

Synopsys FPGA Licensing User Guide

Version C-2009.03, March 2009

<http://solvnet.synopsys.com>

SYNOPSYS®

Disclaimer of Warranty

Synopsys, Inc. makes no representations or warranties, either expressed or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of merchantability or fitness for a particular purpose of for any indirect, special or consequential damages.

Copyright Notice

Copyright © 2009 Synopsys, Inc. All Rights Reserved.

Synopsys software products contain certain confidential information of Synopsys, Inc. Use of this copyright notice is precautionary and does not imply publication or disclosure. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the prior written permission of Synopsys, Inc. While every precaution has been taken in the preparation of this book, Synopsys, Inc. assumes no responsibility for errors or omissions. This publication and the features described herein are subject to change without notice.

Trademarks

Registered Trademarks (®)

Synopsys, AMPS, Astro, Behavior Extracting Synthesis Technology, Cadabra, CATS, Certify, Design Compiler, DesignWare, Formality, HDL Analyst, HSPICE, Identify, iN-Phase, Leda, MAST, ModelTools, NanoSim, OpenVera, PathMill, Physical Compiler, PrimeTime, SiVL, SCOPE, Simply Better Results, SNUG, SolvNet, Synplicity, the Synplicity logo, Synplify, Synplify Pro, Synthesis Constraints Optimization Environment, TetraMAX, VCS, Vera, and YIELDirector are registered trademarks of Synopsys, Inc.

Trademarks (™)

AFGen, Apollo, Astro-Rail, Astro-Xtalk, Aurora, AvanWaves, BEST, Columbia, Columbia-CE, Confirma, Cosmos, CosmosLE, CosmosScope, CRITIC, DC Expert, DC Professional, DC Ultra, Design Analyzer, Design Vision, DesignerHDL, DesignPower, Direct Silicon Access, Discovery, Eclipse, Encore, EPIC, Galaxy, HANEX, HAPS, HapsTrak, HDL Compiler, Hercules, Hierar-

chical Optimization Technology, High-performance ASIC Prototyping System, HSIM, HSIM^{plus}, i-Virtual Stepper, IICE, in-Sync, iN-Tandem, Jupiter, Jupiter-DP, JupiterXT, JupiterXT-ASIC, Liberty, Libra-Passport, Library Compiler, Magellan, Mars, Mars-Rail, Mars-Xtalk, Milkyway, ModelSource, Module Compiler, MultiPoint, Physical Analyst, Planet, Planet-PL, Polaris, Power Compiler, Raphael, Saturn, Scirocco, Scirocco-i, Star-RCXT, Star-SimXT, System Compiler, System Designer, Taurus, TotalRecall, TSUPREM-4, VCS Express, VCSi, VHDL Compiler, VirSim, and VMC are trademarks of Synopsys, Inc.

Service Marks (SM)

MAP-in, SVP Café, and TAP-in are service marks of Synopsys, Inc.

SystemC is a trademark of the Open SystemC Initiative and is used under license. ARM and AMBA are registered trademarks of ARM Limited. Saber is a registered trademark of SabreMark Limited Partnership and is used under license. All other product or company names may be trademarks of their respective owners.

Restricted Rights Legend

Government Users: Use, reproduction, release, modification, or disclosure of this commercial computer software, or of any related documentation of any kind, is restricted in accordance with FAR 12.212 and DFARS 227.7202, and further restricted by the Synopsys Software License and Maintenance Agreement. Synopsys, Inc., Synplicity Business Group, 600 West California Avenue, Sunnyvale, CA 94086, U. S. A.

Printed in the U.S.A
March 2009

Synopsys Software License and Maintenance Agreement

Synplicity Software Products

This Software License and Maintenance Agreement (“Agreement”) is a legal agreement between you (“Licensee”) and the contracting Synopsys entity identified below (“Synopsys”). YOU MUST READ AND AGREE TO THE TERMS OF THIS AGREEMENT BEFORE ANY SOFTWARE CAN BE DOWNLOADED OR INSTALLED OR USED. BY CLICKING ON THE “ACCEPT” BUTTON OF THIS AGREEMENT, OR BY DOWNLOADING, INSTALLING OR USING SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE WITH THE TERMS AND CONDITIONS OF THIS AGREEMENT, THEN YOU SHOULD EXIT THIS PAGE AND NOT DOWNLOAD OR INSTALL OR USE ANY SOFTWARE. BY DOING SO YOU FOREGO ANY IMPLIED OR STATED RIGHTS TO DOWNLOAD OR INSTALL OR USE SOFTWARE AND YOU MAY RETURN IT TO THE PLACE YOU OBTAINED IT FOR A FULL REFUND (IF APPLICABLE).

Definition. “SOFTWARE” means the software product of Synopsys’s Synplicity business group that Licensee has acquired, including related documentation (whether in print or electronic form), any authorization keys, authorization codes, and license files, and any updates or upgrades of such software provided by Synopsys.

License Grant. Synopsys grants to Licensee a non-exclusive license to (a) install the SOFTWARE, (b) use or authorize use internally of the SOFTWARE by up to the number of nodes for which Licensee has a license and for which Licensee has the security key(s) or authorization code(s) provided by Synopsys or its agents for the purpose of creating and modifying Designs (as defined below), and (c) copy the SOFTWARE only as follows: (i) to directly support authorized use under the license, and (ii) in order to make a reasonable number of copies of the SOFTWARE for backup purposes only.

Documentation License. In addition, Synopsys grants to Licensee a non-exclusive license to copy and distribute internally the documentation portion of the SOFTWARE in support of its license to use the program portion of the SOFTWARE.

Node-Locked and Floating Licenses.

Node-Locked License. If Licensee has obtained the SOFTWARE under a node-locked license, then a “node” refers to a specific machine and the SOFTWARE may be installed only on the number of nodes indicated on the applicable Synopsys quote, must be used only on the node(s) on which it is

installed, and may be accessed only by users who are physically present at that node. Further, a node-locked license may only be used by one user at a time running one (1) instance of the SOFTWARE at a time.

Floating License. If Licensee has obtained the SOFTWARE under a floating license, then a “session” refers to a concurrent user or session and the SOFTWARE may be used concurrently by up to the quantity of sessions or licenses indicated on the applicable Synopsys quote. All SOFTWARE must be used within the country for which the systems were licensed and at Licensee’s Site; however, if Licensee has a floating license then remote use is permitted by employees who work at Licensee’s Site but are temporarily telecommuting to that Licensee’s Site from less than fifty (50) miles away (for example, an employee who works at a home office on occasion) as long as such access is through a secure network that requires a secure ID card or other protective security measures, but the maximum number of concurrent sessions or nodes still applies. For purposes of this Agreement, the “Licensee’s Site” means a five (5) mile radius around (a) the location of the server on which the SOFTWARE resides, or (b) when a server is not required, the location of the client computer for which the license was issued, each as specified in the applicable Synopsys quote.

Evaluation License. If Licensee has obtained the SOFTWARE pursuant to an evaluation license, then, in addition to all other terms and conditions herein, the following restrictions apply: (a) the license to the SOFTWARE terminates after the period of time indicated on the SOFTWARE file (unless otherwise agreed to in writing by Synopsys); and (b) Licensee may use the SOFTWARE for the sole purpose of internal testing and evaluation to determine whether Licensee wishes to license the SOFTWARE on a commercial basis. Licensee shall not use the SOFTWARE to design any integrated circuits for production or pre-production purposes or any other commercial use including, but not limited to, for the benefit of Licensee’s customers. If Licensee breaches any of the foregoing restrictions, then Licensee shall pay to Synopsys a license fee equal to Synopsys’s perpetual list price plus maintenance for the commercial version of the SOFTWARE. Licensee agrees that damages for such a breach would be difficult to assess, and such payment represents a reasonable assessment of the potential damage to Synopsys. Licensee recognizes and agrees that this amount is a reasonable, liquidated amount and not a penalty. Evaluation licenses are provided “AS IS.” Therefore, the warranty and indemnification provisions of this Agreement do not apply to evaluation licenses.

Time-Based (Subscription) License. If Licensee has obtained a time-based license to the SOFTWARE, in addition to all other terms and conditions herein, the following restrictions apply: (a) Licensee is authorized to use the SOFTWARE only for a limited time (which time is indicated on the quotation or in the purchase confirmation documents); (b) Licensee's right to use the SOFTWARE terminates on the date the license term expires as set forth in the quotation or the purchase confirmation documents, unless Licensee has renewed the license by paying the applicable fees. =

SOFTWARE Delivery. Electronic Software Transfer ("EST") where available, is Synopsys' default method of delivery of the SOFTWARE. If Licensee does not wish to receive the SOFTWARE via EST, then Licensee must note this preference on Licensee's purchase order. However, if Licensee was receiving a tax advantage based on EST delivery, and Licensee does not receive the same tax advantage when the SOFTWARE is delivered in tangible media, then Licensee shall be responsible for payment of all taxes associated with the receipt of the SOFTWARE in tangible form. Nothing herein is intended to modify or relieve Licensee's obligation to bear or reimburse all transaction taxes, as provided herein. Licensee shall provide all information and documents reasonably requested by Synopsys for each Licensee location in order to effect delivery by EST. Upon the acceptance of an EST order by Synopsys, and the satisfaction of all Synopsys prerequisites prior to delivery, the SOFTWARE and Documentation will be made available to Licensee for electronic download from a Synopsys server. Synopsys or its authorized representative completes its obligation to deliver the SOFTWARE via EST at such time Synopsys or its authorized representative makes it available on a Synopsys or other authorized server and gives Licensee a method of accessing and downloading it. Licensee is responsible for: (i) notifying Synopsys of any change in the EST contact email address and (ii) obtaining access to the Internet and retrieving the fulfilled order from the Synopsys server. Delivery by EST is not available for any product which is "dongle" based. This includes all "Node-Locked" products as well as "Floating" licenses installed on a Windows NT or Linux operating system.

Copy Restrictions. SOFTWARE is protected by United States copyright laws and international treaty provisions and Licensee may only copy the SOFTWARE as explicitly set forth above. Any permitted copies must include all copyright and trademark notices.

Use Restrictions. This SOFTWARE is licensed to Licensee for internal use only. Licensee shall not (and shall not allow any third party to): (a) decompile, disassemble, reverse engineer or attempt to reconstruct, identify or discover any source code, underlying ideas, underlying user interface techniques or

algorithms of the SOFTWARE by any means whatever, or disclose any of the foregoing; (b) host the SOFTWARE acquired under a node-locked license via the Internet or Intranet; (c) use the SOFTWARE for timesharing or service bureau purposes or otherwise circumvent the internal use restrictions; (d) modify, incorporate into or with other software, or create a derivative work of any part of the SOFTWARE; (e) disclose the results of any benchmarking of the SOFTWARE, or use such results for its own competing software development activities, without the prior written permission of Synopsys; (f) attempt to circumvent any user limits, maximum gate count limits or other license, timing or use restrictions that are built into the SOFTWARE; (g) use the SOFTWARE to create, modify, or simulate Designs for third parties; or (h) use the SOFTWARE in the development of any product if the failure or malfunction of that product could reasonably be expected to result in personal injury, death, or catastrophic loss.

Transfer Restrictions/No Assignment. The SOFTWARE may only be used under this license at Licensee's Site and on designated equipment as set forth in the license grant above, and may not be moved to a location other than the Licensee's Site or used on equipment other than the designated equipment or otherwise physically transferred without the prior written consent of Synopsys. Any permitted physical transfer of the SOFTWARE will require that Licensee executes a "Software Authorization Transfer Agreement" provided by Synopsys. Further, Licensee shall not sublicense, or assign (by operation of law, including change of control, merger, sale of assets, or otherwise) this Agreement or any of the rights or licenses granted under this Agreement, without the prior written consent of Synopsys. Any such unauthorized transfer will be ineffective, null, and void (and Licensee will be in breach of this Agreement).

Security. Licensee agrees to take all appropriate measures to safeguard the SOFTWARE and prevent unauthorized access or use thereof. Suggested ways to accomplish this include: (i) implementation of firewalls and other security applications, (ii) use of FLEXlm options file that restricts access to the SOFTWARE to identified users; (iii) maintaining and storing license information in paper format only; (iv) changing TCP port numbers every three (3) months; and (v) communicating to all authorized users that use of the SOFTWARE is subject to the restrictions set forth in this Agreement. Licensee shall monitor each end user's use of the SOFTWARE to ensure that the end user abides by the terms of this Agreement.

Ownership of the SOFTWARE. Synopsys retains all right, title, and interest in the SOFTWARE (including all copies), and all worldwide intellectual property rights therein. Synopsys reserves all rights not expressly granted to Licensee. This license is not a sale of the original SOFTWARE or of any copy.

Ownership of Design Techniques. “Design” means the representation of an electronic circuit or device(s), derived or created by Licensee through the use of the SOFTWARE in its various formats, including, but not limited to, equations, truth tables, schematic diagrams, textual descriptions, hardware description languages, and netlists. “Design Techniques” means the data, circuit and logic elements, libraries, algorithms, search strategies, rule bases, techniques and technical information incorporated in the SOFTWARE and employed in the process of creating Designs. Synopsys retains all right, title and interest in and to Design Techniques incorporated in the SOFTWARE, including all intellectual property rights embodied therein, provided that to the extent any Design Techniques are included as part of or embedded within Designs created by Licensee, Synopsys grants Licensee a personal, nonexclusive, nontransferable license to reproduce the Design Techniques and distribute such Design Techniques solely as incorporated into Licensee’s Designs and not on a standalone basis. Additionally, Licensee acknowledges that Synopsys has an unrestricted, royalty-free right to incorporate any Design Techniques disclosed by Licensee into its software, documentation and other products, and to sublicense third parties to use those incorporated Design Techniques.

Protection of Confidential Information. “Confidential Information” means (a) as to Synopsys, the terms and conditions of this Agreement, the SOFTWARE, in object and source code form, the documentation, any license keys, and any related technology, idea, algorithm or information contained therein, including without limitation Design Techniques, and any trade secrets related to any of the foregoing; (b) each party’s product plans, Designs, costs, prices and names; non-published financial information; marketing plans; business opportunities; personnel; research; development or know-how; and (c) any information designated by the disclosing party as confidential in writing or, if disclosed orally, designated as confidential at the time of disclosure and reduced to writing and designated as confidential in writing within thirty (30) days; provided, however that “Confidential Information” will not include information that: (i) is or becomes generally known or available by publication, commercial use or otherwise through no fault of the receiving party; (ii) is known and has been reduced to tangible form by the receiving party at the time of disclosure and is not subject to restriction; (iii) is independently developed by the receiving party without use of the disclosing party’s Confidential Information; (iv) is lawfully obtained from a

third party who has the right to make such disclosure; (v) is released for publication by the disclosing party in writing; or (vi) is an idea or suggestion that Licensee voluntarily provides to Synopsys (in any manner, whether in writing or orally or otherwise) regarding the SOFTWARE, documentation, or Design Techniques, including possible enhancements or improvements (“Feedback”). Synopsys may freely use and disseminate any Feedback Licensee provides, and Licensee agrees not to claim that Synopsys owes it any compensation for its use or dissemination of such Feedback.

Each party will protect the other party’s Confidential Information from unauthorized disclosure and use with the same degree of care that each such party uses to protect its own like information but in no case less than reasonable care. Neither party will use the other’s Confidential Information for purposes other than those necessary to directly further the purposes of this Agreement. Neither party will disclose to third parties the other’s Confidential Information without the prior written consent of the other party or unless such disclosure is necessary to comply with a valid court order or subpoena. If Licensee believes that it must disclose Synopsys’s Confidential Information to comply with a valid court order or subpoena, it must promptly notify Synopsys and cooperate with Synopsys if Synopsys chooses to contest the disclosure requirement, seek confidential treatment of the information to be disclosed, or to limit the nature or scope of the information to be disclosed. Synopsys will do the same if it believes it must disclose your Confidential Information under similar circumstances.

Open Source Software. The SOFTWARE may be delivered with software that is subject to open source licensing terms (“Open Source Software”) which are available at http://www.synopsys.com/sbgproducts_license_agreement/. If the Open Source Software license also requires source code to be made available, Licensee may reference http://www.synopsys.com/sbgproducts_license_agreement/ for information on how to obtain such source code. Licensee agrees that all Open Source Software shall be and shall remain subject to the terms and conditions under which it is provided. The Open Source Software is provided “AS IS,” WITHOUT ANY WARRANTY OF ANY KIND, AND SYNOPSIS FURTHER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, WITH RESPECT TO OPEN SOURCE SOFTWARE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NEITHER SYNOPSIS NOR THE LICENSORS OF OPEN SOURCE SOFTWARE SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AN ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING

NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE ECLIPSE SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Copyrights to the Open Source Software are held by the copyright holders indicated in the copyright notices in the corresponding source files.

Audit Rights. With reasonable prior notice, Synopsys shall have the right to audit during Licensee's normal business hours all records and accounts as may contain information regarding Licensee's compliance with the terms of this Agreement. Synopsys shall keep in confidence all information gained as a result of any audit. In the event any audit discloses a breach of this Agreement, Synopsys reserves the right to terminate this Agreement and/or recover damages, attorney's fees, and costs, including the cost of the audit.

Fees and Payment. The fees for the SOFTWARE will be identified in the applicable Synopsys sales quotation or other agreement ("Purchasing Agreement") describing (among other things) the SOFTWARE Licensee has licensed, including pricing information. You agree to pay the fees according to the payment terms in the applicable Purchasing Agreement. If the applicable Purchasing Agreement does not contain specific payment terms for the fees in question, payment of those fees will be due within 30 days after the date of Synopsys's invoice. If you do not pay an amount by the Purchasing Agreement due date, Synopsys will have the right to terminate this Agreement and/or the Purchasing Agreement and accelerate the due date of all remaining payments. In this event, you will owe the entire outstanding balance as soon as you receive written notice from Synopsys that your payment is due. All payments you make to Synopsys are non-refundable. You may not offset any amounts you believe Synopsys owes you against any payments you make to Synopsys under this Agreement. You must make payments in U.S. dollars. If you do not pay an amount by the due date, you must also pay a late payment charge of 1.5% per month or the highest rate permitted by law, whichever is less. If you become the subject of any bankruptcy, dissolution, liquidation, or similar proceedings or make a general assignment for the benefit of your creditors, Synopsys may apply any payments you have previously made to Synopsys for products or services not yet delivered by Synopsys against any amounts you owe Synopsys at that time for products or services that have been delivered by Synopsys (under this Agreement or otherwise).

Taxes. You will be solely responsible for paying all taxes (including sales, use, consumption, withholding, and value-added taxes and similar taxes), other than Synopsys's income taxes, that are imposed on or result from your purchase, license, or use of Synopsys products and services. If Synopsys is

required by law to collect and remit any such taxes, Synopsys may invoice you for such taxes and you agree to pay the invoiced amount to Synopsys. If you are required by the respective jurisdiction where the SOFTWARE is used, or where services are provided, to withhold taxes from payments to Synopsys, you may withhold from the total amount due to the respective Synopsys contracting entity the minimum amount required (but no more). You may only withhold taxes related to a payment at the time of such payment. You must then promptly pay that amount to the appropriate tax authority and provide Synopsys with an official receipt for the payment within 60 days of your payment.

Termination. Synopsys may terminate this Agreement immediately if Licensee breaches any provision, including without limitation, failure by Licensee to implement adequate security measures as set forth above, provided that if the breach is curable, Synopsys will provide Licensee a fifteen (15) day period within which to cure the breach before terminating this Agreement. Upon notice of termination by Synopsys, all rights granted to Licensee under this Agreement will immediately terminate, and Licensee shall cease using the SOFTWARE and return or destroy all copies (and partial copies) of the SOFTWARE and documentation. The following provisions shall survive any termination or expiration of this Agreement: Ownership of SOFTWARE, Ownership of Design Techniques, Protection of Confidential Information, Audit Rights, Disclaimer, Limitation of Liability, Export and Miscellaneous, and shall certify in writing to Synopsys that Licensee has complied with these requirements. This Agreement expires upon expiration of the license granted herein. Licensee will remain obligated to pay any amounts it owes to Synopsys when this Agreement is terminated.

Maintenance Services. If you have purchased maintenance services, or your SOFTWARE license includes maintenance services (such as for certain time-based licenses), then you shall be entitled to the following (collectively, "Maintenance Services"): (a) Support: Synopsys will provide you with access to SolvNet and online Documentation, and will use commercially reasonable efforts to make available the Synopsys Support Center on Monday through Friday, between the hours of 9:00 AM and 5:00 PM Pacific time, excluding Synopsys's Purchasing Agreement holidays; and (b) Software Updates: Synopsys will use commercially reasonable efforts to provide error corrections to the SOFTWARE, as well as minor improvements to the SOFTWARE, as such corrections and improvements become generally available. Any other upgrades or enhancements to the SOFTWARE are not made available by Synopsys as part of Maintenance Services and may be subject to additional charges.

Conditions for Maintenance Services. Synopsys may update its Maintenance Services terms on 60 days prior written notice, provided that these updates are applied generally to its Maintenance Service customers. In order to receive Maintenance Services for SOFTWARE, all of the following conditions must be met: (i) you must have purchased Maintenance Services for such SOFTWARE (unless it is licensed under a certain time-based license, in which case Maintenance Services are included); (ii) you must appoint a qualified contact person to interface with Synopsys regarding Maintenance Services, and identify such person to Synopsys in advance; (iii) such qualified contact person must be trained in the use of such SOFTWARE; (iv) you must provide Synopsys with access to the information and system facilities reasonably necessary to provide the Maintenance Services; (v) you must follow the directions provided by the Synopsys Support Center to resolve technical problems; (vi) you must follow the operating instructions and procedures for the SOFTWARE as specified in the Documentation or provided by Synopsys; and (vii) you must notify Synopsys of any error or other problem in the SOFTWARE using Synopsys's current problem reporting procedure. Synopsys will have no obligation to provide Maintenance Services for any SOFTWARE that is damaged, modified (by anyone other than Synopsys), incorporated into other software, or installed in any computing environment not supported by Synopsys, or for any version of SOFTWARE other than the latest and immediately preceding version, or for any problems caused by your negligence, abuse, misuse, or by any causes beyond Synopsys's reasonable control.

ViewConnect. If you wish to permit Synopsys to deliver Maintenance Services through the use of a shared customer desktop, you must download and install the ViewConnect Tool and related publicly-available, third-party software modules. You are not required to use the ViewConnect Tool, but if you choose to do so, you have the nonexclusive right to use the ViewConnect Tool only to enable Synopsys to remotely access your computer system for the purpose of providing Maintenance Services. Your rights to the third-party software modules are separately described in their accompanying license terms. Neither the limited warranty nor the intellectual property infringement provision of this Agreement applies to the ViewConnect Tool or to the third-party software modules. **The ViewConnect Tool is licensed "as is," and Synopsys makes no warranties, express, implied, statutory, or otherwise, regarding the ViewConnect Tool. Synopsys disclaims all liability of any kind in connection with such third-party software modules, and specifically disclaims any implied warranties of noninfringement, title, merchantability, or fitness for a particular purpose, or arising from a course of dealing or usage of trade both with respect to the ViewConnect Tool and the third-party software modules.**

Limited Warranty. Synopsys warrants that the program portion of the SOFTWARE will perform substantially in accordance with the accompanying documentation for a period of ninety (90) days from the date of delivery. Synopsys's entire liability and Licensee's exclusive remedy for a breach of the preceding limited warranty shall be, at Synopsys's option, either (a) return of the license fee, or (b) providing a fix, patch, work-around, or replacement of the SOFTWARE. In either case, Licensee must return the SOFTWARE to Synopsys with a copy of the purchase receipt or similar document. Replacements are warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. Some states/jurisdictions do not allow such limitations, so the above limitation may not apply.

Disclaimer. EXCEPT AS EXPRESSLY SET FORTH ABOVE, TO THE MAXIMUM EXTENT PERMITTED BY LAW, NO OTHER WARRANTIES OR CONDITIONS, EITHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, ARE MADE BY SYNOPSIS OR ITS LICENSORS WITH RESPECT TO THE SOFTWARE AND THE ACCOMPANYING DOCUMENTATION, AND SYNOPSIS EXPRESSLY DISCLAIMS ALL WARRANTIES AND CONDITIONS NOT EXPRESSLY STATED HEREIN, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, NONINFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, AND ANY WARRANTIES ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE. WITHOUT LIMITING THE FOREGOING, SYNOPSIS AND ITS LICENSORS DO NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE SOFTWARE WILL MEET LICENSEE'S REQUIREMENTS, BE UNINTERRUPTED OR ERROR FREE, OR THAT ALL DEFECTS IN THE PROGRAM WILL BE CORRECTED. Licensee assumes the entire risk as to the results and performance of the SOFTWARE.

Limitation of Liability. TO THE MAXIMUM EXTENT PERMITTED BY LAW, IN NO EVENT SHALL SYNOPSIS OR ITS LICENSORS OR THEIR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTIONS, LOSS OF BUSINESS INFORMATION, OR OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THE SOFTWARE, EVEN IF SYNOPSIS AND/OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. FURTHER, IN NO EVENT SHALL SYNOPSIS'S LICENSORS BE LIABLE FOR ANY DIRECT DAMAGES ARISING OUT OF LICENSEE'S USE OF THE SOFTWARE. IN NO EVENT WILL SYNOPSIS BE LIABLE TO LICENSEE FOR DAMAGES IN AN AMOUNT GREATER THAN THE FEES PAID FOR THE USE OF THE PARTICULAR SOFTWARE AT ISSUE. Without limiting the foregoing, the SOFTWARE may embody a method to protect the security of Designs; however, Synopsys does not warrant the effectiveness of such method and shall have no liability resulting from any failure

thereof. Some states/jurisdictions do not allow the limitation or exclusion of incidental or consequential damages, so the above limitations or exclusions may not apply. The limitations of liability in this section are a fundamental part of this Agreement and enable Synopsys to provide products and services to Licensee at lower prices. These limitations of liability are intended to apply even if an exclusive remedy is found to have failed of its essential purpose.

Safe Operation. THE SOFTWARE IS NOT DESIGNED OR INTENDED FOR DESIGNING COMPONENTS FOR EQUIPMENT INTENDED FOR SURGICAL IMPLANT INTO THE BODY, OR OTHER APPLICATIONS INTENDED TO SUPPORT OR SUSTAIN LIFE, FOR USE IN FLIGHT CONTROL OR ENGINE CONTROL EQUIPMENT WITHIN AN AIRCRAFT, OR FOR ANY OTHER APPLICATION IN WHICH THE FAILURE THEREOF COULD CREATE A SITUATION IN WHICH PERSONAL INJURY OR DEATH MAY OCCUR, AND LICENSEE SHALL HAVE NO RIGHTS HEREUNDER FOR ANY SUCH APPLICATIONS.

Intellectual Property Right Infringement. Synopsys will, at its expense, defend or, at its option, settle any claim or action brought against Licensee to the extent it is based on a third party claim that the SOFTWARE as used pursuant to this Agreement infringes or violates any United States patent issued before the delivery date of the subject SOFTWARE, copyright, trade secret or trademark of any third party, and Synopsys will indemnify and hold Licensee harmless from and against any damages, costs and fees awarded in such claim or action; provided that Licensee provides Synopsys with (a) prompt written notification of the claim or action; (b) sole control and authority over the defense or settlement thereof (including all negotiations); and (c) at Synopsys's expense, all available information, assistance and authority to settle and/or defend any such claim or action. Synopsys's obligations under this subsection do not apply to the extent that (i) such claim or action would have been avoided but for modifications of the SOFTWARE, or portions thereof, other than modifications made by Synopsys after delivery to Licensee; (ii) such claim or action would have been avoided but for the combination or use of the SOFTWARE, or portions thereof, with other products, processes or materials not supplied or specified in writing by Synopsys; (iii) Licensee continues allegedly infringing activity after being notified thereof or after being informed of modifications that would have avoided the alleged infringement; or (iv) Licensee's use of the SOFTWARE is not strictly in accordance with the terms of this Agreement. Licensee will be liable for all damages, costs, expenses, settlements and attorneys' fees related to any claim of infringement arising as a result of (i)-(iv) above.

If the SOFTWARE becomes or, in the reasonable opinion of Synopsys is likely to become, the subject of an infringement claim or action, Synopsys may, at Synopsys's option and at no charge to Licensee, (a) obtain a license so Licensee may continue use of the SOFTWARE; (b) modify the SOFTWARE to avoid the infringement; (c) replace the SOFTWARE with a compatible, functionally equivalent, and non-infringing product, or (d) terminate the licenses granted hereunder and refund to Licensee the amount paid for the SOFTWARE, as depreciated on a straight-line 5-year basis, or such other shorter period applicable to time-based licenses.

THE FOREGOING PROVISIONS OF THIS SECTION STATE THE ENTIRE AND SOLE LIABILITY AND OBLIGATIONS OF SYNPLICITY, AND THE EXCLUSIVE REMEDY OF LICENSEE, WITH RESPECT TO ANY ACTUAL OR ALLEGED INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS BY THE SOFTWARE (INCLUDING DESIGN TECHNIQUES) AND DOCUMENTATION.

Export. Licensee agrees that the goods, software, and technology subject to this Agreement are subject to the export control laws and regulations of the United States, including but not limited to the Export Administration Regulations ("EAR"), and sanctions regulations of the U.S. Department of Treasury, Office of Foreign Asset Controls and that Licensee will comply with these laws and regulations. Without limiting the foregoing, Licensee will not, without a U.S. Bureau of Industry and Security license or license exception, (i) export, re-export, or transfer any technology, software, or source code subject to this Agreement, either directly or indirectly, to any national of any country identified in Country Groups D:1 or E:2 as defined in the EARs, or (ii) export to any country identified in Country Groups D:1 or E:2 the direct product of the technology, software or source code, if such foreign produced product is subject to the national security controls as identified on the Commerce Control List ("CCL"). In addition, goods, software and any technology subject to this Agreement may not be exported, reexported, or transferred to (a) to any person or entity listed on the "Entity List", "Denied Persons List" or the list of "Specifically Designated Nationals and Blocked Persons" as such lists are maintained by the U.S. Government, or (b) an end-user engaged in activities related to weapons of mass destruction. Such activities include but are not necessarily limited to activities related to: (1) the design, development, production, or use of nuclear materials, nuclear facilities, or nuclear weapons; (2) the design, development, production, or use of missiles or support of missiles projects; and (3) the design, development, production, or use of chemical or biological weapons. Licensee agrees to indemnify, to the fullest extent permitted by law, Synopsys from and against any fines or penalties that may arise as a result of Licensee's breach of this provision.

Language. This Agreement is in the English language only, which language shall be controlling in all respects, and all versions hereof in any other language shall not be binding on the parties hereto. All communications and notices to be made or given pursuant to this Agreement shall be in the English language.

Government Users. If the SOFTWARE is licensed to the United States government or any agency thereof, then the SOFTWARE and any accompanying documentation will be deemed to be “commercial computer software” and “commercial computer software documentation”, respectively, pursuant to 48 C.F.R. 227.7202-1, 227.7202-3, and 48 C.F.R. 12.212, as applicable. Any use, reproduction, release, performance, display or disclosure of the SOFTWARE and accompanying documentation by the U.S. Government will be governed solely by the terms of this Agreement and are prohibited except to the extent expressly permitted by the terms of this Agreement.

Contracting Synopsis Entity. The specific Synopsis entity with which you are contracting under this agreement depends on the country to which the SOFTWARE is delivered when you obtain it from Synopsis. If the SOFTWARE is delivered to you in a country in the Americas or Africa, the contracting Synopsis entity is Synopsis, Inc., with a principal place of business at 700 E. Middlefield Road, Mountain View, California 94043, USA. If the SOFTWARE is delivered to you in Taiwan, the contracting Synopsis entity is Synopsis International Limited Taiwan Branch, with a principal place of business at Taipei, Room 3108, 31F, 333, Section 1, Keelung Road, Taipei 110, Taiwan. If the SOFTWARE is delivered to you in Hungary, Australia, Belarus, Bulgaria, Israel, Poland, the Republic of Korea, Romania, Russia, Ukraine or Vietnam, the contracting Synopsis entity is Synopsis Global Kft, with a principal place of business at Kálmán Imre útca # 1, 5th Floor, Budapest 1054, Hungary. If the SOFTWARE is delivered to you in Japan, the contracting Synopsis entity is Nihon Synopsis Co., Ltd., with a principal place of business at Sumitomo Fudosan Oimachi Ekimae Bldg., 1-28-1, Oi, Shinagawa-ku, Tokyo 140-0014. If the SOFTWARE is delivered to you in any country other than those identified above, the contracting Synopsis entity is Synopsis International Limited, with a principal place of business at Block One Blanchardstown Corporate Park, Blanchardstown, Dublin 15, Ireland.

Synopsis Entities. Synopsis, Inc. and its wholly-owned subsidiaries, including Synopsis International Limited, Synopsis International Limited Taiwan Branch, Synopsis Global Kft, and Nihon Synopsis Co., Ltd., have agreed to their respective rights and obligations regarding the distribution of the SOFTWARE and the performance of obligations related to the SOFTWARE. You acknowledge that: (i) Synopsis Inc. or any directly or indirectly

wholly-owned subsidiary or branch of Synopsys, Inc. may treat a purchase order addressed to that entity, representative office or branch as having been addressed to the appropriate entity or entities or branch with distribution rights for the geographic region in which the SOFTWARE will be used; and (ii) delivery will be completed by the Synopsys entity or branch with distribution rights for the geographic region in which the SOFTWARE will be used or service will be provided.

Amendments. This Agreement may be amended only by means of a written instrument signed by authorized representatives of both parties that specifically refers to this Agreement and states the parties' intention to amend it. No additional or inconsistent terms on any purchase order or similar document you may submit to Synopsys will be binding on Synopsys or have any legal effect.

Miscellaneous. This Agreement is the entire agreement between Licensee and Synopsys with respect to the license to the SOFTWARE, and supersedes any previous oral or written communications or documents (including, if you are obtaining an update, any agreement that may have been included with the initial version of the SOFTWARE). This Agreement is governed by the laws of the State of California, USA excluding its conflicts of laws principles. The federal and state courts located in Santa Clara County, California have exclusive jurisdiction over any disputes arising from or relating to this Agreement, and each party consents to such jurisdiction and venue. This Agreement will not be governed by the U. N. Convention on Contracts for the International Sale of Goods. If any provision, or portion thereof, of this Agreement is found to be invalid or unenforceable, it will be enforced to the extent permissible under applicable law and the remainder of this Agreement will remain in full force and effect. Failure to prosecute a party's rights with respect to a default hereunder will not constitute a waiver of the right to enforce rights with respect to the same or any other breach. Each party will be excused from performance of its obligations under this Agreement, except payment obligations, to the extent that performance is rendered impossible by earthquake, fire, flood, governmental action, labor disruptions, supplier failures, or any other event or circumstance beyond that party's reasonable control. Except where this Agreement expressly provides exclusive remedies, all rights and remedies of either party (including termination rights) are cumulative. Licensee agrees that monetary damages alone would not be an adequate remedy, and therefore Synopsys will be entitled to injunctive relief if Licensee materially breaches the license restrictions or confidentiality provisions in this Agreement. The prevailing party in any action to enforce this Agreement will be entitled to recover costs and expenses including reasonable attorneys' fees. Section headings in this Agreement are for convenience only.

The word “including” (and variations thereof) is not intended to be limiting. No rule of strict construction is to be used when interpreting this Agreement. The parties to this Agreement are independent contractors. Neither party is the agent or partner of the other party, or has any power or authority to act on behalf of the other party. This Agreement may be signed in multiple counterparts, each of which will be deemed an original and which together will constitute one instrument.

Synopsys SLMA.Synplicity Products (rev. 2008.07.24)
July 2008

Contents

Chapter 1: Synopsys FPGA Licensing

Overview of License Configurations	1-2
License Configuration Tables	1-3
Configuring Evaluation Licenses	1-6
Configuring Standard Product Licenses	1-8
Tool-Specific Licensing Flows	1-10
Licensing for FPGA Synthesis Tools	1-11
Licensing for Synplify DSP	1-13
Licensing for Identify Tools	1-14

Chapter 2: Installation

Installing the Synthesis Tools	2-2
Installing on a Windows Platform	2-2
Installing from a CD (Solaris or Linux)	2-3
Downloading from the Synopsys Website (Solaris/Linux)	2-4
Installing the Synplify DSP Software	2-6
Installing Synplify DSP on a Windows Platform	2-6
Installing Synplify DSP on a Linux Platform	2-8
MathWorks Required Features	2-11
Installing the Identify/Identify Pro Software	2-12
Installing the Windows Parallel Port Driver	2-12
Installing the Linux Parallel Port Driver	2-13
Installing Windows Security Keys	2-15
Installing the Windows Safenet Sentinel Driver	2-16
Installing the Windows FLEXid Driver	2-17
Installing Linux Security Keys	2-19
Installing the Linux Sentinel USB Daemon	2-19
Installing the Linux FLEXid Daemon	2-21

Chapter 3: License Configuration

Configuring Serverless Node-Locked Licenses	3-2
Configuring Server-Based Node-Locked Licenses	3-4
Configuring Windows License Servers	3-6
Setting up a Windows License Server	3-6
Starting the License Daemon with LMTOOLS	3-8
Configuring the Windows Firewall for Client Access	3-10
Configuring Linux License Servers	3-13
Updating the License File for Linux Servers	3-13
Setting the LICENSE_FILE Environment Variable	3-14
Starting the License Manager Daemon on Linux Servers	3-15
Configuring Solaris License Servers	3-17
Updating the Solaris License Server File	3-17
Starting the Solaris License Manager Daemon	3-18
Verifying the Identify License Manager	3-20
Other License Server Configurations	3-22
Configuring WAN License Servers	3-22
Configuring Redundant Servers	3-23
Setting up a Windows Client	3-28
Setting up a Linux or Solaris Client	3-29
Selecting a License Automatically	3-31
Troubleshooting	3-32

CHAPTER 1

Synopsys FPGA Licensing

Synopsys® has a number of different FPGA products with varying platform support. This chapter introduces the Synopsys FPGA licensing schemes and provides high-level flow diagrams that show you how to set up your license for individual tools.

- [Overview of License Configurations, on page 1-2](#)
- [Configuring Evaluation Licenses, on page 1-6](#)
- [Configuring Standard Product Licenses, on page 1-8](#)
- [Tool-Specific Licensing Flows, on page 1-10](#)

Overview of License Configurations

The following describe the kinds of licenses Synopsys offers for FPGA products, and the basic license configurations for the tools. The license configurations available vary with the tool and the platform; this information is summarized in [License Configuration Tables, on page 1-3](#).

Kinds of Licenses

There are two kinds of licenses:

Standard product licenses	This information is normally emailed to you. It is also printed on the Authorization Form included with your product shipment. You can have a node-locked or floating license, depending on the platform and the tool.
Evaluation licenses	An evaluation or trial license lets you evaluate Synopsys FPGA software for a limited period of time. You must request and download a trial license to run evaluation software. You can have a node-locked or floating license, depending on the platform and the tool.

Basic License Configurations

Synopsys allows the following FPGA license configurations, but availability varies with the type of license, the tool, and the platform. For complete details of the available configurations, see [License Configuration Tables, on page 1-3](#).

Synopsys FPGA tools use the following license configurations:

- Server-based node-locked

A node-locked license lets you run the Synopsys FPGA software on one specific machine. For this configuration, the node-locked license is managed by a license server. Node-locked licenses are enabled by an authorization code and a hardware security key or dongle. Evaluation node-locked licenses are based on either a MAC (Media Access Control) address or a host id. The MAC address is also known as the Ethernet or hardware address. See [Evaluation Node-locked Licenses, on page 1-4](#) and [Standard Node-locked Licenses, on page 1-5](#) for details of the configurations and security schemes available for different tools.

- Serverless node-locked

This is just like the server-based node-locked configuration, but the license is local and there is no license server. See [Evaluation Node-locked Licenses, on page 1-4](#) and [Standard Node-locked Licenses, on page 1-5](#) for details of the configurations and security schemes available for different tools.

- Floating

A floating license lets you run the Synopsys FPGA software on different supported machines on your network, and is server-based. Floating licenses are enabled by an authorization code, hardware security key, and a license server program (FLEXnet). Floating trial licenses do not require a hardware security key, but use a MAC address or host ID instead. See [Evaluation Floating Licenses, on page 1-5](#) and [Standard Floating Licenses, on page 1-6](#) for details of the configurations and security schemes available for different tools.

License Configuration Tables

Standard product licenses for all products on Windows and Linux are secured by a hardware security key (dongle). To optimize cost, speed, and ease-of-use, evaluation licenses are issued without new hardware dongles. On Solaris platforms, the license configurations for trial and standard product licenses are the same, and are tied to the `lmhostid`.

The following tables describe the available license configurations for different tools and platforms.

- [Evaluation Node-locked Licenses, on page 1-4](#)
- [Evaluation Floating Licenses, on page 1-5](#)
- [Standard Node-locked Licenses, on page 1-5](#)
- [Standard Floating Licenses, on page 1-6](#)

Evaluation Node-locked Licenses

The licenses are tied to a MAC address or an 8-digit host ID, which is based on a proprietary combination of machine attributes.

Tools	OS & Server Setup	License Configurations
Synplify® Synplify Pro®	Windows serverless	8-digit Host ID* Sentinel SuperPro Parallel Sentinel SuperPro USB
	Windows server-based	MAC address* Flex8 Parallel Flex9 USB
	Linux server-based**	MAC address* Sentinel SuperPro USB
Synplify® Premier	Windows server-based	MAC address* Flex8 Parallel Flex9 USB
Synplify® DSP	Windows serverless	MAC address* Flex8 Parallel Flex9 USB

* This is the default, unless you already have a dongle.

** This is only available on a limited basis.

Evaluation Floating Licenses

All floating licenses are server based.

Tools	OS & Server Setup	License Configurations
Synplify	Windows floating	MAC address*
Synplify Pro		Flex8 Parallel
Synplify Premier		Flex9 USB
Certify [®]	Solaris floating	lmhostid
Identify [®]	Linux floating**	MAC address*
Identify [®] Pro		Rainbow Sentinel SuperPro USB
Synplify DSP		

* This is the default, unless you already have a dongle.

** This is only available for more recent versions of the software.

Standard Node-locked Licenses

For security reasons, permanent node-locked licenses for all products on Windows and Linux require a hardware security key or dongle.

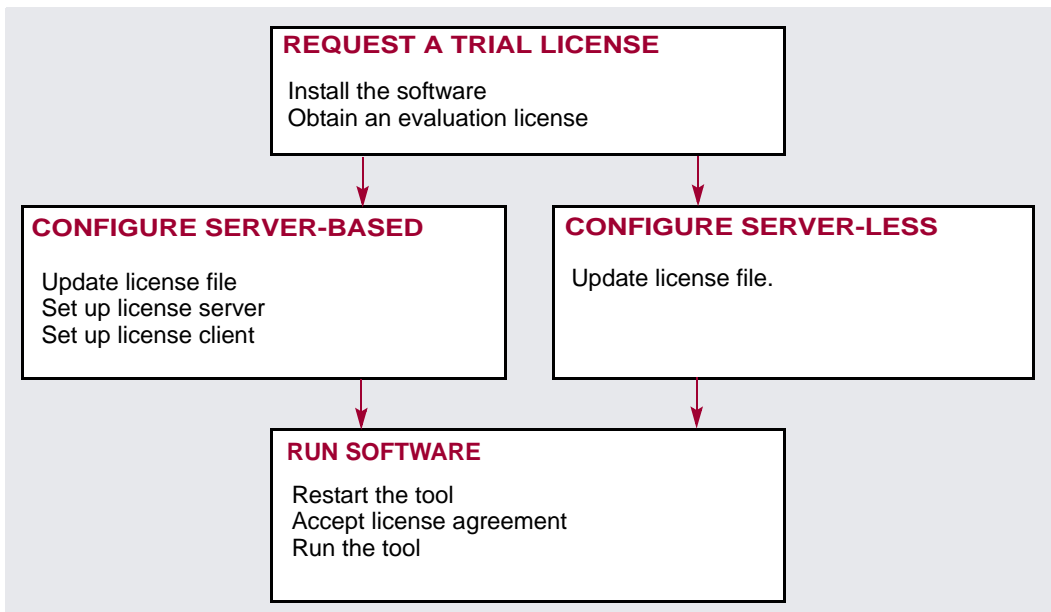
Tools	OS & Server Setup	License Configurations
Synplify Synplify Pro	Windows serverless	Sentinel SuperPro Parallel Sentinel SuperPro USB
	Windows server-based	Flex8 Parallel Flex9 USB
	Linux server-based	Sentinel SuperPro USB
Synplify Premier	Windows server-based	Flex8 Parallel Flex9 USB
Synplify DSP	Windows serverless	Flex8 Parallel Flex9 USB

Standard Floating Licenses

Tools	OS & Server Setup	License Configurations
Synplify, Synplify Pro Synplify Premier	Windows floating	Flex8 Parallel Flex9 USB
Certify Identify/Identify Pro	Solaris floating	Imhostid
Synplify DSP	Linux floating*	Sentinel SuperPro USB

* This is only available for more recent versions of the software.

Configuring Evaluation Licenses



The following procedure elaborates on the flow in the previous figure and shows you how to set up an evaluation or trial license. For details of the configurations available for the Synopsys FPGA tool you are evaluating, check [License Configuration Tables, on page 1-3](#).

1. Request a trial license.

- Install the software as described in [Chapter 2, Installation](#).
- Start the software. The License Request dialog box opens. Select To request a Trial License click here and fill in the details. Synopsys faxes or emails a trial license to you.
- Unless you already have a dongle, you will be asked for a host ID (Solaris) or MAC address. The server host ID is normally displayed at the top of the License Request dialog box when you request a trial license.
- On the RHEL 4 platform, if the License Request dialog box does not display, contact Synopsys and request a trial license (see [Contacting Synopsys for FPGA Products, on page 3-32](#)). Fax or email your name, address, and the host ID for the license server along with the request. If you do not already have the host ID, run the following command to get this information: `install_dir/linux/lmutil lmhostid`.
- Once you obtain the license information, cut and paste the information into the license file, as described in the next two steps.

2. If you get a serverless node-locked license, do the following:

- Open the `license.txt` file in the directory where you installed the Synopsys FPGA tool.
- Cut and paste, or manually copy the FEATURE line entry that was sent to you into the `license.txt` file.

3. If you get a server-based node-locked or floating trial license, do the following:

- Open the `license.txt` file on the server and update the FEATURE line as described in the previous step.
- Set up the license server to administer the license. See [Configuring Windows License Servers, on page 3-6](#), [Configuring Linux License Servers, on page 3-13](#), or [Configuring Solaris License Servers, on page 3-17](#), depending on the platform for your license server.

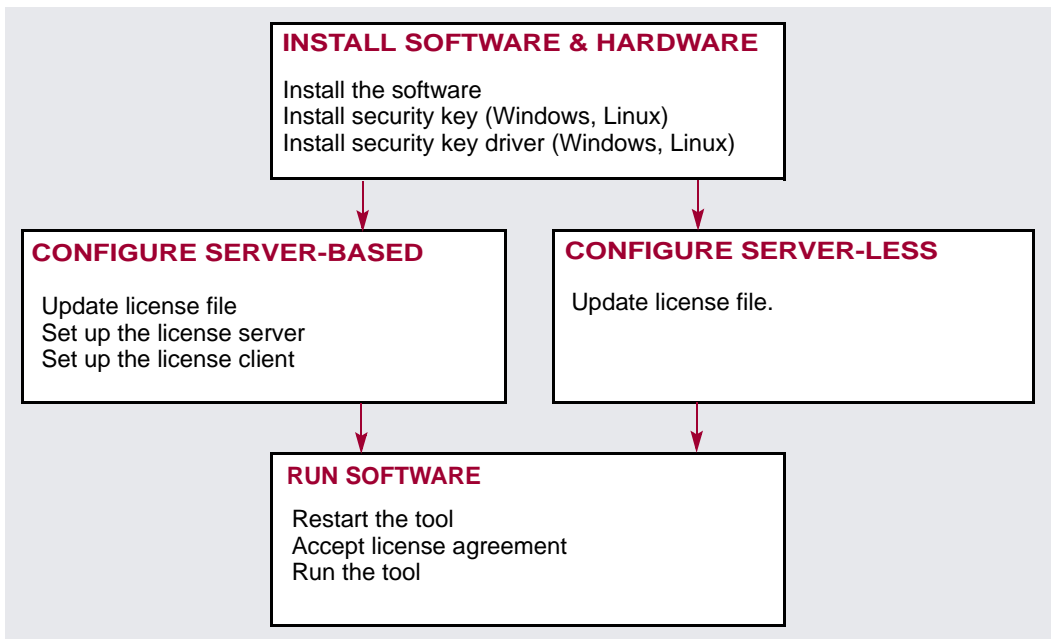
- Set up the license clients to check out licenses from the server as described in [Setting up a Windows Client, on page 3-28](#) or [Setting up a Linux or Solaris Client, on page 3-29](#), depending on the platform your license clients are using.

The procedures for setting up a floating evaluation license are the same as you would follow for a standard product license configuration.

4. Restart the software and accept the license agreement.

You can now begin your evaluation. You have access to a full-featured version of the tool for a prescribed time period.

Configuring Standard Product Licenses



This figure shows a generic flow diagram for setting up a standard product license. However, the available configurations and some specifics vary with the tool and the platform. For tool-specific flow diagrams, see the following:

- [Licensing for FPGA Synthesis Tools, on page 1-11](#) (Synplify, Synplify Pro, Synplify Premier, and Certify)
- [Licensing for Synplify DSP, on page 1-13](#)
- [Licensing for Identify Tools, on page 1-14](#)

The following procedure describes the steps shown in the figure in more detail:

1. Determine your license configuration. For details of the configurations available for your tool, check [License Configuration Tables, on page 1-3](#).

2. Install the software as described in [Chapter 2, Installation](#).

For tool-specific installation instructions, see the following:

- [Installing the Synthesis Tools, on page 2-2](#) (for Synplify, Synplify Pro, Synplify Premier, and Certify)
- [Installing the Synplify DSP Software, on page 2-6](#)
- [Installing the Identify/Identify Pro Software, on page 2-12](#)

3. If your authorization package includes it, install the dongle (parallel port or USB security key) that came with your software.

See [Installing Windows Security Keys, on page 2-15](#) or [Installing Linux Security Keys, on page 2-19](#), in accordance with your platform.

4. If your setup includes a dongle, install the corresponding driver for the hardware security key, as described below.

	Security Key	See...
Windows	Flex8 Parallel Flex9 USB	Installing the Windows FLEXid Driver, on page 2-17
	Sentinel SuperPro Parallel Sentinel SuperPro USB	Installing the Windows Safenet Sentinel Driver, on page 2-16
Linux	Sentinel SuperPro USB	Installing the Linux Sentinel USB Daemon, on page 2-19

5. For serverless node-locked installations, set up the license file.
 - Open the `license.txt` file in the directory where you installed the Synopsys FPGA tool.
 - Cut and paste, or manually copy the FEATURE line entry that was sent to you into the `license.txt` file.

You can now run the software.

6. For all server-based installations, set up the license server to administer the license.
 - Open the `license.txt` file on the server, and update the FEATURE line as described in the previous step.
 - Set up the license server to administer the license. See [Configuring Windows License Servers, on page 3-6](#), [Configuring Linux License Servers, on page 3-13](#), and [Configuring Solaris License Servers, on page 3-17](#) for platform-specific details.
7. For all server-based installations, set up the license clients to check out a license from the license server.

See [Setting up a Windows Client, on page 3-28](#) and [Setting up a Linux or Solaris Client, on page 3-29](#) for platform-specific details.

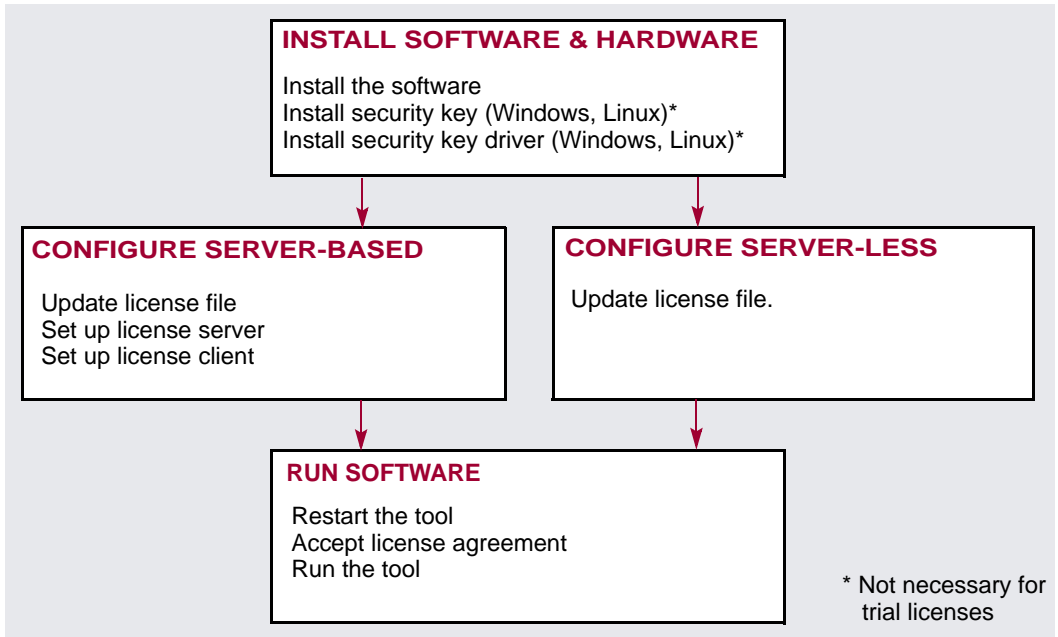
Tool-Specific Licensing Flows

The following describe how to set up licenses for individual tools:

- [Licensing for FPGA Synthesis Tools, on page 1-11](#)
- [Licensing for Synplify DSP, on page 1-13](#)
- [Licensing for Identify Tools, on page 1-14](#)

Licensing for FPGA Synthesis Tools

The following figure summarizes what you need to do to set up a license for the Synplify, Synplify Pro, Synplify Premier, or Certify tools. You might not need to install the security key and driver for an evaluation license.



Determine your configuration from the tables in [License Configuration Tables, on page 1-3](#), and then use the following table to find detailed information for the different steps shown in the preceding figure.

Install the software	Installing the Synthesis Tools, on page 2-2
Serverless node-locked	Configuring Serverless Node-Locked Licenses, on page 3-2
Server-based node-locked or floating	
Install hardware security key	Installing Windows Security Keys, on page 2-15 Installing Linux Security Keys, on page 2-19

Install driver for the hardware security key

[Installing the Windows Safenet Sentinel Driver, on page 2-16](#)
[Installing the Windows FLEXid Driver, on page 2-17](#)
[Installing the Linux Sentinel USB Daemon, on page 2-19](#)
[Installing the Linux FLEXid Daemon, on page 2-21](#)

Configure license server

[Configuring Windows License Servers, on page 3-6](#)
[Configuring Linux License Servers, on page 3-13](#)
[Configuring Solaris License Servers, on page 3-17](#)

Configure client (Windows or Linux)

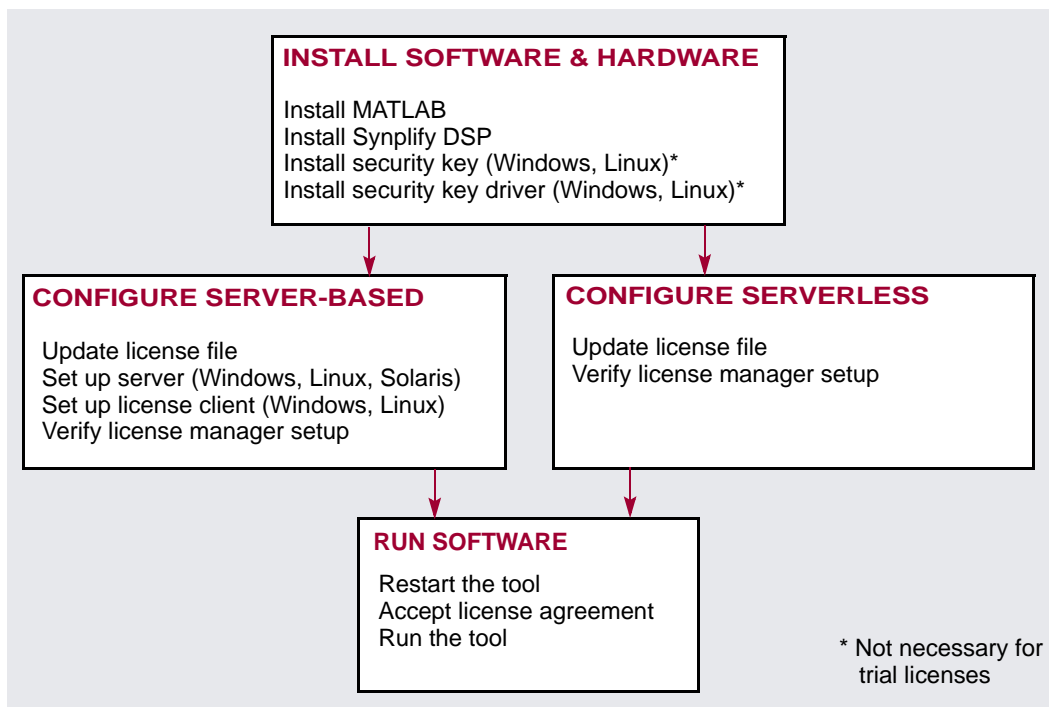
[Setting up a Windows Client, on page 3-28](#)
[Setting up a Linux or Solaris Client, on page 3-29](#)

Start License Manager daemon & verify

[Configuring Windows License Servers, on page 3-6](#)
[Configuring Linux License Servers, on page 3-13](#)
[Configuring Solaris License Servers, on page 3-17](#)

Licensing for Synplify DSP

The following figure summarizes what you need to do to set up a license for the Synplify DSP software. For an evaluation license, you might not need to install the security key and driver. See [License Configuration Tables](#), on page 1-3 for details about Synplify DSP licensing configurations.



The following table shows you where to find detailed information for the phases shown in the preceding figure.

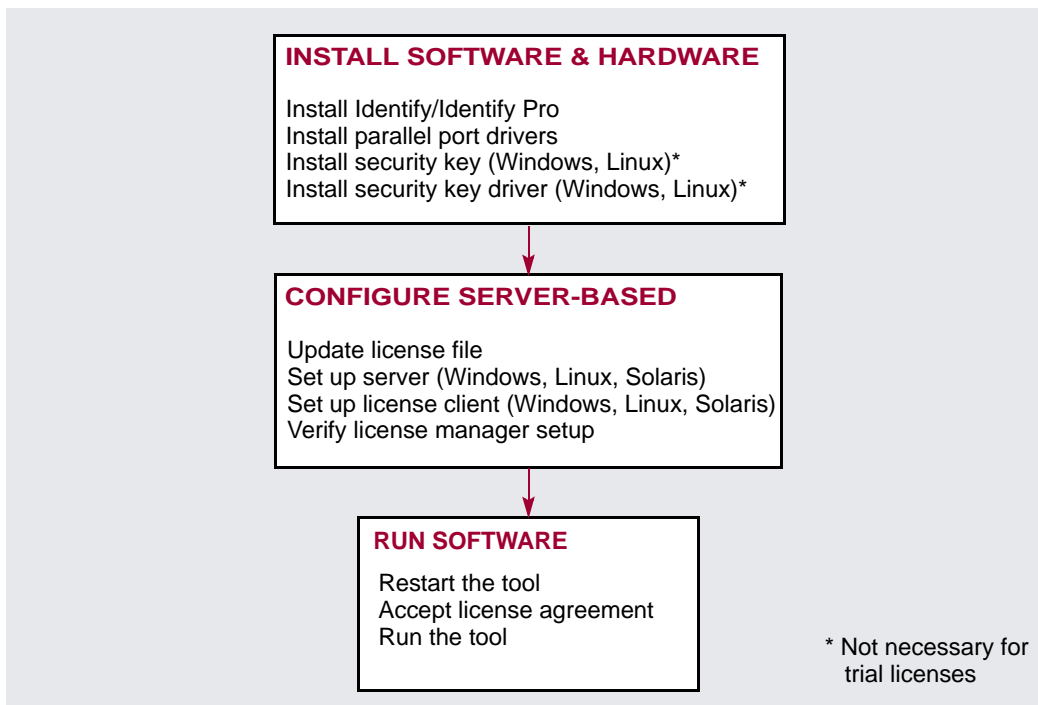
Install MATLAB	Installing the Synplify DSP Software, on page 2-6
Install Synplify DSP	
Serverless node-locked	Configuring Serverless Node-Locked Licenses, on page 3-2
Server-based node-locked or floating	
Install hardware security key	Installing Windows Security Keys, on page 2-15 Installing Linux Security Keys, on page 2-19

Install driver for the hardware security key	Installing the Windows Safenet Sentinel Driver, on page 2-16 Installing the Windows FLEXid Driver, on page 2-17 Installing the Linux Sentinel USB Daemon, on page 2-19 Installing the Linux FLEXid Daemon, on page 2-21
Configure license server	Configuring Windows License Servers, on page 3-6 Configuring Linux License Servers, on page 3-13 Configuring Solaris License Servers, on page 3-17
Configure client (Windows or Linux)	Setting up a Windows Client, on page 3-28 Setting up a Linux or Solaris Client, on page 3-29
Start License Manager daemon & verify	Configuring Windows License Servers, on page 3-6 Configuring Linux License Servers, on page 3-13 Configuring Solaris License Servers, on page 3-17

Licensing for Identify Tools

The following figure summarizes what you need to do to set up a standard product license for the Identify RTL Debugger and Identify Pro RTL Debugger tools. This figure is for a standalone installation of an Identify tool; if you are installing Identify as part of a Synplify, Synplify Pro, Synplify Premier, or Certify package, see [Licensing for FPGA Synthesis Tools, on page 1-11](#). Note that when installed as part of such a package, the Identify tools can be installed in a serverless configuration.

If you are setting up an evaluation license, you might not need to install the security key and driver. See [License Configuration Tables, on page 1-3](#) for details about licensing configurations for the Identify tools.



Install Identify/Identify Pro [Installing the Identify/Identify Pro Software, on page 2-12](#)

Install parallel port drivers [Installing the Windows Parallel Port Driver, on page 2-12](#)
[Installing the Linux Parallel Port Driver, on page 2-13](#)

Server-based node-locked or floating

Install hardware security key [Installing Windows Security Keys, on page 2-15](#)
[Installing Linux Security Keys, on page 2-19](#)

Install driver for the hardware security key [Installing the Windows Safenet Sentinel Driver, on page 2-16](#)
[Installing the Windows FLEXid Driver, on page 2-17](#)
[Installing the Linux Sentinel USB Daemon, on page 2-19](#)
[Installing the Linux FLEXid Daemon, on page 2-21](#)

Configure license server	Configuring Windows License Servers, on page 3-6 Configuring Linux License Servers, on page 3-13 Configuring Solaris License Servers, on page 3-17
Configure client (Windows or Linux)	Setting up a Windows Client, on page 3-28 Setting up a Linux or Solaris Client, on page 3-29
Start License Manager daemon & verify	Configuring Windows License Servers, on page 3-6 Configuring Linux License Servers, on page 3-13 Configuring Solaris License Servers, on page 3-17

CHAPTER 2

Installation

The following describe how to install the software and hardware security keys for licensing. Note that some tools have specific installation requirements.

- [Installing the Synthesis Tools, on page 2-2](#)
- [Installing the Synplify DSP Software, on page 2-6](#)
- [Installing the Identify/Identify Pro Software, on page 2-12](#)
- [Installing Windows Security Keys, on page 2-15](#)
- [Installing Linux Security Keys, on page 2-19](#)

Installing the Synthesis Tools

You can install the software by installing from a CD or downloading it from the Synopsys download website (www.solvnet.synopsys.com). See the following for information about installing the Synplify, Synplify Pro, Synplify Premier, and Certify tool suites:

- [Installing on a Windows Platform, on page 2-2](#)
- [Installing from a CD \(Solaris or Linux\), on page 2-3](#)
- [Downloading from the Synopsys Website \(Solaris/Linux\), on page 2-4](#)

For information about installing an Identify/Identify Pro or Synplify DSP tool, see the following:

- [Installing the Synplify DSP Software, on page 2-6](#)
- [Installing the Identify/Identify Pro Software, on page 2-12](#)

Installing on a Windows Platform

The following steps describe how to install and configure your Synopsys FPGA software on a Windows-based system.

1. To install the Synopsys FPGA software from a CD, insert the CD into your CD-ROM drive.

The installation starts automatically, and guides you through the installation process. If it does not start, double-click the following file from Windows Explorer:

```
<CD-ROM_drive>:\Setup.exe
```

2. To download the software from the web, go to the Synopsys download website (www.solvnet.synopsys.com) and download the software. Double-click the .exe file that you downloaded.

You are guided through the installation process.

3. If you want to set up your Windows system as a license server, check the FLEXnet license server for floating licenses option to install the license manager when it comes up during the installation process.

If you choose to set up your system as a license server, the script creates a c:\SynLM directory that includes a \driver subdirectory. Refer to [Configuring Windows License Servers, on page 3-6](#) for further information about setting up a Windows license server.

When installation is complete, the software creates a directory for the installed version of the tool or tool suite (for example, \fpga_c200903, \identify_c200903, etc.) in the directory specified for the installation. The default directory for installation is c:\program files\synplicity. The start menus, desktop icons, and uninstall names reflect the toolname and an associated version number, like Certify 9.2.

If you are not upgrading from a previous version of the License Manager for Synopsys FPGA tools, you can now set up the license manager and server as described in [Chapter 3, License Configuration](#). If you are upgrading, go to the next step.

4. If you are upgrading from a previous version of the License Manager for Synopsys FPGA tools, verify that the obsolete flexlm.cpl file has been removed.
 - Open the control panel (select Start->Settings->Control Panel) and check for the FLEXlm License Manager. This should have been removed automatically by the installation. If you find it, delete the obsolete file manually.
 - If it is present, delete the flexlm.cpl file from the c:\WINDOWS\SYSTEM32 directory and then close and reopen the Control Panel. If you cannot delete the flexlm.cpl file, reboot the system and delete the file before opening the Control Panel.

Starting and stopping the license server is now controlled by the LMTOOLS utility (c:\SynLM\LMTOOLS); see [Configuring Windows License Servers, on page 3-6](#).

You can now set up the license server as described in [Chapter 3, License Configuration](#).

Installing from a CD (Solaris or Linux)

To install your Synopsys FPGA software on a Solaris or Linux platform from CD-ROM, use the following procedure.

1. Insert the Synopsys FPGA CD into your CD-ROM drive. The CD automatically mounts to the CD-ROM mount point.
2. After the CD drive mounts (when the CD drive activity LED goes out), enter the appropriate commands to run the installation script from the CD.

```
Linux    % cd /mnt/cdrom/synplicity
          % ./linux/install.sh    (starts the installation script)
```

```
Solaris % cd /cdrom/synplicity/solaris
          % ./install.sh    (starts the installation script)
```

3. Follow the instructions in the installation script.

The installation script sets up the *toolname_version* directory in the location you specified. The *toolname* is a character string that identifies the Synopsys FPGA product or tool suite, and *version* is the software version of the product. For example, *fpga* is the toolname used for Synplify, Synplify Pro, and Synplify Premier, and *identify* is used for the Identify RTL Debugger. So the directory is named */fpga_c200903*, */identify_c200903*, etc. This directory is referred to as the *install_dir* in the remainder of this document.

For Solaris installations, the script also installs the platform-specific FLEXnet utilities in the *toolname_vesion/solaris* directory.

If you intend to set up your Linux machine as a license server, install the USB security key (dongle) and USB daemon, setup the license server, and start the license manager daemon as described in [Configuring Linux License Servers](#), on page 3-13.

Downloading from the Synopsys Website (Solaris/Linux)

You can use the following procedure to download either evaluation or standard software from the Synopsys download website.

1. Go to the Synopsys download website (<http://www.solvnet.synopsys.com>) and use the plat-form-specific command to extract the tar file you need.

In the following examples, replace *toolversion* with the combined tool name abbreviation or tool suite name and version string.

```
Solaris      % tar -xvf toolversion_solaris.tar
```

```
Linux        % tar -xvf toolversion_linux.tar
```

2. Go to the directory containing the extracted tar file:

```
% cd tar_directory
```

3. Run the platform-specific installation script:

```
Solaris      % ./solaris/install.sh
```

```
Linux        % ./linux/install.sh
```

4. Follow the instructions given in the installation script.

The installation script sets up the *toolname_version* directory in the location you specified. The *toolname* is a character string that identifies the Synopsys FPGA product, and *version* is the software version of the product. For example, *fpga* is the toolname used for Synplify, Synplify Pro, and Synplify Premier, and *identify* is used for the Identify RTL Debugger, and so the directory name is */fpga_c200903*, */identify_c200903*, etc. This directory is referred to as the *install_dir* in the remainder of this document.

For Solaris installations, the script also installs the platform-specific FLEXnet utilities in the *install_dir/solaris* directory.

After the software is installed, see [Setting up a Linux or Solaris Client, on page 3-29](#) for details. If you intend to set up your Solaris machine as a license server, see [Configuring Solaris License Servers, on page 3-17](#).

If you intend to set up your Linux machine as a license server, install the USB security key (dongle) and USB daemon, setup the license server, and start the license manager daemon as described in [Configuring Linux License Servers, on page 3-13](#).

Installing the Synplify DSP Software

The Synplify® DSP product works off a foundation made up of the MathWorks® MATLAB® (technical computing language) and Simulink® (model-based design) design tools. These applications must be installed before the Synplify DSP product. For a list of supported MathWorks versions, see the *Release Notes*.

Installation of the Synplify DSP software is a two-step process: you must first install Synplify DSP using the platform-specific installation instructions, and then ensure that it is installed in the MATLAB environment. The following procedures explain the details:

- [Installing Synplify DSP on a Windows Platform, on page 2-6](#)
- [Installing Synplify DSP on a Linux Platform, on page 2-8](#)
- [MathWorks Required Features, on page 2-11](#)

Installing Synplify DSP on a Windows Platform

The following procedure shows you how to install the Synplify DSP tool.

1. Make sure you have one of the supported versions of the MATLAB and Simulink® software from The MathWorks® installed:
 - For supported versions, check the release notes.
 - For a list of required MATLAB features that must be installed, see [MathWorks Required Features, on page 2-11](#).
2. Install the software.
 - Download the Synplify DSP tool from the location provided to you by Synopsys.
 - Double click the .exe file and follow the installation instructions.
 - If you want to set up your Windows system as a license server, check the FLEXnet license server for floating licenses option to install the license manager when it comes up during the installation process.

When you select this option, the installation script creates a c:\SynLM directory that includes a \driver subdirectory. Refer to [Configuring](#)

[Windows License Servers, on page 3-6](#) for further information about setting up a Windows license server.

3. Set up your license according to your configuration (see [License Configuration Tables, on page 1-3](#)). For details about license server and client setup, see [Chapter 3, License Configuration](#).

4. Start MATLAB. In MATLAB, change the working directory to C:\Program Files\Synplicity\Synplify_dsp_version\mathworks.

Note that if you had a previous version of the Synplify DSP software installed, you must start a new MATLAB session.

5. At the MATLAB command line prompt, type `setup` to execute the setup script (`setup.m` file) in the working directory. The installation confirms the locations with a popup window. Click OK to close the window.
6. Double check the installation by typing the following at the MATLAB command line:
 - Type `syndsproot`. The software echoes the path where the Synplify DSP software is installed.
 - Type `path`. The window shows the path where the MATLAB software is installed:
 - Check the version number by typing `syndspver`. You see information about the installed version of the Synplify DSP software.
7. Check that you have all the necessary MATLAB features installed by typing the following at the MATLAB prompt:

```
setup('check')
```

This command checks the platform and licenses for the MATLAB features required for Synplify DSP. It lists all the licenses it finds, and generates warnings for any missing licenses.

For a list of the required features, see [MathWorks Required Features, on page 2-11](#).

Installing Synplify DSP on a Linux Platform

You can use one of two procedures to install the software on a Linux platform, depending on whether you have write permission to the MATLAB installation. See the following:

- [Installing with Write Permissions to the MATLAB Installation, on page 2-8](#)
- [Installing Without Write Permissions to the MATLAB Installation, on page 2-9](#)

Installing with Write Permissions to the MATLAB Installation

Use this procedure when you have write permission to the MATLAB installation and you want to install Synplify DSP permanently into the MATLAB environment. If you do not have write permission, use the procedure described in [Installing Without Write Permissions to the MATLAB Installation, on page 2-9](#).

1. Make sure you have a supported version of the MATLAB and Simulink® software from The MathWorks® installed.
 - For supported versions, check the release notes.
 - For a list of required MATLAB features that must be installed, see [MathWorks Required Features, on page 2-11](#).
2. Install the Linux software.
 - Download the software from the Synopsys download website (<http://www.solvnet.synopsys.com>).
 - Extract the software using the tar command, where *toolversion* is the combined tool name abbreviation or tool suite name and version string. For example:

```
% tar -xvf toolversion_linux.tar
```
 - Run the installation script in the directory location containing the extracted files. For example:

```
% cd extract_directory
% ./linux/install.sh
```
3. Start MATLAB. In MATLAB, change the working directory to `<SynDSP_install>/mathworks`.

If you had a previous version of the Synplify DSP software installed, you must start a new MATLAB session.

4. Type `setup` to execute the setup script (`setup.m` file) in the working directory. Note that the setup script adds some paths to certain scripts in the MATLAB installation directory. If you do not have write permission to the MATLAB installation, refer to [Installing Without Write Permissions to the MATLAB Installation, on page 2-9](#) for information about manually adding the `addpath` commands.

The installation confirms the software location with a popup window.

5. Click OK to close the popup window.
6. Double check the installation by typing the following at the MATLAB command line:
 - Type `syndsproof`. The software echoes the path where the Synplify DSP software is installed.
 - Type `path`. The window shows the path where the MATLAB software is installed.
 - Check the version number by typing `syndspver`. You see information about the installed version of the Synplify DSP software.
7. Check that you have all the necessary MATLAB features installed by typing the following at the MATLAB prompt:

```
setup('check')
```

This command checks the platform and licenses for the MATLAB features required for Synplify DSP. It lists all the licenses it finds, and generates warnings for any missing licenses. For a list of the MATLAB features, see [MathWorks Required Features, on page 2-11](#).

Installing Without Write Permissions to the MATLAB Installation

Use this procedure to install Synplify DSP when you do not have write permission to the MATLAB installation. If you do have write permission, use the procedure described in [Installing with Write Permissions to the MATLAB Installation, on page 2-8](#).

1. Follow steps 1 and 2 from [Installing with Write Permissions to the MATLAB Installation, on page 2-8](#), but install the Synplify DSP software in a directory where you have write permission. This directory is now your `SynDSP_install` directory.

2. Start MATLAB.
3. To add Synplify DSP to the MATLAB environment, type the following commands at the command line or add them to a startup script file like `startup.m`. If you use a startup script, save it in the working directory.

```
addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP ' )
addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/
  MATLAB<number>/linux' )
addpath(' <SynDSP_Home>/mathworks/toolbox/Synplicity/SynDSP/
  demos' )
dspstartup
```

`<SynDSP_Home>` is the absolute path of the directory where you installed the Synplify DSP software.

`MATLAB<number>` is the MATLAB directory that matches the version of MATLAB you are running. For 2008A for example, this directory is `MATLAB76`.

Note the following:

- Directory order is important, so specify the commands in the order shown. If you do not specify them in this order, some Synplify DSP blocks are not initialized and will not simulate.
 - The `dspstartup` command is optional but often gives better simulation performance. It is a Simulink function that sets the simulation engine to an optimal configuration for discrete-time DSP systems.
4. Double check the installation by typing the following at the MATLAB command line:
 - Type `syndsroot`. The software echoes the path where the Synplify DSP software is installed.
 - Type `path`. The window shows the path where the MATLAB software is installed.
 - Check the version number by typing `syndspver`. You see information about the installed version of the Synplify DSP software.
 5. Check that you have all the necessary MATLAB features installed by typing the following at the MATLAB prompt:

```
setup('check')
```

This command checks the platform and licenses for the MATLAB features required for Synplify DSP. It lists all the licenses it finds, and

generates warnings for any missing licenses. For a list of the MATLAB features, see [MathWorks Required Features, on page 2-11](#).

MathWorks Required Features

Your MathWorks installation must include the following features for Synplify DSP to run correctly. Make sure you install all the toolboxes and features described below.

Feature	Description
MATLAB	This is the main MathWorks desktop, and has scripting capabilities for algorithm development and data analysis.
Simulink	Provides an interactive graphical environment and a customizable set of block libraries that together let you accurately design, simulate, implement, and test systems. It has a built-in notion of time (continuous and multi-rate discrete).
Fixed Point Toolbox	Provides fixed-point data types and arithmetic in MATLAB. Use it to develop algorithms for testing, modeling, and verifying your fixed-point implementations. It also includes an interface from Simulink Fixed Point to MATLAB Fixed Point workspace.
Simulink Fixed Point	Enables the fixed-point data type in Simulink. Use it to execute fixed-point simulation in Simulink, Stateflow, the Signal Processing Blockset, and the Video and Image Processing Blockset. It includes tools to identify overflow and saturation errors.
Signal Processing Toolbox	Lets you perform signal processing, analysis, and algorithm development. The Signal Processing Toolbox is a collection of industry-standard algorithms for analog and digital signal processing. It provides graphical user interfaces for interactive design and analysis and command-line functions for advanced algorithm development. It includes basic filter functionality (with FDATool).
Filter Design Toolbox	Lets you design, simulate, and analyze fixed-point, adaptive, and multirate digital filters. It extends the capabilities of the Signal Processing Toolbox with filter architectures and design methods, like adaptive and multirate filtering. When used with the Fixed-Point Toolbox, the Filter Design Toolbox provides functions that simplify the design of fixed-point filters and the analysis of quantization effects.
Signal Processing Blockset	Provides a foundation blockset for DSP simulation in Simulink. It extends Simulink functionality with efficient frame-based processing and blocks for signal processing systems.

Installing the Identify/Identify Pro Software

Use the following procedure to install the Identify or Identify Pro software.

1. To install the software, either download it from the Synopsys download website (<http://www.solvnet.synopsys.com>) or install it from the CD. For details, see the following platform-specific instructions:

Windows installations	Installing on a Windows Platform, on page 2-2
-----------------------	---

Linux/Solaris CD installation	Installing from a CD (Solaris or Linux), on page 2-3
-------------------------------	--

Linux/Solaris Web downloads	Downloading from the Synopsys Website (Solaris/Linux), on page 2-4
-----------------------------	--

2. Install the parallel port driver.

The parallel port driver is used to communicate with the hardware. You might already have the driver installed, depending on your vendor tools. The driver varies with the platform. See the following for more information:

Windows	Installing the Windows Parallel Port Driver, on page 2-12
---------	---

Linux	Installing the Linux Parallel Port Driver, on page 2-13
-------	---

Installing the Windows Parallel Port Driver

The Identify/Identify Pro RTL Debugger tool includes a current version of the WinDriver parallel port driver, which is required for Xilinx parallel-port communications and for the Altera ByteBlaster cable type with `jtagstyle=softjtag`. If you do not have the driver and attempt to connect to the target hardware, the Identify tool reports a Hardware driver failure error.

1. Check which version of WinDriver is installed:
 - Go to the `c:\WINNT\system32\drivers` directory, and check for the `windrvr6.sys` file. If it is there, you have WinDriver version 6.
 - If there is no `windrvr6.sys` file, right-click the `windrvr.sys` file, select Properties->Version and check the version number of this driver file. If it

is older than 5.05b, install the driver included with the Identify/Identify Pro software as outlined below.

You might already have the driver installed by the vendor tools, so you must check that you have the correct version. The Identify tool requires either of the following:

- The old WinDriver 5.05b or later
- The new WinDriver version 6 or later.

2. Make sure you are logged on as administrator to install a new driver.
3. Open a shell by doing one of the following:
 - Select Start Menu->Run. Enter cmd in the Open field and click OK.
 - Select Programs->Accessories->Command Prompt from the Start menu.
4. Go to the bin directory where you installed the Identify/Identify Pro RTL Debugger software, and run wdreg.exe.
5. Install the WinDriver kernel module on the target computer:

```
install_dir/bin/wdreg.exe -inf install_dir\bin\windrvr6.inf  
install
```

Note that you must enter the full path to the .inf file.

6. Reboot your system.

Installing the Linux Parallel Port Driver

The Identify/Identify Pro Debugger communicates with the hardware through the parallel port and uses parallel port drivers to access this port on a Linux system. The kind of driver used varies with the vendor tool.

- [Xilinx WinDriver, on page 2-13](#)
- [Altera Byteblaster Driver, on page 2-14](#)

Xilinx WinDriver

The Identify/Identify Pro Debugger uses the same windrvr6 driver used by the Xilinx iMPACT software programming tool. The driver should be installed with the vendor tools.

1. Check the parallel port driver installation by typing the following commands:

```
> ls /dev/windrvr6
/dev/windrvr6

> ls -l /lib/modules/
-rwxr-xr-x  1 0      0      149382  Feb 10 14:20 windrvr6.o
```

This sequence determines whether the driver is installed on your machine, whether you have the windrvr6 device file, and whether you have write permission for the file.

2. Check that the driver is loaded:

```
> /sbin/lsmmod | grep windrvr6
windrvr6          125536    0

> grep windrvr6 /proc/devices
254 windrvr6
```

If you do not have windrvr6 or if it is not loaded, this message is displayed when you attempt to use the Identify/Identify Pro Debugger:

```
Failed opening Driver device (WinDriver v6.03 Jungo (c) 1997 - 2003
Build Date: Apr 14 2007 X86)
```

If you receive this message, you must install a windrvr6 driver. For information on installing and configuring a Xilinx windrvr6 driver, see the Xilinx website using these keywords: impact and linux and driver.

Altera Byteblaster Driver

The Identify/Identify Pro Debugger uses the same byteblaster driver used by the Quartus® II design software. To debug Altera FPGAs through the JTAG server on Linux, Quartus 2.4 and the Altera Byteblaster driver must be installed on the Linux host.

1. To use Quartus and the byteblaster driver with the Identify/Identify Pro RTL Debugger, set the LD_LIBRARY_PATH and PATH variables to \$QUARTUS_ROOTDIR/linux:

```
> echo $QUARTUS_ROOTDIR
install_dir/quartus_ii_40

> csh

% source $QUARTUS_ROOTDIR/adm/qenv.csh
```

```
% echo $LD_LIBRARY_PATH | grep $QUARTUS_ROOTDIR/linux  
...:install_dir/quartus_ii_40/linux: ...  
  
% echo $PATH | grep $QUARTUS_ROOTDIR/linux  
...:<install_dir/quartus_ii_40/linux: ...
```

2. If you cannot program the FPGA from the Quartus programmer or if you see a message like the following when you try to use the Identify/Identify Pro Debugger, see the Altera website for installation information on Quartus and the byteblaster driver.

```
Cannot load libsld_hapi.so. Is Altera Quartus-II 2.0 or later  
installed on this system?
```

Installing Windows Security Keys

Windows-based Synopsys FPGA products use a parallel port or USB security key (dongle) as part of their software licensing mechanism. You need to install a security key for both node-locked and floating licenses, but the key is not required for a temporary evaluation license.

Installing a Windows Security Key

1. Locate an available parallel port or USB connector on your computer.

For Windows Vista systems, you can only use a USB dongle, not a parallel port dongle.

- If the parallel port is in use, temporarily disconnect the device; you will reconnect the device to the security key's external connector after you have installed the key.
- If a USB security key is connected, disconnect the key before proceeding.

For server-based installations, install the security key on the server machine. For serverless node-locked installations, install the security key on the single computer in your configuration.

2. Install the Sentinel or FLEXid security driver for the security key/license application that you are using.

License	Security Key (dongle)	Install Driver
Node-locked	Sentinel Parallel (beige)	Safenet Sentinel driver 7.4.0 (Sentinel Protection Installer 7.4.0.exe). See Installing the Windows Safenet Sentinel Driver , on page 2-16.
	Sentinel USB (purple)	Safenet Sentinel driver 7.4.0 (Sentinel Protection Installer 7.4.0.exe). See Installing the Windows Safenet Sentinel Driver , on page 2-16.
Floating (server)	FLEXid 8 Parallel (black)	Acresso Software FLEXid driver (FLEXid_Dongle_Driver_Installer.exe). See Installing the FLEXid Parallel Port Driver , on page 2-18.
	FLEXid 9 USB (green)	Aladdin HASP4 driver (HASPUserSetup.exe). See Installing the FLEXid USB Port Driver , on page 2-18.

- Securely attach the security key to the parallel port connector or insert the security key into the USB connector.
- Reconnect any device that you disconnected in step 1 to the security key's external parallel connector.

Installing the Windows Safenet Sentinel Driver

The Safenet Sentinel driver is used with node-locked licenses for USB and parallel port dongle configurations. The recommended version of the Safenet Sentinel driver is 7.4.0 or later (the Sentinel driver currently included with the Synopsys FPGA tools is 7.4.0).

The Safenet Sentinel driver is installed or updated with the Sentinel Protection Installer. When you install the Synopsys FPGA software, the tool puts the Sentinel Protection Installer executable in the \sentinel subdirectory of the installation directory (default location c:\Program Files\Synplicity).



Parallel Port Dongle



USB Port Dongle

To manually install a new, 7.4.0 Sentinel driver or update an existing Sentinel driver to 7.4.0, follow the instructions below.

1. Make sure you have administrator privileges before you install the driver.
2. Go to the `\sentinel` subdirectory and double click Sentinel Protection Installer 7.4.0.exe to start the install shield wizard.

The wizard automatically detects previous versions. When you run Sentinel Protection Installer 7.4.0, you are asked to confirm the installation for both new installs and upgrades.

3. Confirm the installation and follow the instructions on the screen to install the driver.
4. If you are installing on Windows XP SP2 or later and a firewall is detected, you are asked if the firewall settings can be modified; respond Yes.

You can now re-attach the hardware security key, as described in [Installing a Windows Security Key, on page 2-15](#).

Installing the Windows FLEXid Driver

The FLEXid drivers are used exclusively with the FLEXid keys for floating licenses. When you install the Synopsys FPGA software, the FLEXid driver files are located in the `C:\SynLM\driver` directory. Two security key drivers are included; a Acresto Software FLEXid driver for parallel port dongle installations (FLEXidInstaller.exe) and an Aladdin HASP4 driver for USB port dongle installations (hdd32.exe).



Parallel Port Dongle



USB Port Dongle

Installing the FLEXid Parallel Port Driver

To install or update the parallel port dongle driver, use the following procedure.

1. Make sure you have administrator privileges.
2. If you are updating the dongle driver, remove any previous installations of GLOBETrotter FLEXid Drivers or Macrovision FLEXid Drivers using Add or Remove Programs.
3. Go to the C:\SynLM\driver directory and double click FLEXidInstaller.exe to start the install shield wizard for installation.
4. Follow the instructions on the screen. In the Select Features InstallShield Wizard window, select the FLEXid driver as your security key. The FLEXid-8 parallel port dongle is black with FLEX=8-5xxxxxxxx ID printed on the key.
5. The driver is ready after you reboot your system (the installation will ask if you want to reboot your system; respond Yes).

You can now re-attach the hardware security key, as described in [Installing a Windows Security Key, on page 2-15](#).

Installing the FLEXid USB Port Driver

To install or update the USB port dongle driver, do the following:

1. Go to the C:\SynLM\driver directory and double click hdd32.exe to start the install shield wizard.

2. Follow the instructions on the screen.
3. The driver is ready after you reboot your system (the installation will ask if you want to reboot your system; respond Yes).

You can now re-attach the hardware security key, as described in [Installing a Windows Security Key, on page 2-15](#).

Installing Linux Security Keys

Linux-based servers use a USB security key as part of their software licensing mechanism. The security key (dongle) ID is used to create the license file. Two USB security keys are supported:

- Sentinel key (purple dongle)
See [Installing the Linux Sentinel USB Daemon, on page 2-19](#).
- FLEXid key (green dongle)
See [Installing the Linux FLEXid Daemon, on page 2-21](#).

Installing the Linux Sentinel USB Daemon

To install the USB daemon (`usbdaemon`) which is used with the Sentinel USB security key (purple dongle), you need an rpm that is included in the Synopsys FPGA software installation. After installation, the rpm is placed in the `install_directory/linux/sentinel` directory. Follow this procedure to install the USB daemon.

1. Login in as `root` (you must have administrator privileges to run the rpm).
2. Locate an available USB port on your computer. If a USB security key is currently connected, disconnect that key before proceeding.
3. Insert the USB security key (purple dongle) into the USB port.



4. Change to the *install_directory/linux/sentinel* subdirectory and type the following to run the rpm:

```
rpm -i --force --nodeps sntl-sud-7.3.0-0.i386.rpm
```

5. Log off as root.

The USB daemon starts automatically when you reboot the server. The rpm installs the `load_daemon.sh` utility in `/opt/safenet_sentinel/common_files/sentinel_usb_daemon`. See [Commands for the `load_daemon.sh` Utility](#), on page 2-20 for commands to run the utility manually.

6. If you are using the USB daemon in a server-based, node-locked configuration, you must configure the daemon for backwards compatibility as outlined below:

- Log in as root.
- Change to the `/opt/safenet_sentinel/common_files/sentinel_usb_daemon` directory and type this command:

```
% load_daemon.sh support
```

- Verify that an `/opt/RainbowTechnologies` directory was created.
- Log off as root.

Commands for the `load_daemon.sh` Utility

You can use the following `load_daemon.sh` commands to manually start, stop, and monitor the daemon. You must be logged in as `root` to use the utility to stop or start the USB daemon.

```
load_daemon.sh start    Starts the USB daemon
```

<code>load_daemon.sh stop</code>	Stops the USB daemon
<code>load_daemon.sh restart</code>	Restarts the USB daemon (use instead of a stop-start sequence)
<code>load_daemon.sh status</code>	Reports the status of the USB daemon: running or stopped

Installing the Linux FLEXid Daemon

To install the USB daemon, which is used with the FLEXid USB security key (green dongle), use the `HDD_Linux_dinst` command, as described below.

1. Login in as root (you must have administrator privileges).
2. Locate an available USB port on your computer. If a USB security key is currently connected, disconnect that key before proceeding.
3. Insert the USB security key (green dongle) into the USB port.



4. Enter the following command to determine if the USB port is mounted:

```
mount -v | grep usb
```

 - If the USB port is mounted, the command returns the mount location. For example:

```
usbfs on /proc/bus/usb type usbfs (rw)
```
 - If the USB port is not mounted, use this command to mount the port:

```
mount -t usbdevfs none /proc/bus/usb
```
5. Enter the following command to start the daemon:

```
dinst install_directory/linux/flexid/HDD_Linux_dinst
```

The `dinst` command is not a Linux command. The command is located in the `/install_path/linux/flexid` directory, and you must run it from there.

A series of messages is displayed to indicate that the AKSUSB daemon is running.

The USB daemon starts automatically whenever the server is rebooted.

6. If the daemon does not start, use one of the rpms included in the flexid subdirectory as outlined below:

- Mount the USB files with the following command:

```
mount -t usbfs none /proc/bus/usb
```

- Change to the *install_directory/linux/flexid* subdirectory and type the appropriate command for the rpm:

```
Red Hat    rpm -i HDD_RPM_RedHat_i386/aksusbd-redhat-1.8.1-3.i386.rpm
```

```
SuSE      rpm -i HDD_RPM_SuSE_i386/aksusbd-suse-1.8.1-3.i386.rpm
```

- Log off as root.
- To verify that the daemon is up and running, use the following `lmutil` command option:

```
% install_directory/linux/lmutil lmhostid -flexid
```

If the FLEXid key is reported as shown in the following line, the USB daemon is running.

```
The FLEXlm host ID of this machine is "FLEXID=9-xxxxxxx"
```

CHAPTER 3

License Configuration

Synopsys offers serverless node-locked, server-based node-locked, and server-based floating license configurations. For information about configurations available for your Synopsys FPGA tool, refer to [Chapter 1, *Synopsys FPGA Licensing*](#).

See the following for more information about the setup on different platforms.

- [Configuring Serverless Node-Locked Licenses, on page 3-2](#)
- [Configuring Server-Based Node-Locked Licenses, on page 3-4](#)
- [Configuring Windows License Servers, on page 3-6](#)
- [Configuring Linux License Servers, on page 3-13](#)
- [Configuring Solaris License Servers, on page 3-17](#)
- [Verifying the Identify License Manager, on page 3-20](#)
- [Other License Server Configurations, on page 3-22](#)
- [Setting up a Windows Client, on page 3-28](#)
- [Setting up a Linux or Solaris Client, on page 3-29](#)
- [Selecting a License Automatically, on page 3-31](#)
- [Troubleshooting, on page 3-32](#)

Configuring Serverless Node-Locked Licenses

Serverless node-locked license configurations are available for some tools on Windows platforms. See [License Configuration Tables, on page 1-3](#) for information about supported tool configurations.

The following procedure describes how to set up a Windows machine with a serverless node-locked license.

1. Install the software.

For information about installing your specific tool, see [Chapter 2, Installation](#).

2. If your software came with a hardware security key, install it. You do not need to do this step if you are setting up a trial license using a MAC address or proprietary ID.

- Disconnect any previously connected hardware security keys (dongle). This is described in [Installing a Windows Security Key, on page 2-15](#).
- Install the driver corresponding to your dongle, as described in [Installing the Windows Safenet Sentinel Driver, on page 2-16](#).
- Attach the dongle to the port, and reattach any other disconnected hardware.

Beige Sentinel dongle	Attach to parallel port
-----------------------	-------------------------

Purple Sentinel dongle	Attach to USB port
------------------------	--------------------

3. Update the license file.

- Locate your software license authorization. This is usually sent by email or fax and is also in the Software Authorization Form included with your product shipment. If you cannot locate this information, contact Synopsys (see [Contacting Synopsys for FPGA Products, on page 3-32](#)).
- Open the `license.txt` file. If you have an existing `license.txt` file, open that file. This file is in the directory where you installed the Synopsys FPGA tool.

-
- Cut and paste the FEATURE line entry that was emailed to you into the file. If you are using an existing file, append the new FEATURE information to the existing FEATURE information in the file.
 - If email is unavailable, type the FEATURE line information into the `license.txt` file from the Software License Authorization Form that was included with your product shipment or that was FAXed to you.
4. Set the `SYNPLCTYD_LICENSE_FILE` variable.
- Select Start->Settings->Control Panel->System.
 - Select the Advanced tab and click Environment Variables.
 - Set the `SYNPLCTYD_LICENSE_FILE` variable to point to the `license.txt` file. This is a typical user variable entry:

```
SYNPLCTYD_LICENSE_FILE C:\Program Files\Synplicity\license.txt
```
5. Start the tool.
- Restart the software.
 - Accept the license agreement. You can now begin using your Synopsys FPGA software.
 - Fill out the Software Registration Form that came with your customer shipment and return it to Synopsys.

Configuring Server-Based Node-Locked Licenses

Server-based node-locked license configurations are available for some tools on Windows and Linux platforms. See [License Configuration Tables, on page 1-3](#) for details. The following procedure describes how to set up a Windows or Linux machine with a server-based node-locked license.

1. Install the license manager software on the server.

Refer to the appropriate instructions, according to the kind of machine you are using:

Windows [Configuring Windows License Servers, on page 3-6.](#)

Linux [Configuring Linux License Servers, on page 3-13](#)

Solaris [Configuring Solaris License Servers, on page 3-17.](#)

2. Update the license file on the server.

See the platform-specific instructions listed above for details.

3. If your software came with a hardware security key, install it. You might not need to do this step if you are setting up a trial license.

- Disconnect the hardware security key (dongle). This is described in [Installing a Windows Security Key, on page 2-15](#) (Windows) and [Installing the Linux Sentinel USB Daemon, on page 2-19](#) (Linux).
- Install the corresponding driver for the dongle.

Windows Install the FLEXid driver as described in [Installing the Windows FLEXid Driver, on page 2-17.](#)

Linux Install the Sentinel USB driver as described in [Installing the Linux Sentinel USB Daemon, on page 2-19.](#)

- Attach the dongle to the port and reattach any hardware you disconnected earlier.

Windows	Beige Sentinel dongle	Attach to parallel port
Windows	Purple Sentinel dongle	Attach to USB port
Linux	Purple Sentinel dongle	Attach to USB port

4. Install the tool software on the client machine.

See [Chapter 2, *Installation*](#) for details.

5. Set the SYNPLCTYD_LICENSE_FILE variable to point to the `license.txt` file.

Windows Select Start->Settings->Control Panel->System. Select the Advanced tab and click Environment Variables. This is a typical user variable entry:
SYNPLCTYD_LICENSE_FILE C:\Program Files\Synplicity\license.txt

6. Start the tool.

- Restart the software.
- Accept the license agreement. You can now begin using your Synopsys FPGA software.
- Fill out the Software Registration Form that came with your customer shipment and return it to Synopsys.

Configuring Windows License Servers

You can use a Windows machine as a license server for server-based license installations. See the following for information about setting up Windows license servers:

- [Setting up a Windows License Server, on page 3-6](#)
- [Starting the License Daemon with LMTTOOLS, on page 3-8](#)
- [Configuring the Windows Firewall for Client Access, on page 3-10](#)

For supplemental information about setting up WAN license servers or redundant server configurations, see [Other License Server Configurations, on page 3-22](#).

Setting up a Windows License Server

This procedure shows you how to set up a Windows machine to manage server-based node-locked or floating licenses. The license clients can be Linux, Windows, or Solaris machines.

1. Install the software, making sure that you set up the machine as a license server. For tool-specific details about installation, see [Installing the Synthesis Tools, on page 2-2](#), [Installing the Synplify DSP Software, on page 2-6](#), or [Installing the Identify/Identify Pro Software, on page 2-12](#).
 - If you are setting up a Windows Vista machine as a license server, make sure to upgrade to version 10.8.5 or later of the FLEXnet License Manager software (lmgprd).
 - If you are installing Identify, check that you have version 10.8.2.1 or later of the license manager (see [Verifying the Identify License Manager, on page 3-20](#) for details.)
 - Install the software and select the FLEXnet license server for floating licenses option (Select Components menu) when it comes up during the installation process. This option installs the license manager and designates the machine as a license server. It also creates a c:\SynLM directory with the drivers for the security keys.)

- If you want this to be a standalone server with only the license manager software, disable the software tool box option during the installation process.
- Attach the FLEXid hardware security key to the parallel port or USB connector, as appropriate. See [Installing Windows Security Keys, on page 2-15](#).
- Install the FLEXid driver. See [Installing the Windows FLEXid Driver, on page 2-17](#).

2. Set up the license file.

- Go to the c:\SynLM directory and create a license.dat file.
- Locate your licensing information. For purchased licenses, use the dongle and license sent with the software. For evaluation licenses, obtain a license as described in [Configuring Evaluation Licenses, on page 1-6](#).
- Cut and paste the licensing information you received into the license.dat file.
- Edit the file and make the following changes:
 - Replace [server] with the name of the machine that will act as the server. Do not include the brackets.
 - Make sure that the path to the synplctyd license daemon (*path_to_synplctyd*) is correct. It should be C:\SynLM\synplctyd.exe.
 - Replace the TCP number at the end of the SERVER line with a port number that is not in use. If you are not sure of the port number, use the default value, which is usually 1709.

The following example shows an edited license file for a server named genie. The backslash at the end of some FEATURE lines is a line-continuation character which indicates that the entry is continued on a second line without a line break.

```
SERVER genie 000F250E0D6E TCP:1709
DAEMON synplctyd C:\SynLM\synplctyd.exe

FEATURE synplifydspd1 synplctyd 2005.120 15-apr-2005 1
BD60BB706517AEF78361\ NOTICE=CUSTID=N225903325646784 \
SIGN="0001 B095 BD0D C59C 5155 CE83 DBF3 6D0A 741F F0CA 8F33 F098 \
E040 0BB9 0054 E5BD 7E10 8F9E 5F9A 89E3 FE3F"
```

```
FEATURE synplifypro synplctyd 2005.120 15-apr-2005 1 \
9D202BC08BF2358EF64E VENDOR_STRING=fpga \
NOTICE=CUSTID=N225903326616299 SIGN="0045 616C 7343 4C8E 0B58 078F \
96D7 66AB 6E6F 6ADB E801 7C64 D7FA 0217 FCE1 3EE7 30F2 90D9 0D59 3FB0 24B2"

FEATURE synplifydsp synplctyd 2005.120 15-apr-2005 1\
4D206B804B05F48B3A8F NOTICE=CUSTID=N2259033212385636 \
SIGN="0246 01E8 CDF1 5F0D 1B22 FCDE A25D AE38 1B34 9B88 5703 A948 \
9E20 FDBE C5BE FB3D F1E4 160A 6DCD 93F6 8EBD"
```

3. If you are using Windows XP with the Service Pack 2 (SP2) or later as your floating license server, configure the firewall application as described in *Configuring the Windows Firewall for Client Access*, on page 3-10.
4. Make sure that the specified TCP port on the server is open, so that the synplctyd.exe program can communicate with the network.

You can now set up the license manager as described in *Starting the License Daemon with LMTOOLS*, on page 3-8.

Starting the License Daemon with LMTOOLS

After you have completed the procedure in *Setting up a Windows License Server*, on page 3-6 and set up the license file, you can start the license daemon and verify the configuration with the LMTOOLS utility.

1. Open the LMTOOLS utility by clicking on the lmtools.exe icon in the c:\SynLM directory.

The LMTOOLS dialog box opens to the first tab (Service/License File). Note that all tabs/settings are not required. For more detailed information, refer to the Acrecco Software website (<http://www.acresco.com>).

2. On the Service/License File tab, make sure that Configuration using Services is selected.
3. Select the Config Services tab and do the following:
 - Make sure that the paths to the following files are correct. Browse if needed. This table shows the default locations:

License Manager Daemon	c:\SynLM\lmgrd.exe
License File	c:\SynLM\license.dat
Debug Log File	c:\SynLM\debug.log

- If you are using an lmgrd executable (License Manager daemon) other than the one supplied in the SynLM directory, use the lmver option of the lmutil command to verify that you are using version 10.8.2.1 or later of the executable.

```
c:\SynLM\lmutil lmver path_to_exe\lmgrd.exe
```

An alternative way to check the version is to right-click the icon for the executable, select Properties, and then select the Version tab. If you have an older version of the executable, use the lmgrd.exe supplied in the SynLM directory.

- If you want the server to automatically start at power-up, check Use Services and then check Start Server at Power-Up.
4. Select the Start/Stop/Reread tab. If prompted to save the settings for the service, click Yes. Make sure that the correct license file appears in the status line at the bottom of the form and then click Start Server. The status line will display Server Start Successful.
 5. Select the Config Services tab again and do the following:
 - Click View Log to verify that the licensing information is correct and that the synplctyd license daemon is running.
 - Click Close Log to dismiss the log window.
 - Close LMTOOLS.
 6. Check license status by doing the following:
 - Open a command prompt and set the LM_LICENSE_FILE variable to point to the license file (or port number/host name string). Setting this variable at the command prompt is temporary and does not impact other programs that use the license manager software.

For example:

```
set LM_LICENSE_FILE=c:\SynLM\license.dat
```

- Change to the directory where you installed your Synopsys FPGA tool (for example, C:\Program Files\Synplicity\fpga_c200903) and type the following:

```
bin\lmutil lmstat -a | more
```

The status returned should confirm that the server is up and that licenses are available. For the licensing example above, it should confirm that genie is up, that the synpctyd license daemon is running, and that there are four licenses available.

You can now set up the client license on the same machine or a different one. See [Setting up a Windows Client, on page 3-28](#) or [Setting up a Linux or Solaris Client, on page 3-29](#) for details.

Configuring the Windows Firewall for Client Access

Windows XP Service Pack 2 (SP2) and later enhance the security capabilities of the Windows operating system. If you are using a Windows XP machine with an SP2 or later update as your floating license server, you must configure the XP firewall application to allow client access to the floating license ports.

The license manager daemon (lmgrd.exe) and the synpctyd license daemon are separate processes and each requires a separate port to run its associated driver. For floating licenses, you must define both a TCP variable for the license manager daemon and a PORT variable for the synpctyd license daemon. Once you have defined them, you add them to the list of exceptions in the firewall application.

Do the following:

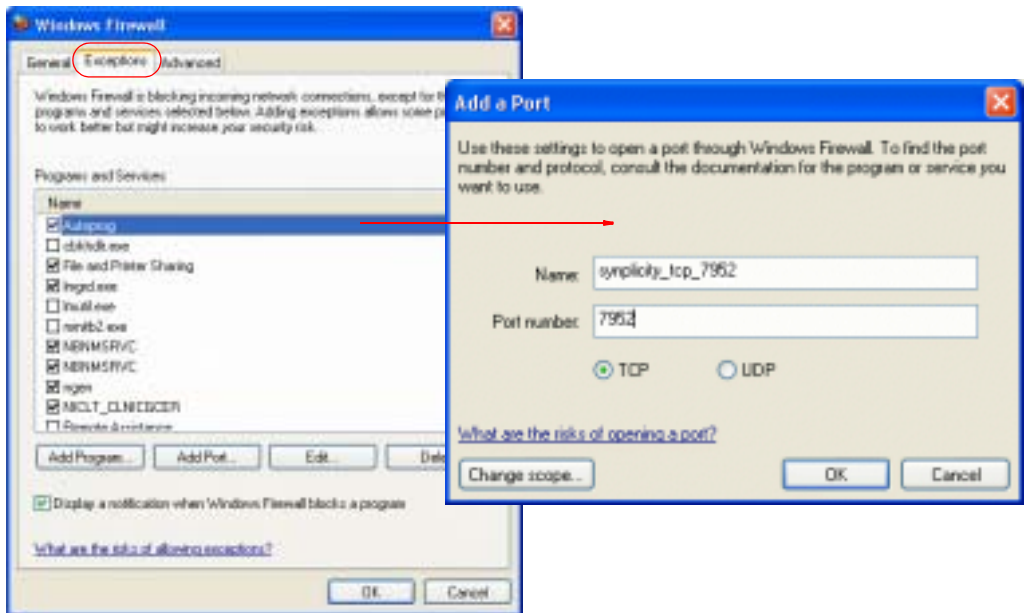
1. Open the license file and edit it to define the variables for the daemons:
 - Add a TCP port variable to the `SERVER` line for the license manager daemon `lmgrd.exe`.
 - Add a PORT variable to the `DAEMON` line for the `synpctyd` license manager daemon.

The following is an example:

```
SERVER <server_name> FLEXID=9-089Dxxxx TCP:7952
DAEMON synplctyd c:\synlm\synplctyd.exe PORT=7900
FEATURE synplify_asic_f synplctyd 2006.120 31-dec-2006 1 \
...
```

Next, you must add these values to the Exceptions list in the Windows Firewall application.

2. From the Control Panel, open the Windows Firewall application.
3. Click the Exceptions tab, and then click the Add Port button to display the Add a Port dialog box.



4. Add the TCP port for the license manager daemon by doing the following in the Add a Port dialog box:
 - In the Name field, specify a name for the TCP port. For example, `synplicity_tcp_7952`.
 - In the Port number field, enter the assigned TCP port value from the license file. Using the sample license file as an example, enter 7952.
 - Click OK in the Add a Port dialog box to accept the entry and close the dialog box.

5. Specify the port for the synplctyd license daemon as follows:
 - Click the Add Port button to redisplay the Add a Port dialog box, and then set the following options.
 - In the Name field, specify a name for the synplctyd license daemon port. For example, synplicity_port_7900.
 - In the Port number field, enter the assigned PORT value from the license file. Using the sample license file as an example, enter 7900.
 - Click OK in the Add a Port dialog box to accept the entry and close the dialog box.
6. Verify that the port names you assigned are included in the Programs and Services list of the Exceptions pane.
7. Click OK in the Windows Firewall dialog box to exit the Windows Firewall application.

Configuring Linux License Servers

Linux servers use a USB security key as part of the software licensing mechanism. Once you have installed the key and the corresponding driver, you can set up the Linux license server as described here:

- [Updating the License File for Linux Servers, on page 3-13](#)
- [Setting the LICENSE_FILE Environment Variable, on page 3-14](#)
- [Starting the License Manager Daemon on Linux Servers, on page 3-15](#)

When you use a Linux machine as your license server, note the following:

- Not all versions of the Synopsys FPGA tools are compatible with the Linux license server daemon. See the Synopsys web site for Synplicity products (http://www.synplicity.com/products/products_licensing.html) for compatibility information.
- For redundant server configurations, it is best not to combine Linux servers with other servers.

Updating the License File for Linux Servers

You can set up a Linux machine to manage server-based node-locked or floating licenses. The license clients can be Linux, Windows, or Solaris machines. The first step in configuring a Linux machine as a license server is to set up the license file.

1. Create a license file.
 - Create a license.dat file in any directory EXCEPT in the Synopsys FPGA software installation directory (*install_dir*). If you put your license file in this directory, the file will be overwritten by future installations and upgrades to the software.
 - Cut and paste the emailed licensing information or enter the information from the Authorization Form into the license.dat file.
2. Update the SERVER line in the license.dat file with the host name of your server.

The syntax of a SERVER line entry varies, depending on the dongle you are using:

```
SERVER host_name SKEY=dongle_id TCP:1709
```

```
SERVER host_name FLEXID=dongle_id TCP:1709
```

Replace *host_name* with the host name of your license server and verify that the dongle ID matches the serial number on the dongle.

- Update the DAEMON line in the license.dat file to the full path for the synplctyd license daemon.

- Go to this line:

```
DAEMON synplctyd
<path_to_synplcty>/synplcty/<platform>/synplctyd
```

- Change it to the following, making sure to replace *install_dir* with the full path to your installation directory:

```
DAEMON synplctyd install_dir/linux/synplctyd
```

Setting the LICENSE_FILE Environment Variable

After you have set up the license file, you must set up an environment variable to point to the local copy of the license.dat file. You do this for both Solaris and Linux license servers.

- Set the LM_LICENSE_FILE environment variable to point to the local copy of the license.dat file as described below:

```
From a C shell      % setenv LM_LICENSE_FILE path_to_license_file
```

```
From other shells: $ LM_LICENSE_FILE=path_to_license_file
                    $ export LM_LICENSE_FILE
```

- Verify the path to your license file by entering the following at the shell prompt:

```
% echo $LM_LICENSE_FILE
```

- To automatically read the license.dat file each time you log in, add an LM_LICENSE_FILE environment variable entry to your shell start-up script (.cshrc, .kshrc, or .profile file).

You can now start up the license manager daemon. See [Starting the License Manager Daemon on Linux Servers](#), on page 3-15 or [Starting the](#)

[Solaris License Manager Daemon](#), on page 3-18, depending on which platform you are using.

Starting the License Manager Daemon on Linux Servers

Once you have the license file and LM_LICENSE_FILE variable set up, you can start the license manager daemon on the server.

1. Make sure you are not logged in as root.

Do not run lmgrd as root because it is a security risk to run any program as root that does not require root permissions (lmgrd does not require root permission). Use `su` instead.

2. If you plan to use an lmgrd executable other than the one supplied in the linux directory, verify the version with the `lmutil lmver` command. If you are using Identify, verify that the license manager is version 10.8.2.1 or later.

License manager daemon (lmgrd)	<code>install_dir/linux/lmutil lmver path_to_executable/lmgrd</code> If the version is not 10.8.2.1 or later, use the lmgrd supplied in the linux directory.
---------------------------------------	---

License daemon (synplctyd)	<code>lmutil lmver synplctyd</code>
-----------------------------------	-------------------------------------

3. Start the server license daemon by entering the following command:

```
% install_directory/linux/lmgrd \  
-c $LM_LICENSE_FILE -l /usr/tmp/lmgrd_synplicity.log &
```

When you start the server license manager daemon (lmgrd), it automatically starts the synplctyd license daemon.

The `-l` switch specifies a destination for the FLEXnet log file, and the `-c` switch specifies that your license file will be used. The backslash at the end of the line (`\`) is a line continuation character. When you use a line continuation character, make sure that it is the last character on the line and that no spaces follow the backslash.

4. Use the following command to check that the synplctyd license daemon is running and that the correct number of licenses are available:

```
% install_directory/linux/lmutil lmstat -a
```

You should see a message like this, and no errors should be reported.

```
lmutil - Copyright (c) 1989-2008 Macrovision Europe Ltd. and/or
Macrovision Corporation. All Rights Reserved.
Flexible License Manager status on Wed 1/2/2008 14:06
License server status: port_number@host_name
License file(s) on servername: full_license_file_path
servername: license server UP (MASTER) v10.8
Vendor daemon status (on servername):
synplctyd: UP v10.8
Feature usage info:
Users of synplify: (Total of n licenses issued;
Total of n licenses in use)
```

5. If your Linux license server is serving Windows clients, configure the server license manager daemon to start each time you boot your system by editing the `/etc/rc.d/init.d` boot script, and including commands like the following:

```
/bin/su myacct -c 'echo starting lmgrd >
/<install_path>/linux/boot.log'

/bin/su myacct -c 'echo lmdiag >> /<install_path>/boot.log'

/bin/su myacct -c '/<install_path>/lmdiag -n -c\
/home/flexlm/v5.12/ent4/license.dat >> /<install_path>/boot.log'

/bin/su myacct -c 'echo exiting >> /<install_path>/boot.log'
```

When editing the script, note the following:

- Specify all paths in full, because no paths are assumed at boot time.
- Because no paths are assumed, either put the `synplctyd` daemon in the same directory as `lmgrd`, or edit all `VENDOR` lines in the license file to include the full path to the `synplctyd` daemon.
- Use the `su` command to run `lmgrd` as a non-root user (`myacct` in the previous command examples). Do not run `lmgrd` as root because it is a security risk to run any program as root that does not require root permissions (`lmgrd` does not require root permission).
- Make sure that all commands executed as `myacct` use `cs`h syntax, because `myacct` has a `cs`h login. All commands not executed as `myacct` must be in `/bin/sh` syntax, which is the syntax used by the boot scripts.
- Use `lmdiag` as a diagnostic tool to verify that the server is running and serving licenses.

- Editing the script does not start the daemon. The daemon only starts when you reboot your license server machine.
6. If you have difficulties installing or licensing your tool, refer to [Troubleshooting, on page 3-32](#).

Once you have set up your Linux license server, set up the clients, which can be Linux, Windows, or Solaris machines. See [Setting up a Windows Client, on page 3-28](#) or [Setting up a Linux or Solaris Client, on page 3-29](#) for details.

Configuring Solaris License Servers

You can set up a Solaris machine as a license server for floating licenses. Solaris servers use the machine host ID as part of the software licensing mechanism. For details about setting up a Solaris license server, see the following:

- [Updating the Solaris License Server File, on page 3-17](#)
- [Starting the Solaris License Manager Daemon, on page 3-18](#)

Updating the Solaris License Server File

The first step in configuring a Solaris machine as a license server is to set up the license file.

1. Create a license file.
 - Create a license.dat file in any directory EXCEPT in the Synopsys FPGA software installation directory (*/toolname_version*). If you put your license file in this directory, the file will be overwritten by future installations and upgrades to the software.
 - Cut and paste the emailed licensing information or enter the information from the Authorization Form into the license.dat file.
2. Update the SERVER line in the license.dat file with the host name of your server. The following is the syntax for a SERVER line entry:

```
SERVER host_name host_id TCP:1709
```

If you do not know this information, use the `hostname` and `lshostid` commands to find it.

3. Update the DAEMON entry in the `license.dat` file to the full path for the `synplctyd` license daemon.

– Go to this entry:

```
DAEMON synplctyd <path_to_synplcty>/synplcty/solaris/  
synplctyd
```

– Change the entry as follows, making sure to replace *full_path* and *toolname_version* with the full path to the directory, and the actual name of the tool directory, respectively.

```
DAEMON synplctyd /full_path/toolname_version/solaris/synplctyd
```

4. Set the `LM_LICENSE_FILE` environment variable to point to the local copy of the `license.dat` file, as described in [Setting the LICENSE_FILE Environment Variable](#), on page 3-14.

Starting the Solaris License Manager Daemon

Once you have the license file and `LM_LICENSE_FILE` variable set up, start the license manager daemon on the Solaris server. When you start the server license manager daemon (`lmgrd`), it automatically starts the `synplctyd` license daemon.

If you are using an Identify tool, verify the license manager version before setting up the daemon (see [Verifying the Identify License Manager](#), on page 3-20 for details).

1. Make sure you are not logged in as root.

Do not run `lmgrd` as root because it is a security risk to run any program as root that does not require root permissions (`lmgrd` does not require root permission). Use `su` instead.

2. If you plan to use an `lmgrd` executable other than the one supplied in the `linux` directory, verify the version with the `lmutil lmver` command. For example:

```
path/toolname_version/solaris/lmutil lmver path_to_executable/lmgrd
```

If the version is not 10.8.2.1 or later, use the `lmgrd` supplied in the `solaris` directory.

3. Start the server license daemon by entering the following command:

```
% synplicity_home/toolname_version/solaris/lmgrd \  
-c $LM_LICENSE_FILE -l /usr/tmp/lmgrd_synplicity.log &
```

The `-l` switch specifies a destination for the FLEXnet log file, and the `-c` switch specifies that your license file will be used. The backslash at the end of the line (`\`) is a line continuation character. When you use a line continuation character, make sure that it is the last character on the line and that no spaces follow the backslash.

4. Use the following command to check that the `synplctyd` license daemon is running and that the correct number of licenses are available:

```
% synplicity_home/toolname_version/solaris/lmutil lmstat -a
```

You should see a message like this, and no errors should be reported.

```
lmutil - Copyright (c) 1989-2008 Macrovision Europe Ltd. and/or  
Macrovision Corporation. All Rights Reserved.  
Flexible License Manager status on Wed 1/2/2008 14:06  
License server status: port_number@host_name  
License file(s) on servername: full_license_file_path  
servername: license server UP (MASTER) v10.8  
Vendor daemon status (on servername):  
synplctyd: UP v10.8  
Feature usage info:  
Users of toolname: (Total of n licenses issued;  
Total of n licenses in use)
```

5. If you have installation or licensing problems, refer to [Troubleshooting, on page 3-32](#).

Once you have set up your Solaris license server, set up the clients, which can be Linux, Windows, or Solaris machines. See [Setting up a Windows Client, on page 3-28](#) or [Setting up a Linux or Solaris Client, on page 3-29](#) for details.

Verifying the Identify License Manager

The Identify/Identify Pro RTL Debugger requires a floating license with version 10.8.2.1 or later of the license manager daemon. If you are using the Identify product, follow these steps to make sure you are using the correct version.

1. Check the version of the license manager daemon, using the following commands:

Windows Server	Linux/Solaris Server
<code>lmutil lmver synplctyd.exe*</code>	<code>lmutil lmver synplctyd*</code>
<code>lmutil lmver lmgrd.exe</code>	<code>lmutil lmver lmgrd</code>

* If you have a synd.exe daemon, you must upgrade to version 10.8.2.1

The Identify/Identify Pro RTL Debugger includes version 10.8.2.1 of the FLEXnet License Manager software for floating licenses. If you are upgrading from a previous Identify release, make sure that both the `lmgrd` and `synplctyd` license daemons are using the 10.8.2.1 (or greater) release version of the FLEXnet License Manager software.

If you have the correct version of the license manager daemon, proceed to setting up your license server ([Setting up a Windows License Server, on page 3-6](#), [Configuring Linux License Servers, on page 3-13](#), or [Configuring Solaris License Servers, on page 3-17](#)). If you need to upgrade the license manager, follow the next steps in this procedure

2. Bring down the license server.
 - Inform all users that you must bring the license server down to install the software and that they will be unable to run any of the tools that were managed by FLEXlm.
 - Depending on your platform, do the following to shut down the licensing daemon:

Windows Server

- Select Start->Settings->Control Panel.
- Click the FLEXlm License Manager icon to open the FLEXlm License Manager dialog box.
- Verify that Service Name is set to the server you want to shut down.
- Click Stop on the Control tab of the dialog box.

Linux/Solaris Server

Enter the following command:
`lmutil lmdown -c full_license_file_path`

3. Install the software and the new version of the floating license manager along with it.

Windows installations	Make sure to check the FLEXnet license server for floating licenses option when you install the software. See Installing on a Windows Platform, on page 2-2 for details.
Linux/Solaris CD installation	Follow the directions in Installing from a CD (Solaris or Linux), on page 2-3 , which installs the FLEXnet utilities.
Linux/Solaris Web downloads	Follow the directions in Downloading from the Synopsys Website (Solaris/Linux), on page 2-4 , which installs the FLEXnet utilities.

4. Start the license server.

See platform-specific instructions in [Starting the License Daemon with LMTTOOLS, on page 3-8](#), [Starting the License Manager Daemon on Linux Servers, on page 3-15](#), and [Starting the Solaris License Manager Daemon, on page 3-18](#).

5. Verify that the correct version of the synplctyd license daemon is running by entering the following lmutil commands:

```
lmutil lmver synplctyd
lmutil lmver lmgrd
```

The correct version for both daemons is 10.8.2.1 or later.

Other License Server Configurations

Synopsys FPGA licensing software allows some special license server configurations. For more information, see the following:

- [Configuring WAN License Servers, on page 3-22](#)
- [Configuring Redundant Servers, on page 3-23](#)

Configuring WAN License Servers

WAN (wide area network) license servers allow clients that are geographically distant from the server site to obtain a floating license. You set up WAN license servers as follows:

1. Make sure of the following prerequisites:
 - The WAN license servers must have version 10.8 or greater of the vendor license daemon.

If you are setting up a WAN server in an existing server environment, the license daemon may not be correct. If a client receives a message like the following after starting a Synopsys FPGA application, it means that the license daemon is old and must be updated as described in the in the release notes for your Synopsys FPGA product.

Your license server is using a previous version of the Synplicity Vendor License Daemon. Please upgrade your server to version 10.8 of the Vendor License Daemon

- Check that the local time and time zone are set correctly on the server and all clients.
2. For each remote client, set up a normal FEATURE license and a special WAN license.

The WAN license file includes a second FEATURE entry for the WAN information as shown in the following example.

```

SERVER [server] 81234567 TCP:1709
DAEMON synplctyd <path_to_Synplicity_license_daemon>
FEATURE synplifypro synplctyd 2007.120 31-dec-2007 4 \
    5C3C7356C7C72646D7FD VENDOR_STRING=fpga \
    NOTICE=CUSTID=N6894439615259781 SIGN="0003 0604 7957 FF5E \
    2890 1304 D650 B3CB 464F 3D6A 1E02 7B07 4515 2CCE BDF0 1F70 \
    52F8 CFBF 6AE7 381B 0D8A"
FEATURE wanr_synplifypro_nam synplctyd 2007.120 31-dec-2007 2 \
    CCBC43A6921BCACA013D NOTICE=CUSTID=N427694709467342 \
    SIGN="0321 6342 7C54 BF60 64F6 7CBF 5E6C 2D00 FB7B 6582 \
    2A03 2C94 2AFD F5B0 0F18 9F39 7669 D5BF 4912 4D76 9DF2"

```

Configuring Redundant Servers

Three license servers can be configured to provide continuous software licensing as long as any two of the servers are operational. You can use any combination of servers, but it is recommended that you do not mix Linux servers with other servers. Either use all Linux servers or no Linux servers.

In a redundant configuration, each server has a copy of the license file and each server runs the FLEXnet and Synopsys FPGA product license daemons (lmgrd and synplctyd). There are three steps to setting up a triply redundant configuration; they are described below:

- [Setting up the License File for Redundant Servers, on page 3-23](#)
- [Starting lmgrd on Redundant Servers, on page 3-25](#)
- [Setting up Clients for Redundant Servers, on page 3-27](#)

Setting up the License File for Redundant Servers

1. To set up this configuration, open the license file, `license.dat`. The following is an example.

```

SERVER [server] FLEXID=8-5E70005F6D17 TCP:1709
SERVER [server] FLEXID=8-5E70004E63A2 TCP:1709
SERVER [server] FLEXID=8-5E70005C33C1 TCP:1709
DAEMON synplctyd <path_to_Synplicity_license_daemon>
FEATURE synplify_f synplctyd 2007.010 31-dec-2007 8 \
    8CFA604A6D0FB7AF2B1C VENDOR_STRING=fpga,analyst \
    NOTICE=CUSTID=N6894439615259781 SIGN="0003 0604 7957 FF5E \
    2890 1304 D650 B3CB 464F 3D6A 1E02 7B07 4515 2CCE BDF0 1F70 \
    52F8 CFBF 6AE7 381B 0D8A"

```

2. Edit the file as follows

- Replace [server] with the host names of the machines that will act as the license servers. Do not include the brackets in the entries.
- Replace *path_to_Synplicity_license_daemon* with the full path to the synplctyd license daemon. On a Windows machine, the default path to the license daemon is c:\SynLM\synplctyd.exe. On Solaris/Linux machines, this path includes a directory for the platform: solaris or linux.
- Replace TCP number with a port number that is not in use.

The following example shows an edited license file for a redundant-server configuration on a Windows machine:

```
SERVER larissa FLEXID=8-5E70005F6D17 TCP:1800
SERVER nereid FLEXID=8-5E70004E63A2 TCP:1800
SERVER lysithea FLEXID=8-5E70005C33C1 TCP:1800
DAEMON synplctyd c:\synlm\synplctyd.exe
FEATURE synplify_f synplctyd 2007.010 31-dec-2007 8 \
    8CFA604A6D0FB7AF2B1C VENDOR_STRING=fpga,analyst \
    NOTICE=CUSTID=N6894439615259781 SIGN="0003 0604 7957 FF5E \
    2890 1304 D650 B3CB 464F 3D6A 1E02 7B07 4515 2CCE BDF0 1F70 \
    52F8 CFBF 6AE7 381B 0D8A"
```

The following shows an edited license file for a redundant-server configuration on a Linux machine:

```
SERVER larissa SKEY=328F TCP:1800
SERVER nereid 79010a00 TCP:1800
SERVER lysithea 574f8a0c TCP:1800
DAEMON synplctyd /home/license_90/linux/synplctyd
FEATURE synplify_f synplctyd 2005.010 31-dec-2006 8 \
    3D52B18456E1CA4C295D VENDOR_STRING=fpga \
    NOTICE=CUSTID=N638687136754479 SIGN="0271 8177 E262 2FD0 7D44 \
    BDDE BC46 733B 93DA EE52 1E00 6E55 72BA 29EF 9E09 0396 50A8 \
    6E44 4EB5 C9BF B537"
```

The following shows an edited license file for a redundant-server configuration on a Solaris machine:

```
SERVER larissa 875712ec TCP:1800
SERVER nereid 79010a00 TCP:1800
SERVER lysisithea 574f8a0c TCP:1800
DAEMON synplctyd /home/fpga_90/solaris/synplctyd
FEATURE synplifypro synplctyd 2004.120 31-dec-2007 4 \
    5C3C7356C7C72646D7FD VENDOR_STRING=fpga \
    NOTICE=CUSTID=N6894439615259781 SIGN="0003 0604 7957 FF5E \
    28A0 1304 D650 B3CB 464F 3D6A 1E02 7B07 4515 2CCE BDF0 1F70 \
    52F8 CFBF 6AE7 381B 0D8A"
```

3. Copy the edited file to each of the license servers. If all the servers are not on the same platform, edit the `DAEMON` entry for each different machine to point to the correct `synplctyd` license daemon.
4. On each server, set the `SYNPLCTYD_LICENSE_FILE` environment variable to point to the local copy of the `license.dat` file.
 - On a Windows machine, select Start->Settings->Control Panel->System and set `SYNPLCTYD_LICENSE_FILE` on the corresponding Variables tab to the location of the `license.dat` file (`c:\SynLM\license.dat`).
 - On a Solaris/Linux server, enter the following command:

```
setenv SYNPLCTYD_LICENSE_FILE /path_to_license_file/license.dat
```

Starting Imgrd on Redundant Servers

After you have set up the license file as described in [Setting up the License File for Redundant Servers](#), on page 3-23, set up the license server daemon, `Imgrd`.

1. Start the `Imgrd` license server daemon on the first machine.

Depending on the platform, the procedure varies slightly.

Windows Use the LMTOOLS utility, as described in [Starting the License Daemon with LMTOOLS](#), on page 3-8.

Solaris • Change to the platform directory containing the lmgrd executable.
Linux • Type this command, and specify a directory for a log file to keep track of license usage and for troubleshooting:

```
lmgrd -c $SYNPLCTYD_LICENSE_FILE -l  
/usr/tmp/lmgrd_synplify.log &
```

This command specifies /usr/tmp/lmgrd_synplify.log as the log file.

2. Run a status check on the license file to confirm that it started the first server.

On a Windows machine, do the following:

- Open a command prompt and change to the directory where you installed your Synopsys FPGA tool (for example, C:\Program Files\Synplicity\fpga_c200903).
- Type the following at the command prompt:

```
bin\lmutil lmstat -a | more
```

On a Solaris/Linux machine, do the following:

- Use which lmutil to determine which lmutil is being used. If the local lmutil is not being used, add ./ to the beginning of the command.
- Enter the command:

```
lmutil lmstat -a
```

The status returned should report that the first server is up, that the synpctyd daemon is running, and how many licenses are available.

3. Repeat the previous two steps (start up and status check) on each of the other servers.

As you do this and check the status, the number of servers reported as up and running reflects the number of servers you have set up.

Note that you must start the FLEXnet license daemon (lmgrd) on each individual server. There is a 10-minute timeout for starting the license daemon on each server. If you cannot start the license daemon on each

server within this time limit, you must restart the daemon on the server that has timed out.

Setting up Clients for Redundant Servers

On each client, set up an environment variable to check out a license from any one of the three servers.

1. Obtain the port number and name of each of the three license servers from your administrator.
2. For a Windows client, specify a comma-separated *portnumber @servername* value for each of the three servers.

For example:

```
Variable: SYNPLCTYD_LICENSE_FILE  
Value: 1800@larissa,1800@nereid,1800@lysithea
```

For details about setting up a Windows client and the LICENSE_FILE variable, see [Setting up a Windows Client, on page 3-28](#).

3. For a Solaris or Linux client, set the SYNPLCTYD_LICENSE_FILE environment variable with *portnumber @servername* values for each of the three servers.

```
C shell % setenv SYNPLCTYD_LICENSE_FILE port_number@host_name1,  
port_number@host_name2,port_number@host_name3
```

```
Other shells $ SYNPLCTYD_LICENSE_FILE= port_number@host_name1,  
port_number@host_name2,port_number@host_name3  
$ export SYNPLCTYD_LICENSE_FILE
```

For details about setting up a Linux or Solaris client, see [Setting up a Linux or Solaris Client, on page 3-29](#).

Setting up a Windows Client

For server-based installations with Windows clients, you must set a SYNPLCTYD_LICENSE_FILE environment variable so that the client can check out a license from the server. The following procedure must be repeated on each individual client machine.

1. Install the software on the client machine as described in *Installing on a Windows Platform*, on page 2-2.

2. Set up your license server.

You can configure any Synopsys FPGA-supported Linux, Windows, or Solaris workstation as the license server. See the appropriate sections for details: *Configuring Windows License Servers*, on page 3-6, *Configuring Linux License Servers*, on page 3-13, and *Configuring Solaris License Servers*, on page 3-17.

3. Obtain the port number and name of the license server from your administrator. If you are using a redundant server configuration, obtain the port number and name of each of the servers.
4. Go to Start->Settings->Control Panel->System and do the following:

- Select the Advanced tab, and click Environment Variables.
- Select New under User Variables to open the New User Variables dialog box.
- For single-server configurations, add a SYNPLCTYD_LICENSE_FILE variable, with a value of *portnumber @servername*. In this example, 1800 is the port number and genie is the server name.

```
Variable: SYNPLCTYD_LICENSE_FILE  
Value: 1800@genie
```

- For redundant server configurations, add a SYNPLCTYD_LICENSE_FILE variable with a comma-separated *portnumber @servername* value for each server. In the following multiple-server example, 1800 is the port number for the three servers and larissa, nereid, and lysishea are the individual server names

```
Variable: SYNPLCTYD_LICENSE_FILE  
Value: 1800@larissa,1800@nereid,1800@lysishea
```

- Click OK.

Setting up a Linux or Solaris Client

The standard Synopsys FPGA client license allows you to run a Synopsys FPGA tool across a network of Synopsys FPGA-supported Windows, Solaris, and Linux systems, up to the number of seats your license supports. The following procedure describes how to set up a Linux or Solaris client for a license server. You can use this procedure to set up a standard or evaluation license.

1. Install the software as described in *Installing from a CD (Solaris or Linux)*, on page 2-3 or *Downloading from the Synopsys Website (Solaris/Linux)*, on page 2-4.

2. Set up your license server.

You can configure any Synopsys FPGA-supported Windows, Linux, or Solaris workstation as the license server. See the appropriate sections for details: *Configuring Windows License Servers*, on page 3-6, *Configuring Linux License Servers*, on page 3-13, and *Configuring Solaris License Servers*, on page 3-17.

3. Obtain the *port_number* and *host_name* information for your license server. If you are using a redundant server configuration, find this information for each of the servers.

- Check the SERVER line in your license.dat file on the license server. The following is a typical SERVER entry for a single-server configuration. In this entry, SERVER is a keyword, lysithea is the host name of the server, 12345678 is the host ID of the server, and 1701 is the port number.

```
SERVER lysithea 12345678 1701
```

- Concatenate the port number and server name from the SERVER entry to create the *port_number@host_name* string. For the example, the *port_number@host_name* string is 1701@lysithea.
4. Set the SYNPLCTYD_LICENSE_FILE environment variable for each client system

This variable points to the license server port or license file. If the client system is the same system as the license server, you can also set the variable to the actual path to the license.dat file. The client system can be any Synopsys FPGA-supported system on the network that can access the license.dat file.

- Determine if the SYNPLCTYD_LICENSE_FILE environment variable is already defined. Enter the following command at the shell prompt:

```
% echo $SYNPLCTYD_LICENSE_FILE
```

- If the SYNPLCTYD_LICENSE_FILE variable is undefined, set the SYNPLCTYD_LICENSE_FILE variable to find your license file using one of the options below:

From a...	Variable
C shell, single-server configuration	% setenv SYNPLCTYD_LICENSE_FILE <i>port_number@host_name</i>
Other shells, single-server configuration	\$ SYNPLCTYD_LICENSE_FILE= <i>port_number@host_name</i> \$ export SYNPLCTYD_LICENSE_FILE
C shell, redundant-server configuration	% setenv SYNPLCTYD_LICENSE_FILE <i>port_number@host_name1, port_number@host_name2, port_number@host_name3</i>
Other shells, redundant-server configuration	\$ SYNPLCTYD_LICENSE_FILE= <i>port_number@host_name1, port_number@host_name2, port_number@host_name3</i> \$ export SYNPLCTYD_LICENSE_FILE

5. Verify the path to your license file by entering the following at the shell prompt:

```
% echo $SYNPLCTYD_LICENSE_FILE
```

6. Set your SYNPLCTYD_LICENSE_FILE to start automatically when you log in by setting the SYNPLCTYD_LICENSE_FILE environment variable in your shell start-up script (.cshrc, .kshrc, or .profile files).
7. Check the license manager version.

Selecting a License Automatically

If you have multiple licenses for Synopsys FPGA tools, you can set up your environment to automatically select a license for you.

1. To select a license automatically in GUI mode, add the following line to the `.ini` file for the tool:

```
-licensetype <featureName>
```

Setting this ensures that the license you want to use starts automatically when you run the tool in GUI mode. Alternatively, you can set an environment variable, as described in the next step.

2. To select a license automatically when you are running a batch process, set an environment variable for the license you want. For example:

```
SYNPLIFY_LICENSE_TYPE=<featureName>
```

This is the only way you can specify automatic license selection in a batch process, because there is no `.ini` file.

You can set different variables for various Synopsys FPGA tools. For example:

```
SYNPLIFY_LICENSE_TYPE  
SYNPLIFYPRO_LICENSE_TYPE  
CERTIFY_LICENSE_TYPE
```

3. For both the batch and GUI modes, you can specify a list of feature names, separated by colons:

```
-licensetype synplifypro:synplify  
SYNPLIFY_LICENSE_TYPE=synplifypro:synplify
```

If you have used multiple methods to specify automatic license selection, the tool selects a license according to this priority list:

- `-licensetype` command line switch
- `.ini` file setting (GUI only)
- System environment variable

Troubleshooting

If you have difficulties installing or licensing your Synopsys FPGA product, read this section before contacting Synopsys or your local technical support representative.

Debugging Errors

If `lmstat` reports errors, read the log file `/usr/tmp/lmgrd_synplicity.log`. The log file gives you information that can help you resolve problems. Repeat the licensing steps as needed.

Some common problems include the following:

- Typographical errors in the `license.dat` file.
- An improperly set `SYNPLCTYD_LICENSE_FILE` or `LM_LICENSE_FILE` environment variable.
- Multiple Synopsys FPGA license manager daemons (`lmgrd`) executing. In this case, use one of the following commands to list the `lmgrd` processes, kill the older process, and try again.

```
% ps -ef | grep lmgrd
```

or

```
% ps -auxw | grep lmgrd
```

If you continue to have trouble, ask your system administrator for assistance.

Contacting Synopsys for FPGA Products

You can also contact Synopsys:

In North America	FAX: +1 408 990 0290 Email: sbg_license@synopsys.com
------------------	---

Outside North America	FAX: Local sales office. See http://www.synopsys.com for a list. Phone: +1 408 215 6000
-----------------------	--

When you contact Synopsys for your FPGA product, make sure you include the following:

- A copy of your license.dat file
- A support.log file. To create this file, enter these commands:

```
% echo $SYNPLCTYD_LICENSE_FILE > support.log
% echo $LM_LICENSE_FILE > support.log
% ps -ef | grep lmgrd >> support.log
% ps -ef | grep synplctyd >> support.log
% install_directory/linux/lmutil lmstat -a >> support.log
```

Based on your system environment, you might need to use the `ps -auxw` command instead of the `ps -ef` command, but the remainder of the command line is the same.

Index

A

Altera Byteblaster for Identify [2-14](#)

B

batch mode
 automatic license selection [3-31](#)

C

CDs

 installing from (Linux) [2-3](#)
 installing from (Solaris) [2-3](#)
 installing from (Windows) [2-2](#)

Certify

 configuring license [1-11](#)
 floating evaluation licenses [1-5](#)
 floating licenses [1-6](#)
 installing software [2-2](#)
 licensing flow diagram [1-11](#)

clients

 Linux [3-29](#)
 redundant servers [3-27](#)
 Solaris [3-29](#)
 Windows [3-28](#)

D

daemons

 synplctyd license [3-7](#)

dongles. *See* security keys

E

ethernet address. *See* MAC address

evaluation license [1-2](#)

evaluation licenses

 configuring [1-7](#)
 flow diagram [1-7](#)
 requesting [1-7](#)

F

files

 downloading tar [2-4](#)

FLEXid drivers [2-17](#)

 Linux [2-21](#)

floating licenses

 evaluation [1-5](#)
 product [1-6](#)
 security keys (Windows) [2-17](#)

H

hardware address. *See* MAC address

HDD_Linux_dinst command [2-21](#)

I

Identify

 configuring license [1-14](#)
 floating licenses [1-6](#)
 flow diagram [1-14](#)
 installing [2-12](#)

Identify/Identify Pro

 floating evaluation licenses [1-5](#)

init.d boot script [3-16](#)

installation

 CD-ROM on Solaris [2-3](#), [2-4](#)
 website download [2-4](#)

L

license daemon

 starting (Windows) [3-8](#)

license file

 overwriting (Linux) [3-13](#)
 overwriting (Solaris) [3-17](#)
 setting up on Windows server [3-7](#)
 updating (Linux servers) [3-13](#)
 updating (Solaris) [3-17](#)

- updating for redundant server configurations 3-23
- updating for serverless node-locked licenses 3-2
- updating for WAN servers 3-22
- License Manager daemon. *See* `lmgrd`
- license servers
 - redundant 3-23
 - Solaris 3-17
 - wide area networks 3-22
 - Windows 2-6, 3-6
- license.dat file
 - Windows server 3-7
- LICENSE_TYPE environment variable 3-31
- licenses
 - automatic selection 3-31
 - multiple 3-31
 - types 1-2
- licensetype switch 3-31
- licensing
 - troubleshooting 3-32
- Linux
 - clients 3-29
 - downloading software 2-4
 - installing software from CDs 2-3
 - node-locked server-based licenses 3-4
 - parallel port drivers for Identify 2-13
 - redundant server example 3-24
 - redundant servers 3-23
 - security keys 2-19
- LM_LICENSE_FILE
 - setting (Linux) 3-14
- lmdiag 3-16
- lmgrd
 - checking version (Linux) 3-15
 - checking version (Solaris) 3-18
 - checking version for Identify 3-20
 - checking version for WAN servers 3-22
 - starting (Linux) 3-15
 - starting (Solaris) 3-18
 - starting (Windows) 3-8
 - starting at system boot (Linux) 3-16
 - starting on redundant servers 3-25, 3-26
- LMTOOLS utility 3-8
- load_daemon.sh utility 2-20

M

- MAC address 1-2
- MathWorks, required features 2-11
- MATLAB
 - installing Synplify DSP 2-7
 - permissions on Linux platforms 2-8
- Media Access Control address. *See* MAC address

N

- node-locked licenses
 - configuring server-based 3-4
 - configuring serverless 3-2
 - definition 1-2
 - evaluation 1-4
 - product 1-5
 - security keys (Windows) 2-16

P

- parallel port dongles
 - FLEXid (Windows floating) 2-18
- parallel port drivers
 - Identify 2-13
 - Identify (Windows) 2-12
- product licenses
 - configuring 1-9
 - flow diagram 1-9

R

- redundant license servers 3-23
- redundant servers
 - clients 3-27
 - Linux or Solaris clients 3-29
 - SYNPLCTYD_LICENSE_FILE 3-28
 - using Linux machines 3-23

S

security keys

- floating licenses (Windows) 2-17
- Linux 2-19
- node-locked licenses (Windows) 2-16
- parallel port FLEXid (Windows) 2-18
- USB port FLEXid (Linux) 2-21
- USB port FLEXid (Windows) 2-18
- USB port Sentinel (Linux) 2-19
- USB port Sentinel (Windows) 2-16
- Windows 2-15

Sentinel driver

- Windows 2-16

Sentinel drivers

- Linux 2-19

software installation

- CD-ROM on Solaris 2-3, 2-4
- website download 2-4

Solaris

- clients 3-29
- downloading software 2-4
- installing software from CDs 2-3
- license servers 3-17
- redundant server example 3-25

support.log file 3-33

synplctyd license daemon 3-7

SYNPLCTYD_LICENSE_FILE

- Linux clients 3-29
- redundant servers (Windows clients) 3-28
- server-based node-locked licenses 3-5
- setting for serverless node-locked 3-3
- Solaris clients 3-29
- Windows client 3-28

Synplify

- configuring license 1-11
- evaluation licenses 1-4
- floating evaluation licenses 1-5
- floating licenses 1-6
- installing software 2-2
- licensing flow diagram 1-11
- node-locked standard licenses 1-5

Synplify DSP

- configuring license 1-13
- floating evaluation licenses 1-5
- floating licenses 1-6
- flow diagram 1-13
- installing (Linux) 2-8
- installing (Windows) 2-6
- node-locked evaluation licenses 1-4
- node-locked standard licenses 1-5

Synplify Premier

- configuring license 1-11
- floating evaluation licenses 1-5
- floating licenses 1-6
- installing software 2-2
- licensing flow diagram 1-11
- node-locked evaluation licenses 1-4
- node-locked standard licenses 1-5

Synplify Pro

- configuring license 1-11
- floating evaluation licenses 1-5
- floating licenses 1-6
- installing software 2-2
- licensing flow diagram 1-11
- node-locked evaluation licenses 1-4
- node-locked standard licenses 1-5

T

tar files

- downloading 2-4

trial license. *See* evaluation license

troubleshooting 3-32

U

Unix

- software downloads 2-4

USB port dongles

- FLEXid (Linux floating) 2-21
- FLEXid (Windows floating) 2-18
- Sentinel (Linux floating) 2-19
- Sentinel (Windows node-locked) 2-16

W

WAN license servers [3-22](#)

Windows

- downloading software [2-2](#)
- installing software from CDs [2-2](#)
- license clients [3-28](#)
- license server [2-6](#)
- license server setup option [2-2](#)
- license servers [3-6](#)
- node-locked server-based licenses [3-4](#)
- node-locked serverless licenses [3-2](#)
- parallel port driver for Identify [2-12](#)
- redundant server example [3-24](#)
- security key for node-locked licenses [2-16](#)
- security keys for floating licenses [2-17](#)

Windows firewall, configuring [3-10](#)

Windows license servers
configuring [3-6](#)

Windows Vista
dongles [2-15](#)

X

Xilinx WinDriver for Identify [2-13](#)