click the Download & Trials tab.
- 3. Click <u>Hotfix Downloads</u> in the **Looking for a software patch/hotfix?** section.
- 4. The following drivers are listed for Windows XP32-bit and 64-bit operating systems:
 160.02 quadro winxp2k english.exe (32-bit)
 - 160.02_quadro_winxp64_english.exe (64-bit)
 - 181.20_quadro_winxp2k_english_whql.exe (32-bit)
 - 181.20 quadro winxp64 english whql.exe (64-bit)
- 5. Click the required drivers for downloading on your system.

Installing EMPro on Linux

You can install EMPro on Linux systems by downloading the EMPro installation images from the EMPro download page .

You can refer to the *Release Notes* (relnotes) documentation at the following website:

http://www.agilent.com/find/eesof-docs

On this page, choose **EMPro > Current and Archived doc > EMPro 2011.01**.

Installation Overview



Quick Installation

Use this quick installation procedure if you are experienced in installing Agilent EEsof

EMPro 2011.01 - Installing EMPro products; otherwise, refer to the *Detailed Installation* instructions.

🖯 Note

If you installed an Early Access version of EMPro, you should uninstall it before installing this release.

- 1. Log on to the system where you want to install EMPro.
- 2. Download and untar the EMPro installation image from the EMPro download page.
- 3. Change directories to the directory where the extracted tar files are located.
- 4. To start the Setup program using the following command: ./SETUP.SH
- 5. When the EMPro Installation window appears, you can begin the installation. When the installation is complete, note the *License ID* (hostid) then click **Done** to exit the program.
- 6. Use the *FLEXnet* security licenses supplied by Agilent EEsof to set up a *license.lic* file. For more information, refer to *Installing Your Licenses* (license).
- 7. Place the *license.lic* file in the *licenses* sub-directory of your EMPro installation directory and start FLEXnet. For more information, refer to *Setting Up Licenses* (license).
- 8. If you are using license bundles, select a bundle using the Agilent License Preference Tool prior to running EMPro. This tool is described in Using the Agilent License Preference Tool (license).
- Start EMPro. To do this, navigate to the directory in which EMPro is installed and select *bin/Linux-i686RHEL4* (for 32-bit systems) or *bin/Linux-x86_64* (for 64-bit systems) and use the command:

./startempro

Detailed Installation

Use the following steps to install EMPro on Linux systems. Please note, if you installed an *Early Access* version of EMPro, you should uninstall it before installing this release.

To install EMPro on Linux systems:

- 1. Log on to the system where you want to install EMPro. Ensure that you are using an account that has write permissions to the disk.
- 2. Download and untar the EMPro installation image from the EMPro website:

EMPro download page

For example to untar the file on Linux: tar xf empro200rday_linux_x86.tar

- 3. Change directories to the directory containing the extracted tar files.
- 4. Start the installation program using the following command:

./SETUP.SH

\rm Note

If you are running Netscape, or another program that uses a significant amount of color resources, you should shut it down before starting the EMPro installation.

5. At the *Introduction* window, click **Next** and read the License Agreement. This is a

usage agreement and is not related to the licenses required to run the software.

- 6. After reviewing the agreement in the *License Agreement* window, choose either:
 I accept the terms of the License Agreement, click **Next** to continue with the
 - setup.
 - or
 - *I do NOT accept the terms of the License Agreement*, click **Next** to end the setup and exit the program.
- 7. At the Choose Install Set window, select Complete
- 8. At the *Choose Install Folder* window, enter the full path to the directory in which you would like to install EMPro. If you specify a directory that does not already exist, the installation program will create it for you. The default directory is */usr/local/EMPro2011.01*.

Click:

- Next to install to the default destination, or
- **Choose** to browse to a different destination directory, or manually enter the full path. To install EMPro to the specified folder, click **Next**.
- 9. Following this, the *Pre-Installation Summary* will display the installation directory you have selected, along with the available disk space on the disk partition containing that directory. To keep the installation directory shown, click **Install**. If you want to change the installation directory, click **Previous** and repeat the preceding step.
- 10. The *Installing EMPro 2011.01* window appears, which is followed by the *Install Complete* window which appears when installation is complete. Note the *License ID* (hostid) and click **Done** to close the installation program.
- 11. Use the FLEXnet security licenses from Agilent EEsof to create a *license.lic* file with the correct SERVER and VENDOR line configurations. See *Installing Your Licenses* (license).
- 12. Place the *license.lic* file in the licenses sub-directory of your EMPro installation directory and start FLEXnet to enable your licenses. (Refer to *Setting Up Licenses* (license)).
- 13. Start EMPro. Do this by navigating into the directory that you have chosen to do the installation and move into bin/Linux-i686RHEL4 (for 32-bit systems) or bin/Linux-x86_64 (for 64-bit systems) and use the command ./startempro If you will be using license bundles, select a bundle using the Agilent License Preference Tool prior to running EMPro. For more information on the Agilent License Preference Tool, refer to Using the Agilent License Preference Tool (license).

🖯 Note

If you installed EMPro as root, and try to start as a regular user, you might see the message IOError: Errno 13 Permission denied: 'pyempro_stdout.txt'. While this is of no influence on the good functioning of EMPro, you can avoid this message by setting the bin/Linux-i686RHEL4 and bin/Linuxx86_64 executable for all:

```
cd /usr/local/EMPro201101/bin
chmod a+x Linux-i686RHEL4/
chmod a+x Linux-x86_64/
```

Installation Items

A complete installation installs the software and examples and requires approximately 3 GB of disk space. Please note, it does not install the *FLEXnet* files.

Configuring User Accounts

Configure the user accounts that will run EMPro as follows, where:

- <path_to_license_file> is the path to your license file
- <bin_directory> is the directory that contains startempro. If you've installed EMPro
 to the default location, this will either be /usr/local/EMPro2010/bin/Linuxi686RHEL4 or /usr/local/EMPro2010/bin/Linux-x86_64 depending on whether or not
 you want the 32-bit or 64-bit version to be found.

C Shell

Add the following at the end of *\$HOME/.cshrc*:

```
setenv AGILEESOFD_LICENSE_FILE <path_to_license_file>
set path = ( . <bin_directory> $path )
```

Bourne or Korn Shell

Add the following at the end of *\$HOME/.profile*:

```
AGILEESOFD_LICENSE_FILE=_<path_to_license_file>
PATH=.:<bin_directory>:$PATH
export AGILEESOFD_LICENSE_FILE PATH
```

If you have other products installed using AGILEESOFD_LICENSE_FILE, see *Linux License* Setup (license) for more details.

\rm Note

If you are running Common Desktop Environment (CDE) or HP VUE, your user account may be using \$HOME/.dtprofile or \$HOME/.vueprofile respectively to set up your user account instead of .cshrc or .profile. The .dtprofile and .vueprofile files contain a line that can be uncommented to activate the use of .cshrc or .profile. Contact your system administrator, or refer to the CDE or VUE documentation for details.

Once the user accounts are configured, each user should log in and verify that the new environment variables are set. Type the **env** command and check to ensure that *AGILEESOFD_LICENSE_FILE* is set and that *PATH* contains a path to the correct EMPro **bin** subdirectory.

Setting the Display

If you plan to run EMPro from a remote computer and you want the display to appear on

setenv DISPLAY <my_hostname>: 0.0 (C-Shell)
DISPLAY = <my_hostname>: 0.0 (Korn Shell, Bourne Shell)
export DISPLAY