XILINX®

Release Document

Alliance Series vM1.3 Install and Release Document

June 1997

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Chapter 1

Introduction

This manual explains how to install Xilinx Alliance Version M1.3 software products and how to configure your system for use with the Xilinx Development software. This software offers the industry's most advanced and flexible timing-driven design system. This release is compatible with the following third-party products:

- Viewlogic/Workview Office/Version 7.31

- Viewlogic/Powerview/Version 6.0

- Mentor Graphics/Version B.1

- Synopsys/Version 3.4b

- Cadence/Version 97A

This document describes how to install the software on either a PC or UNIX platform. This document provides tips and workarounds that will help you to use the Xilinx core tools with any of the third-party products listed above. It also describes how to use the new Xilinx online documentation, which is now implemented in SGML (Standard Generalized Markup Language).

Operating System Compatibility

The UNIX version of this Xilinx software is available for the Sun, Solaris, and Hewlett-Packard platforms. The following table shows the specific version numbers of the UNIX operating systems with which this release has been thoroughly tested.

Sun 4	Solaris	HP Series 900
SunOS 4.1.3 *or* SunOS 4.1.4	Solaris 2.5	HP-10.2

The PC version of the software operates on Windows NT 4.0 and Windows 95.

GNU License Agreement

Xilinx distributes the Perl program with the Alliance software. Perl, which is used for the installation of software, is copyright (c) 1989, 1991 Free Software Foundation, Inc., and is distributed without warranty of any kind pursuant to the GNU General Public License Agreement, a copy of which is available from Xilinx upon your request. For three years following your acquisition of the Perl program along with Xilinx's Alliance software, Xilinx will supply a copy of the Perl source code upon your request to Xilinx Customer Support.

Contents

The Xilinx Development System software and online documentation is provided on three CD-ROMs. It consists of the following.

Software Component	UNIX	PC
Installation program	●	●
Xilinx core software tools	●	●
CAE interface libraries for Workview Office/Version 7.31		●
CAE interface libraries for Powerview/Version 6.0	●	
CAE interface libraries for Mentor Graphics/Version B.1	●	
CAE interface libraries for Synopsys/Version 3.4b (or later)	●	
CAE interface libraries for Cadence/Version 97A	●	
Version 2.3 DynaText browser	●	
Version 3.1 DynaText browser		●
Xilinx online documentation	●	●

Online Help

Context-sensitive online help is available for all Xilinx programs that are available with a GUI (graphical user interface). Each GUI has its own help file that is invoked by that particular program.

Note: Each help file contains two topics, "How to Use Help," and "Obtaining Help," that you can refer to if you need detailed information about how to use the online help system.

Documentation

One CD-ROM contains Xilinx online documentation, DynaText online documentation, and the DynaText browser.

The following Xilinx online documentation titles are available for the Xilinx Alliance Version M1.3 software.

- *Answers Guide*
- *Cadence Interface/Tutorial Guide*
- *CPLD Schematic Design Guide*
- *CPLD Synthesis Design Guide*
- *Design Manager/Flow Engine Reference/User Guide*
- *Development System Reference Guide*
- *Development System User Guide*
- *EPIC Design Editor Reference/User Guide*
- *Hardware Debugger Reference/User Guide*
- *Hardware User Guide*
- *JTAG Programmer Guide*
- *Libraries Guide*
- *LogiBLOX Reference/User Guide*
- *Mentor Graphics Interface/Tutorial Guide*
- *PROM File Formatter Reference/User Guide*
- *Quick Start Guide for Xilinx Alliance vM1.3*
- *Synopsys (XSI) Interface/Tutorial Guide*
- *Timing Analyzer Reference/User Guide*
- *Viewlogic Interface/Tutorial Guide*

You also have access to DynaText's own online documentation. These titles explain how to use the DynaText browser to view online documents.

- *Reader Guide*
- *Tutorial*
- *Shuttle Press Kit*

Guidelines

The following is a summary of the steps to follow for getting ready to use your software.

- Fill out the enclosed registration card.

  Fax or mail Xilinx the card to receive future updates and product information.

- Read the release document.

- Install your Alliance software.

  Follow the instructions for your platform in these release notes to install your software.

  If you do not want to install the software, you can execute it directly from the CD-ROM, as explained in the "Installing Alliance on Workstations" chapter or the "Installing Alliance on PCs" chapter.

- Install online documentation.

  You can access Xilinx documentation online on a PC running Windows 95 or Windows NT, Sun and HP workstations.

  You must use the DynaText browser to read Xilinx online documentation.

  The browser can be installed from the Alliance core tools CD-ROM. The browser can also be installed from the Online Documentation CD-ROM. You can also read online documents from the browser on the CD-ROM.

  In addition, context-sensitive help is available for all Windows-based programs. Context-sensitive help is available from the Help menu of each program. It is also available from selection dialog boxes that include a Help button. Refer to the manual for each of these programs for more information.

- License your Alliance software.

  After installing your software, you must authorize it. To authorize software, refer to the "Setting Up Security" chapter. Also refer to the License and Registration Instructions located in your package.

- Address your questions and comments to the numbers shown in the "Xilinx Customer Support Information" chapter.

Chapter 2

Versions and Compatibility

The following table shows tool interface program names with the supported vendor version numbers.

This software is compatible with Xilinx schematic and simulation interfaces for Powerview, Mentor Graphics, Synopsys, Viewlogic, and Cadence; however, before you install this software, verify that you have the appropriate version of your CAE tool interface program.

CAE Tool Compatibility		
Tool Environment	**Tool/Interface**	**Vendor Version**
Mentor Graphics	Mentor V8 Interface DS-344 / SC-344	B.1
Synopsys	SC-401	3.4b
Viewlogic	Workview Office (PCs) Powerview (Workstations)	7.3.1 6.0
Cadence	Concept	97A

Xilinx Design with Viewlogic's Workview Office

Xilinx software is compatible with the schematic and simulation interface within Viewlogic's Workview Office product, but the actual Viewlogic EDA / schematic tools are not provided with this software. Consequently, before you install this Xilinx software, verify that you have Viewlogic's Workview Office, version 7.3.1 (or 7.2) installed. Viewlogic is not shipping the WVO 7.3 due to changes in their ViewSynthesis flow. Viewlogic will upgrade all customers to WVO 7.3.1.

The Viewlogic tools can be used for either CPLD or FPGA designs.

Chapter 3

Features in This Release

This chapter describes the major supported and unsupported
features of the release.

Major Features

These major features are supported for this release and were also
supported for the M1.2 release:

*   The XC4000E, XC4000EX, XC4000L, XC4000XL, XC7300, and
    XC9500 device families.

*   Viewlogic interface

*   Mentor interface

*   XNF netlist interface

*   Bitstream generation

*   RAM initialization

*   EDIF, VITAL-compliant VHDL, and Verilog back annotation

*   Japanese Install Program

    Japanese customers will enjoy using the Xilinx installation
    program which has been localized using Kanji characters.

*   Synopsys Support

    *   The current software directly reads the SXNF and SEDIF files
        from Synopsys, which means you do not have to run the
        Syn2XNF, XNFMerge, XNFPrep, and X-BLOX programs.

    *   DesignWare components are pre-compiled and are automati-
        cally used when your design is compiled.

    *   Translation of Synopsys timing constraints directly from the
        Synopsys script file into Xilinx constraint syntax.

- Cadence Support

  You can now use Cadence EDA design tools to implement Xilinx FPGA and CPLD designs.

- LogiBLOX Support

  LogiBLOX is a graphical interactive design tool that you can use for creating high-level modules such as counters, shift registers and multiplexers. LogiBLOX includes both a library of generic modules and a set of tools for customizing these modules. Using the LogiBLOX graphical user interface (GUI), you can create and process high-level LogiBLOX modules that will fit into your schematic-based design or HDL synthesis-based design.

- Netlister Launcher

  You no longer have to run the netlist interfaces manually. NGDBuild automatically runs the appropriate netlist reader for the EDIF or XNF input file. In addition, "make" capability is available, which means only netlists that have changed since the last run of the netlist readers need to be read again.

- Improved TIMESPEC Support

  The new TIMESPECs are supported in this release. They are almost identical to the previous TIMESPECs, but with some minor syntax changes and new additions.

- Updated Documentation

  Complete online help and online documentation is provided with this software. The online help follows the Windows look-and-feel on both UNIX and PC platforms, and is provided on a program-by-program basis. The online documentation is organized into books, is implemented in SGML, and is presented to you using the DynaText browser from EBT (Electronic Book Technologies).

Features not supported in this release include the following:

- Support for XC3000/XC5200 devices
- EPIC support for TIMESPECs

Xilinx Synopsys Interface (XSI)

The following subsections describe basic XSI features/issues.

Features Included in this XSI Release

- XC4000E/L synthesis library, including Xilinx DesignWare Library.

- XC4000EX/XL synthesis library, including Xilinx DesignWare library.

- XC4000E FTGS simulation library (contains a limited subset of Unified Library components) to support behavioral simulation of designs containing instantiated cells.

- Simprim VITAL-compliant back annotation simulation library and netlister.

- CLB/IOB synthesis for XC4000E/XC4000EX.

- XC7000 synthesis library, including Xilinx DesignWare Library

- XC9000 synthesis library

- Translation of Synopsys timing constraints directly from the Synopsys script file into Xilinx constraint syntax.

Features Not Included in this XSI Release

- XC4000EX/XL functional simulation library to support behavioral simulation of designs containing instantiated cells that use GSR/GTS in back-end simulation.

- Synthesis of complex IOB functions, including clock-enabled flip-flops and output logic-gates/mux. Instead, these functions are available through instantiation.

X-BLOX

The X-BLOX DesignWare library shipped with the XACT 5.2.1 software is unchanged in the current release of the XC4000EX software. In the current software release, X-BLOX modules are provided in an expanded form so the X-BLOX program is no longer required.

Therefore, the X-BLOX modules that result from synthesizing designs with this library are no longer expanded using the X-BLOX module compiler (an XACT 5.2.1 executable that is invoked as part of the design implementation process.) The Xilinx design implementation tools automatically incorporate these expanded netlists, which considerably reduces processing times.

Note: The X-BLOX DesignWare library is now known as the Xilinx DesignWare (XDW) library.

Simulation

VSS V3.4b is available in two different versions: V3.4b and V3.4b-VITAL. V3.4b is a maintenance update to V3.4a, and is compatible with the various simulation library formats that have traditionally been supported by VSS in the past (such as FTGS). V3.4b-VITAL incorporates many new features, such as support for IEEE 1076.4 (also known as VITAL). Support for the traditional library formats is not available in V3.4b-VITAL. Synopsys V3.5x and Synopsys V1997.01 combine VITAL support and support for other library formats in the same simulator package.

Currently, you must install VSS V3.4b and V3.4b-VITAL in different areas; you can select (with environment settings) only one version at a time. Therefore, any simulation performed with VSS using FTGS libraries requires one environment setup, while simulation using VITAL libraries requires another.

In the current Xilinx release, back-annotated simulation is performed using VITAL-compliant SIMPRIM libraries, which requires VSS V3.4b-VITAL. However, behavioral simulation of designs containing instantiated primitive cells, where the models for those cells are provided from an FTGS library, requires VSS V3.4b. You may have to change your environment settings to point to the appropriate simulator at different stages in the design flow.

Note: Behavioral simulation of designs that do not contain instantiated primitive cells can be simulated with either tool.

Chapter 4

Device and Package Support

The following is a master table of Xilinx devices for this release. For more information on architectural families and specific device parameters, see *The Programmable Logic Data Book*.

Device	Packages	Speed Grades
XC4003E	PC84, PQ100, VQ100, PG120	-1 -2 -3 -4
XC4005E	PC84, PG156, PQ100, PQ160, PQ208, TQ144, CB164	-1 -2 -3 -4
XC4006E	PC84, TQ144, PG156, PQ160, PQ208	-1 -2 -3 -4
XC4008E	PC84, PQ160, PG191, PQ208	-1 -2 -3 -4
XC4010E	PC84, PQ160, PG191, PQ208, HQ208, BG225, CB196	-1 -2 -3 -4
XC4013E	PQ160, PQ208, HQ208, PG223, BG225, PQ240, HQ240, CB228	-1 -2 -3 -4
XC4020E	PG223, HQ208, HQ240	-1 -2 -3 -4
XC4025E	PG223, HQ240, PG299, HQ304, CB228	-2 -3 -4
XC4028EX	HQ208, HQ240, HQ304, PG299, BG352	-2 -3 -4
XC4036EX	HQ240, HQ304, BG352, PG411, BG432	-2 -3 -4
XC4005L	PC84, PQ100, PQ208	-5
XC4010L	PC84, TQ176, PQ208	-5
XC4013L	PQ208, BG225, PQ240	-5
XC4005XL	PC84, PQ100, PQ160, PQ208, TQ144, VQ100	-1 -2 -3
XC4010XL	BG256, PC84, PQ100, PQ160, PQ208, TQ144, TQ176	-1 -2 -3
XC4013XL	BG256, HT144, HT176, PQ160, PQ208, PQ240	-1 -2 -3
XC4020XL	BG256, HT144, HT176, PQ160, PQ208, PQ240	-1 -2 -3
XC4028XL	BG256, BG352, HQ208, HQ240, PG299	-1 -2 -3
XC4036XL	BG352, BG432, HQ208, HQ240, PG411	-1 -2 -3

Device	Packages	Speed Grades
XC4044XL	BG352, BG432, HQ240, PG411	-1 -2 -3
XC4052XL	BG432, BG560, HQ240, PG411	-1 -2 -3
XC4062XL	BG432, BG560, HQ240, PG475, PG559	-1 -2 -3
XC4085XL	PG559	-1 -2 -3
XC7336	PQ44, PC44	-5 -7 -10 -12 -15
XC7336Q	PQ44, PC44, VQ44	-10 -12 -15
XC7354	PC68, PC44	-7 -10 -12 -15
XC7372	PC84, PC68, PQ100	-7 -10 -12 -15
XC73108	BG225, PQ100, PQ160, PG144, PC84	-7 -10 -12 -15 -20
XC73144	BG225, PQ160	-7 -10 -12 -15
XC9536	PC44, VQ44	-5 -7 -10 -15
XC9572	PC84, PQ100, TQ100, PC44	-7 -10 -15
XC95108	PC84, PQ100, TQ100, PQ160	-7 -10 -15 -20
XC95144	PQ100, PQ160	-7 -10 -15 -20
XC95216	PQ160, HQ208, BG352	-10 -15 -20
XC95288	HQ208, BG352	-10 -15 -20

Chapter 5

Installing Alliance on Workstations

This chapter describes how to install the Alliance software on workstations.

The Alliance software can be used on a single standalone system or on a number of systems sharing a network. In a networked environment, the software is installed on one server on the network. If you have purchased the network license option, users on the network can access this software to perform Alliance applications. If you have not purchased the network license option, the software may be installed on any workstation or server, but can only be run on a single workstation at a time.

To control access to the Alliance software, the Xilinx security system software must also be installed when you install the software. This security system must be installed on networked installations or standalone installations.

Upgrading From Earlier Xilinx Software

You cannot upgrade the new release, Version M1.3, from an earlier release of Xilinx software. You must fully install the new software; however, you can migrate existing design files for use with the Alliance software. For details, refer to the *XACT Conversion Guide*.

Note: Xilinx strongly recommends that you install this release of the software in a completely separate directory from any earlier Xilinx releases.

Workstation Requirements

Hardware and software requirements for a UNIX workstation are:

Type of Workstations: Sun SPARCstation, HP/UX.

Operating Systems:

SunOS Version 4.1.3 and 4.1.4

Solaris 5.4 and 5.5

HP 10.1 and 10.2

Windowing System:

X Window System Version X11R4 (or compatible)

Window Manager: OSF/Motif 1.1

System Memory (RAM): UNIX Memory Requirements

Xilinx Device	RAM	Swap Space
XC4000E/L XC4028EX through XC4036EX XC4005XL through XC4028XL XC7300 XC9500 (small devices)	64 MB	64 MB-128 MB
XC4036XL through XC4062XL XC9500 (large devices)	128 MB	128 MB-256 MB
XC4085XL	256 MB	256 MB-512 MB

Note: The values in the previous table are for typical designs, and include the loading of the operating system. Additional memory may be required for certain "boundary-case" or "pathological" designs, as well as for concurrent operation of other applications (for example, Microsoft Word or Excel).

Xilinx recommends that 4000EX designs be compiled using an Ultra Sparc, HP715, or equivalent machine type. 64 MB of RAM as well as 64 MB of swap space is required to compile 4000EX designs, but Xilinx recommends that 128 MB of RAM, plus corresponding swap space, be used.

Required Disk Space For Core Technology CD:

	Data	Sun	Sol	HP
Xilinx Core Technology[1]	~12 MB	~76 MB	~77 MB	~77 MB
XC4000[2]	~1.2 MB	~2 MB	~2 MB	~3 MB

XC4000E
  4003E, 4005E, 40006E, 4008E
  4010E, 4013E
  4020E, 4025E
	~30 MB total
	~12 MB
	~7 MB
	~9 MB
		~.5 MB
		~.5 MB
		~.5 MB
		~.5 MB
			~.25 MB
			~.25 MB
			~.25 MB
			~.25 MB
				~.5 MB
				~.5 MB
				~.5 MB
				~.5 MB

XC4000L[3]
  4005L
  4010L, 4013L
	~2 MB total
	~1 MB
	~1 MB
		~1 KB
		~1 KB
		~1 KB
			~1 KB
			~1 KB
			~1 KB
				~1 KB
				~1 KB
				~1 KB

XC4000EX[4]
  4028EX
  4036EX
	~20 MB total
	~7 MB
	~8 MB
		~.25 MB
		~.25 MB
		~.25 MB
			~.25 MB
			~.25 MB
			~.25 MB
				~.25 MB
				~.25 MB
				~.25 MB

XC4000XL[5]
  4005XL, 4010XL, 4013XL, 4020XL
  4028XL, 4036XL, 4044XL
  4052XL, 4062XL, 4085XL
	~76 MB total
	~19 MB
	~15 MB
	~34 MB
		~1 KB
		~1 KB
		~1 KB
		~1 KB
			~1 KB
			~1 KB
			~1 KB
			~1 KB
				~2 KB
				~2 KB
				~2 KB
				~2 KB

CPLDs[6]		~20 MB	~20 MB	~20 MB
XC7300[6]	~1 MB	~1 KB	~1 KB	~1 KB
XC9500[6]	~1 MB	~1 KB	~1 KB	~1 KB
Non-numeric XC4000E	~3 MB	~.5 MB	~.25 MB	~.5 MB
Non-numeric XC4000EX	~3 MB	~.25 MB	~.25 MB	~.25 MB

Documentation
  Online Help
  Documentation Browser
  Xilinx Tutorial Files
  Xilinx Training Files
  Xilinx userware
	~52 MB total
	
	~11 MB
	~9 MB
	~28 MB
	~4 MB
		~10 MB	~10 MB	~10 MB

[1] The DynaText browser and its online books are not included. If you install more than one platform, the data directory is only installed once. For example, if you install for SunOS and Solaris, the total disk space for the core technology is:

data (12 MB) + SunOS (76 MB) + Solaris (77 MB) = ~165MB

[2] Installed once when any number of XC4* software components are installed. For example, if you install the XC4000EX, then all files in the xc4000/data and the xc4000/bin/*platform* directories are also automatically installed even if this software component was not selected as part of the install.

[3] The files not beginning with a numeral in the xc4000e/data directory and the xc4000e/bin/*platform* directory are also installed when the xc4000l is installed.

[4] The files not beginning with a numeral in the xc4000e/data directory and the xc4000e/bin/*platform* directory are also installed when the xc4000ex is installed.

[5] The files not beginning with a numeral in the xc4000e/data and the xc4000/bin/*platform* directories are installed when the xc4000xl is installed. In addition, the files not beginning with a numeral in the xc4000ex/data and the xc4000ex/bin/*platform* directories are also installed when the xc4000xl is installed.

[6] Platform-specific files are installed for XC7300 and XC9500 devices. If both the XC7300 and XC9500 are installed, the platform directory is only installed once.

Example 1: Core Technology Installation -- Single Sun Platform

Assume that you have installed the Sun platform, all the subcomponents for the XC4000XL, and the online help and documentation browser subcomponents.

Disk space requirements are as follows:

Core technology = 12 MB (Data) + 76 MB (Sun) = 88MB

xc4000xl = 77 MB (Data + Sun files)

non-numeric xc4000e/data files + Sun = 3 MB + .5 MB

non-numeric xc4000ex/data files + Sun = 3 MB + .25 MB

xc4000 = 1.2 MB (Data) + 2 MB (Sun) = 3.2 MB

Online Help (10 MB) + browser (11 MB) = 21 MB

Total = 196 MB

Example 2: Core Technology Installation -- Multiple Platforms

Assume that you have installed the Sun and HP platforms, all the subcomponents for the XC4000EX, the XC4010E, XC4013E, and the entire documentation software component.

Note: You must run the installation program twice to install two platforms.

Disk space requirements are as follows:

Core technology = 12 MB (Data) + 76 MB (Sun) + 77 MB (HP) = 165MB

xc4000ex = 20MB (Data + Sun files)

non-numeric xc4000e/data + Sun + HP = 3 MB + .5 MB + . 5 MB

xc4010e, xc4013e = 7 MB (Data) + 1 MB (Sun, HP files) = 8 MB

xc4000 = 1.2 MB (Data) + 2 MB (Sun) + 3 MB (HP) = 6.2 MB

Documentation = 52 MB

Total = 165 MB + 20 MB + 4 MB + 8 MB + 6.2MB + 52 MB = 256 MB

Example 3: Core Technology Installation -- Single Solaris Platform, CPLDS

Assume that you have installed the Solaris platform, the XC7300, XC9500, the online help, documentation browser, and Tutorial files.

Disk space requirements are as follows:

Core = 12 MB (Data) + 77 MB (Solaris) = 89 MB

xc7300 = 1 MB (Data + Solaris files)

xc9500 = 1 MB (Data + Solaris files)

CPLD = 20 MB (Solaris)

10 MB (Help) + 11 MB (browser) + 9 MB (tutorial) = 30 MB

Total = 89 MB + 1 MB + 1 MB + 20 MB + 30 MB = 141 MB

Required Disk Space for CAE Tools CD: ~388 MB

Mentor: ~116 MB

Synopsys: ~ 82 MB

Viewlogic: ~30 MB

Cadence: ~160 MB

Required Disk Space For Documentation CD: ~209 MB total

DynaText Browser: ~11 MB

Core Online book files: ~6 MB

Xilinx Online Documentation: ~ 192 MB total

Cadence Graphics Interface/Tutorial Guide: ~18 MB
CPLD Schematic Design Guide: ~1 MB
CPLD Synthesis Design Guide: ~2 MB
Design Manager/Flow Engine Reference/User Guide: ~20 MB
Development System Reference Guide: ~2 MB
Development System User Guide: ~2 MB
EPIC Design Editor Reference/User Guide: ~7 MB
Hardware Debugger Reference/User Guide: ~8 MB
Hardware User Guide: ~1 MB
JTAG Programmer Guide: ~2 MB
Libraries Guide: ~30 MB
LogiBLOX Reference/User Guide: ~4 MB
Mentor Graphics Interface/Tutorial Guide: ~50 MB
PROM File Formatter Reference/User Guide: ~4 MB
Quick Start Guide for Xilinx Alliance Series vM1.3: ~4 MB
Synopsys (XSI) Interface/Tutorial Guide: ~2 MB
Timing Analyzer Reference/User Guide: ~7 MB
Viewlogic Interface/Tutorial Guide: ~22 MB

Directory Permissions:

Write permission must exist for all directories containing design files to be edited.

Mouse: 3-button

Network Compatibility:

The Xilinx installation program supports TCP-IP networks.

Installing Alliance on Workstations

This section explains how to install the software from the three CD-ROMs.

- Core Technology CD -- the Xilinx core software tools and the DynaText browser

- CAE Libraries CD -- Xilinx CAE interface libraries

- Documentation CD -- Xilinx online documentation, the DynaText browser with online help, the DynaText online documentation, and core online book files.

If you are performing an initial install and plan to install the Xilinx core software tools, CAE interface libraries, and Xilinx online documentation on your system, begin by performing the procedures described in the "Installing the Core Tools Software" section. Then continue with the "Installing CAE Interface Libraries" section and end with the "Installing Online Documentation" section.

If you are only going to perform a partial install during initial installation, use the procedures outlined in the "Installing CAE Interface Libraries (Standalone)" section and the "Installing Online Documentation (Standalone)" section to add software. You may also access the CAE libraries and online documentation from a CD-ROM.

Installing the Core Tools Software

This section describes how to install the core tools software on a workstation.

1. Check that your system meets the system requirements described in the "Workstation Requirements" section.

2. Log in as root on the workstation connected to the CD-ROM drive.

   If you are performing the installation from a different workstation, use the **rlogin** command to log in to the workstation connected to the CD-ROM drive.

3. Place the core technology CD-ROM for your system in a caddy and insert the caddy into the drive.

4. If necessary, create a mount point for the CD-ROM drive by entering this command:

```
mkdir /cdrom
```

5. Mount the CD-ROM. On Solaris systems with the Volume Manager, the CD-ROM is automatically mounted. If you have the Volume Manager, proceed to Step 6. Otherwise, perform the following steps:

    a) Find out which platform you are mounted on with the following command:

        ```
        uname -a
        ```

    b) Enter one of these commands to mount the CD-ROM drive.

        For SunOS 4.1.3 and 4.1.4:

        ```
        /etc/mount  -r -t hsfs /dev/device_name /cdrom
        ```

        where *device_name* indicates the name of the CD-ROM device. Ask your System Administrator for the *device_name*.

        For Solaris 5.4 and 5.5:

        You do not need to mount the CD-ROM drive for these versions of the Solaris platform. The drive is automounted after CD-ROM insertion.

        For HP/UX:

```
pfs_mount -t rrip -x unix /dev/dsk/device_name /cdrom
```

        where *device_name* indicates the name of the CD-ROM device. Ask your System Administrator for the *device_name*.

        To use pfs_mount, you must be running the PFS daemons. See the "Setting Up the Portable File System (HP Systems)" section in the "Considerations for Various Hardware Platforms" appendix for details.

6. Verify that the CD-ROM drive is mounted.

    ```
    ls /cdrom
    ```

    The installation screens are designed to fit into an 80 column width window. Use an xterm or command window that is 80 characters wide for optimal displays.

Note: Do *not* change to the CD-ROM directory. If you do, you will not be able to unmount.

7. At the UNIX prompt, type **/cdrom/install**. The Xilinx Alliance Installation Program screen displays.

Note: For the Solaris platform, type **/cdrom/cdrom0/install**.

Press Enter to continue.

8. The three options that display on the Software License Agreement are [1] Accept, [2] Decline, and [3] Review.

   • If you are familiar with the licensing agreement and decide to accept the terms of the Agreement and want to install the software, press Enter for the Accept option and proceed to Step 9.

   • If you do not accept the terms of the agreement and do not wish to install the software, enter the Decline menu option (2) and press Enter. Then press Enter again.

   • If you are not familiar with the licensing agreement, review the Agreement before deciding to accept or decline by entering the Review menu option (3) and press Enter. Then press Enter again. At the end of the licensing agreement, press Enter to display the Accept, Decline, and Review options again.

9. After you have accepted the terms of the agreement, the Enter Alliance Source Directory screen appears.
   Enter the source directory from which you will be copying the files or the CD or network from which you will be running.

10. Press Enter to install from the default source directory, the CD-ROM directory. The Enter Alliance Destination Directory screen displays.

11. Enter a destination directory in which to install the Xilinx software core tools. The destination directory displays. Press Enter.

Note: If the destination directory does not exist, a prompt displays asking if you want to create the new directory. Also if you entered the incorrect directory, enter M and then reenter the correct name. (Xilinx recommends that you install the software in the /xilinx directory.) You can use the tilde (~) to represent your home directory. That is, ~ represents /home/*username*.

12. After you select the destination directory, a prompt displays asking you to enter your platform type.

If your platform is already selected, press Enter. Otherwise, enter the menu number option for your platform at the colon (:) prompt. The screen reappears with your selection. Press Enter.

13. Depending on whether or not your LM_LICENSE_FILE variable is set, one of two screens will display.

   • If you do not have the LM_LICENSE_FILE variable set, the following screen displays:

   ```
   Enter License File

   ------------------

   Install will define the LM_LICENSE_FILE envi-
   ronment variable to point to the license file
   entered below. You may need to edit the
   license file before running this software.
   Please read the written documentation for
   further assistance.
   ```
   ```
   License File:
   ```

   Enter the full path name of the license file. For details regarding licensing, refer to the "Setting Up Security" chapter.

   • If you have previously defined the LM_LICENSE_FILE variable, the following screen displays:

   ```
   Enter License File

   ------------------

   The environment variable LM_LICENSE_FILE is
   already defined on this system. You may need
   to edit the license file before running this
   software. Please read the written documenta-
   tion for further assistance.
   ```
   ```
   License File: full_path_to_license_file/license.dat
   ```
   ```
   M)odify B)ack [N])ext C)ancel ?
   ```

   If you wish to point to a different license.dat file, select M and then enter a new license name. Press Next.

For details regarding licensing, refer to the "Setting Up Security" chapter.

14. When the Select Type of Installation menu displays, you have four options:

   - Base (CPLD, FPGA devices up to 8000 gates)

     Allows you to choose from the following list of software and devices for install:

     Core Executables

     XC4000E (XC40003E, XC4005E, XC4006E, XC4008E -- Small FPGAs)

     XC4000L (XC4005L)

     XC4000XL (XC4005XL)

     XC7300

     XC9500

     Online documentation (5 sub-components)
     Online help
     Documentation browser (DynaText)
     Xilinx tutorial files
     Xilinx training files
     Xilinx userware

   - Standard (all CPLD, FPGA devices)

     Allows you to choose from a list of software and devices for install:

     Core Executables

     XC4000E (3 sub-components)
     (XC4003E, XC4005E, XC4006E, XC4008E,)
     (XC4010E, XC4013E)
     (XC4020E, XC4025E)

     XC4000L (2 sub-components)
     (XC4005L)
     (XC4010L, XC4013L)

     XC4000EX (2 sub-components)
     (XC4028EX)
     (XC4036EX)

XC4000XL (3 sub-components)
  (XC4005XL, XC4010XL, XC4013XL, XC4020XL)
  (XC4028XL, XC4036XL, XC4044XL)
  (XC4052XL, XC4062XL, XC4085XL)
XC7300
XC9500

Online documentation (5 sub-components)
  Online help
  Documentation browser (DynaText)
  Xilinx tutorial files
  Xilinx training files
  Xilinx userware

- Lab Machine Installation

  Select this option if you are planning only to use your system to download software to a device. If you select this option, a screen displays allowing you to choose the PROM File Formatter, Hardware Debugger, and JTAG CPLD Programmer for install.

- Run from CD or Network

  Select this option if you plan to access the Alliance software from the CD or from the network. Set up the Xilinx variables as indicated. Use the setup file to set up environment variables and paths.   Run from CD or Network is then complete.

Note: For Cadence, the VAN compiler does not run if you are running from the CD ROM. Xilinx recommends that you not run Cadence from the CD.

15. Follow the instructions for your selection. When installation is complete for Base, Standard or Lab Machine Installation, the Run CAE Installation screen displays.

    - To install the CAE interface libraries, with Yes selected, press Enter and then proceed to the "Installing CAE Interface Libraries" section.

    - To install online documentation without installing the CAE interface libraries, enter number 2 at the prompt and then press Enter. A screen displays prompting you to install online documentation.

      Proceed to the "Installing Online Documentation" section.

- If you are not installing online documentation or CAE inter-
face libraries, enter number 2 at the prompt and then press
Enter. When the screen display appears asking if you want to
install online documentation, enter 2 at the colon prompt and
press enter to end installation. Messages display indicating
environment variables and paths that have been set up in a
file named "setup". Use this file to set up your environment
variables. Environment variables are also described in the
"Setting Up the Xilinx Environment on Workstations"
section.

Installing CAE Interface Libraries

This section explains how to install the CAE interface libraries onto
your system. The section also describes how to access these libraries
from CD-ROM or the network.

This section assumes that you have just installed the Xilinx core soft-
ware from the Core Technology CD as described in the "Installing
the Core Tools Software" section and have chosen to install the CAE
interface libraries. The following screen should display:

```
Please unmount and eject the current CD.
Insert the XILINX CAE Vendors Libraries CD
into the drive and mount it onto the same path.

Press Enter to continue
```

1. Open another shell and unmount the current CD using the
   umount command. Here is an example if you are mounted to
   /cdrom:

   /etc/umount /cdrom

Note: You do not need to use the umount command for the Solaris
platform.

   If the above command does not work, use the following
   command.

   /etc/umount /dev/dsk/*device_name***/cdrom**

   where *device_name* indicates the name of the CD-ROM device.

2. Eject the CD using the eject command.

   eject

3. Remove the current CD from the CD-ROM drive.

4. Insert the CAE Libraries CD into the caddy and mount the CD-ROM drive onto the same path that the Core Technology CD was mounted. See Step 5b in the "Installing the Core Tools Software" section for details.

Note: For the Solaris platform, you do not need to use the `mount` command.

5. Press Enter. When the CAE interface libraries display, follow the instructions to deselect or select libraries from the list. After you have finished, type N and press Enter.

   After you have selected the libraries, you are prompted to select device families for installation.

6. Follow the instructions to deselect or select the device family. After you have finished, type N and press Enter.

   When you have selected the families that you want to install, a screen appears that summarizes the choices that you have made. Following is a sample:

```
Setup has enough information to start copying XILINX
files. If you want to review or change any settings,
enter 'B'. If you are satisfied with the settings,
enter 'N' to begin copying files.

Products

    Mentor

    Synopsys

    Viewlogic

    Cadence

Families

    xc4000E

B)ack [N])ext C)ancel :
```

7. Press Enter to begin installing the libraries and families. Press Enter to continue. A message displays indicating that the libraries are installed

8. Press Enter to continue. A screen displays (Run Documentation Installation) prompting you to install online documentation.

- If you would like to install any online documentation, press Enter and proceed to the "Installing Online Documentation" section.

- If you do not want to install online documentation, enter the number 2 at the colon and press Enter. A screen displays indicating that documentation install is complete. Press Enter. You are prompted to examine the README file. Xilinx recommends that you read this file. Press Enter again.

  After you look at the README file, press Enter. Set up your Xilinx environment variables and paths as indicated.

Installing Online Documentation

This section explains how to install the online documentation onto your system.

Note: If you have installed the Xilinx core tools at some earlier time and did not install the online documentation, see the "Installing Online Documentation (Standalone)" section for instructions on how to install online documentation.

This section assumes one of the following:

- You have just installed the Xilinx core software from the Core Technology CD as described in the "Installing the Core Tools Software" section and have not chosen to install the CAE interface libraries.

- You have just installed the Xilinx core software from the Core Technology CD as described in the "Installing the Core Tools Software" section and have also installed the CAE interface libraries.

The following screen should display:

```
Please unmount and eject the current CD.
Insert the XILINX Documentation CD
into the drive and mount it onto the same path.

Press Enter to continue
```

1. Open another shell and unmount the current CD using the umount command. Here is an example for a CD-ROM mounted at /cdrom:

Note: You do not need to use the umount command for the Solaris platform.

```
/etc/umount /cdrom
```

If the above command does not work, use the following command.

```
/etc/umount /dev/dsk/device_name /cdrom
```

where *device_name* indicates the name of the CD-ROM device.

2. Eject the CD using the eject command:

```
eject
```

3. Remove the current CD from the CD-ROM drive.

4. Insert the online documentation CD into the caddy and mount the CD-ROM drive onto the same path that the Core Technology CD was mounted. See Step 5b in the "Installing the Core Tools Software" section for details.

5. Press Enter. When the online books display, follow the instructions to deselect or select books from the list. If you install any online books onto your drive, you must also install the core online book files.

Note: When you install the core software tools, the DynaText browser is also installed. The browser that resides on the online documentation CD is provided so that you can view online documents from the CD.

You do not have to install the DynaText browser on your system if you are planning to use the browser on the CD-ROM to read online documentation or if you have installed core tools. For more information, see the "Installing Online Documentation (Standalone)" section.

6. After you have finished, type N and press Enter.

When you have selected the online documents that you want installed, the core online book files, and the browser, a screen appears that summarizes the choices that you have made. Following is a sample:

```
Install has enough information to start copying online
books. If you want to review or change any settings,
enter 'B'. If you are satisfied with the settings,
enter 'N' to begin copying files.

Products
```

```
Dynatext Browser

Core online book files

Development System Reference Guide
```
B)ack [N])ext C)ancel :

7. When you have finished selecting books, press Enter to begin installing the Xilinx online documentation. After installation is complete, press Enter to continue. The following screen displays:

```
The installation is complete. For a complete
installation log, look at install.log in the directory
where the products were installed.
```

```
The README file contains important information about
changes to the software that are not in the
documentation.
```

[X] 1. Yes, let me view the README file now

[N])ext C)ancel or list of number:

Xilinx recommends that you read the README file. Press Enter.

After you read the README file, press Enter. The following messages display.

Finished XILINX install at Tue 17/11/96, 13:5:36

The following environment variables need to be set:

setenv XILINX *full_path_to_Xilinx_core_software_tools*

setenv XILINX_CD *full_path_to_CDROM*

setenv LM_LICENSE_FILE *location_of_license.dat_file*

setenv XKEYSYMDB $XILINX/bin/*platform*/XKeysymDB

setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:$XILINX/ bin/*platform*:$XILINX_CD/bin/*platform*

setenv EBTRC $XILINX/bin/*platform*/ebtrc_cd

set path = ($XILINX/bin/*platform* $XILINX_CD/bin/ *platform* $path)

Viewlogic environment variables

setenv WDIR $XILINX/viewlog/data/logiblox/standard:

Mentor Graphics environment variables

setenv LCA $XILINX/mentor/data

set path = ($XILINX/mentor/bin/*platform* $path)

```
# Synopsys environment variables

set path = ($XILINX/synopsys/bin/platform $path)
```

For your convenience the file "setup" has been created for you that contains these settings. This file can be found in the destination directory.

For a complete installation log, look at prerelinstall.log in the destination directory.

where *platform* is **sol** (Solaris), **sun** (SunOS), or **hp** (Hewlett-Packard)

The XKEYSYMDB and EBTRC variables may display differently depending on whether the core tools software or DynaText browser is installed. If either of these software packages have been installed, the variables display as follows:

```
setenv XKEYSYMDB $XILINX/bin/platform/XKeysymDB

setenv EBTRC $XILINX/bin/platform/ebtrc_cd
```

If these packages have not been installed, the variables display thusly:

```
setenv XKEYSYMDB $XILINX_CD/bin/platform/XKeysymDB

setenv EBTRC $XILINX_CD/bin/platform/ebtrc_cd
```

8. Set up the environment variables and paths as indicated.

The SHLIB_PATH environment variable is set up for the HP platform instead of LD_LIBRARY_PATH.

9. After the installation is complete for this CD-ROM, remove it from the caddy.

Standalone Installations

The following subsections explain how to perform standalone installations for CAE Interface Libraries and online documentation.

Installing CAE Interface Libraries (Standalone)

This section explains how to install the CAE interface libraries if you have installed Xilinx core tools software but did not install the libraries. This procedure may also be used if you wish to add libraries that you did not install previously.

1. Place the Alliance CD-ROM labeled CAE Libraries in a caddy and insert the caddy into the drive.

2. If necessary, create a mount point for the CD-ROM drive and mount the drive as described in the "Installing the Core Tools Software" section.

3. At the UNIX prompt, enter **/cdrom/install**. The Welcome screen displays.

Note: For the Solaris platform, enter **/cdrom/cdrom0/install**.

4. Press Enter to continue the installation. A screen displays prompting you choose a Typical Installation or Run from CD or Network.

   - If you want to perform a typical installation, press Enter and proceed to the "Typical Installation (CAE Libraries)" section. This installation choice installs the Xilinx CAE interface libraries from your local CD-ROM drive onto your system.

   - If do not want to install the CAE interface libraries but want to access them from the CD-ROM or network, proceed to the "Run from CD-ROM or Network (CAE Libraries)" section.

Typical Installation (CAE Libraries)

After you select Typical Installation, a screen displays indicating from which directory the CAE interface libraries are installed.

```
Install will copy files from the directory entered
below.

Source Directory: CDROM_directory

M)odify B)ack [N])ext C)ancel ?
```

1. Press Enter to install from the default source directory, the CD-ROM directory. The following screen displays:

```
Install will copy files to the directory entered
below.

Destination Directory:
```

2. Enter a destination directory in which to install the CAE interface libraries. This directory must be the same directory in which you installed the Xilinx software core tools.

Note: If the destination directory does not exist, a prompt displays asking if you want to create the new directory. If you enter the incorrect directory, select M and then enter the correct one.
You can use the tilde (~) to represent your home directory. That is, ~ represents /home/*username.*

3. After you enter the destination directory, a prompt displays asking you to enter your platform type. The default should display your platform. If not, type the correct number and press Enter. Then press Enter again.

4. When the CAE interface libraries display, follow the instructions to deselect or select libraries from the list. After you have finished, type N and press Enter.

    After you have selected the libraries, you are prompted to select device families for installation.

5. Follow the instructions to deselect or select device families. After you have finished, type N and press Enter.

    When you have selected the families that you want to install, a screen appears that summarizes the choices that you have made. Following is a sample:

```
Setup has enough information to start copying XILINX
files. If you want to review or change any settings,
enter 'B'. If you are satisfied with the settings,
enter 'N' to begin copying files.
Products

    Mentor

    Synopsys

    Viewlogic

Families

    xc4000E

Source Directory

   CDROM_directory

Destination Directory

    full_path_to_Xilinx_core_tools_software

Platform

    platform_name

B)ack [N])ext C)ancel :
```

6. Press Enter to begin installing the libraries and families. Messages display indicating that the libraries are being installed.

7. Press Enter. A screen displays prompting you to read the README file. Xilinx recommends that you look at this file before continuing. Press Enter and read the file.

8. When you have finished reading the file, press Enter. Messages display indicating that you need set up environment variables and set your path. Set up your environment using the file named setup. Environment variables are also described in the "Setting Up the Xilinx Environment on Workstations" section.

Run from CD-ROM or Network (CAE Libraries)

This subsection assumes that you have completed Steps 1 through 4 in the "Installing CAE Interface Libraries (Standalone)" section. The following screen should be displayed:

```
Select the type of installation you would like
performed by entering the number next to the menu
option.

[X]  1. Typical Installation

[ ]  2. Run from CD or Network

B)ack [N])ext C)ancel or number:
```

Note: For Cadence, the VAN compiler does not run if you are running from the CD ROM. Xilinx recommends to not run Cadence from the CD.

1. Type the number 2 at the prompt and press Enter. Then press Enter again.

2. After you select Run from CD or Network, a screen displays indicating from which directory the CAE interface libraries are accessed.

```
Set up to run from the CD or network directory entered
below.

Source Directory: CDROM_or_Network_directory

M)odify B)ack [N])ext C)ancel ?
```

3. Press Enter to run from the default source directory, the CD-ROM directory. This directory should be the location of the CD-ROM or

a network. To run from a different CD-ROM drive or a network, select M and press Enter. The following screen displays:

```
Set up to run from the CD or network directory entered
below.
```

Source Directory: *CDROM_Directory*

4. Type the full path name of the CD-ROM or network directory and press Enter.

5. Press Enter to install from the default source directory, the CD-ROM directory. The following screen displays:

```
The installation log and setup file will be written to
the directory entered below.
```

Destination Directory:

6. Enter a destination directory in which to install the Xilinx software core tools. The destination directory displays. Press Enter.

Note: If the destination directory does not exist, a prompt displays asking if you want to create the new directory. Also if you entered the incorrect directory, enter M and then reenter the correct name. You can use the tilde (~) to represent your home directory. That is, ~ represents /home/*username.*

7. After you select the destination directory, a prompt displays asking you to enter your platform type.

   If your platform is already selected, press Enter. Otherwise, enter the menu number option for your platform at the colon (:) prompt. The screen reappears with your selection. Press Enter.

8. When you have selected your platform, a screen appears that summarizes the choices that you have made. Following is a sample:

```
Setup has enough information to start copying XILINX
files. If you want to review or change any settings,
enter 'B'. If you are satisfied with the settings,
enter 'N' to begin copying files.
```

Products

    Run from CD or Network

Families

Source Directory

    CDROM_directory

```
Destination Directory
```

   full_path_to_Xilinx_core_tools_software

```
Platform
```

   platform_name

```
B)ack [N])ext C)ancel :
```

9. Press Enter. You are prompted to read the README file. Xilinx recommends that you read this file. Press Enter.

10. After you read the README file, press Enter to continue. The following message displays:.

```
The following environment variables need to be set:
```

setenv XILINX *full_path_to_Xilinx_core_tools_software*

setenv XILINX_CD *CDROM_directory*

setenv XKEYSYMDB $XILINX/bin/*platform*/XKeysymDB

setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:$XILINX/ bin/*platform*:$XILINX_CD/bin/*platform*

setenv EBTRC $XILINX/bin/*platform*/ebtrc_cd

set path = ($XILINX/bin/*platform* $XILINX_CD/bin/ *platform* $path)

```
# Viewlogic environment variables
```

setenv WDIR $XILINX/viewlog/data/logiblox/standard:

```
# Mentor Graphics environment variables
```

```
setenv LCA $XILINX/mentor/data
```

set path = ($XILINX/mentor/bin/*platform* $path)

```
# Synopsys environment variables
```

set path = ($XILINX/synopsys/bin/*platform* $path)

```
For your convenience the file "setup" has been created
for you that contains these settings. This file can be
found in the destination directory.
```

```
For a complete installation log, look at
caeinstall.log in the destination directory.
```

where *platform* is **sun** for SunOS, **sol** for Solaris, or **hp** for Hewlett-Packard.

The XKEYSYMDB and EBTRC variables may display differently depending on whether the core tools software or DynaText browser is installed. If either of these software packages have been installed, the variables display as follows:

```
setenv XKEYSYMDB $XILINX/bin/platform/XKeysymDB

setenv EBTRC $XILINX/bin/platform/ebtrc_cd
```

If these packages have not been installed, the variables display thusly:

```
setenv XKEYSYMDB $XILINX_CD/bin/platform/XKeysymDB

setenv EBTRC $XILINX_CD/bin/platform/ebtrc_cd
```

11. Set up the Xilinx variables as indicated. Use the setup file to set up environment variables and paths.

Note: The SHLIB_PATH environment variable is set up for the HP platform instead of LD_LIBRARY_PATH.

Installing Online Documentation (Standalone)

This section explains how to install the Xilinx online documentation and core online book files. The section also describes how to access the online documentation from a CD-ROM or network.

1. Place the Alliance CD-ROM labeled Documentation in a caddy and insert the caddy into the drive.

2. If necessary, create a mount point for the CD-ROM drive and mount the drive as described in the "Installing the Core Tools Software" section.

3. At the UNIX prompt, enter **/cdrom/install**. The Welcome screen displays.

Note: For the Solaris platform, enter **/cdrom/cdrom0/install**.

4. Press Enter to continue the installation. A screen displays prompting you to select a Typical Installation or Run from CD or Network.

   • If you want to perform a typical installation, press Enter and proceed to the "Typical Installation (Online Documentation)" section. This installation choice installs the Xilinx online documentation from your local CD-ROM drive onto your system.

- If do not want to install the online documentation but want to read the documentation from the CD-ROM or network, proceed to the "Run from CD-ROM or Network (Online Documentation)" section.

Typical Installation (Online Documentation)

After you select Typical Installation, a screen displays indicating from which directory the online documentation is installed.

```
Install will copy files from the directory entered
below.

Source Directory: CDROM_directory

M)odify B)ack [N])ext C)ancel ?
```

1. Press Enter to install from the default source directory, the CD-ROM directory. The following screen displays:

```
Install will copy files to the directory entered
below. This must be the same directory that you
installed the Xilinx software in.

Destination Directory:
```

2. Enter a destination directory in which to install the online documentation. This directory must be the same directory in which you installed the Xilinx software core tools.

Note: If the destination directory does not exist, a prompt displays asking if you want to create the new directory. If you enter the incorrect directory, select M and then enter the correct one. You can use the tilde (~) to represent your home directory. That is, ~ represents / home/*username*.

3. After you select the destination directory, a prompt displays asking you to enter your platform type. The default should display your platform. If your platform is already selected, press Enter. Otherwise, enter the menu number option for your platform at the colon (:) prompt. The screen reappears with your selection. Press Enter.

4. When the online books display, follow the instructions to deselect or select books from the list. If you install any online books onto your drive, you must also install the core online book files.

Note: If you have installed the core software tools, the DynaText browser has already been installed. The browser that resides on the online documentation CD is provided so that you can also view online documents from the CD.

Note: Even if you have installed the DynaText browser from a previous software release, you must install the new full-text browser. If you do not install the new browser, you may not be able to read the latest versions of the Xilinx online documents.

After you have finished, type N and press Enter.

When you have selected the online documents that you want installed, the core online book files, and the browser, a screen appears that summarizes the choices that you have made. Following is a sample:

```
Start Installation

------------------

Install has enough information to start copying the
online books. If you want to review or change any
settings, enter 'B'.
Source Directory
    /build/baus1/cd_images/x1_3.7/docs
Destination Directory
    /home/kcase/xilinx
Platform
    SunOS
Listed below is the set of books which you have
currently selected to install.  Type 'N' to continue.
B)ack [N])ext C)ancel:
```

5. Press Enter to begin installing the Xilinx online documentation. When installation is complete, press Enter again. A message displays asking you to read the README file. Xilinx recommends that you read the Readme file. Press Enter.

6. When you have finished the README file, press Enter. Messages display instructing you to set up Xilinx environment variables and paths. Following is a sample display.

The following environment variables need to be set:

setenv XILINX *full_path_to_Xilinx_core_tools_software*

setenv XILINX_CD *CDROM_directory*

setenv XKEYSYMDB $XILINX/bin/*platform*/XKeysymDB

setenv LD_LIBRARY_PATH ${LD_LIBRARY_PATH}:$XILINX/
bin/*platform*:$XILINX_CD/bin/*platform*

setenv EBTRC $XILINX/bin/*platform*/ebtrc_cd

set path = ($XILINX/bin/*platform* $XILINX_CD/bin/
platform $path)

Viewlogic environment variables

setenv WDIR $XILINX/viewlog/data/logiblox/standard:

Mentor Graphics environment variables

setenv LCA $XILINX/mentor/data

set path = ($XILINX/mentor/bin/*platform* $path)

Synopsys environment variables

set path = ($XILINX/synopsys/bin/*platform* $path)

For your convenience the file "setup" has been created for you that contains these settings. This file can be found in the destination directory.

For a complete installation log, look at docinstall.log in the destination directory.

where *platform* is **sun** for SunOS, **sol** for Solaris, or **hp** for Hewlett-Packard.

The XKEYSYMDB and EBTRC variables may display differently depending on whether the core tools software or DynaText browser is installed. If either of these software packages have been installed, the variables display as follows:

setenv XKEYSYMDB $XILINX/bin/*platform*/XKeysymDB

setenv EBTRC $XILINX/bin/*platform*/ebtrc_cd

If these packages have not been installed, the variables display thusly:

setenv XKEYSYMDB $XILINX_CD/bin/*platform*/XKeysymDB

setenv EBTRC $XILINX_CD/bin/*platform*/ebtrc_cd

7. Set up your environment variables as indicated. These variables are also discussed in the "Setting Up the DynaText Browser" section.

Run from CD-ROM or Network (Online Documentation)

This subsection assumes that you have completed Steps 1 through 4 in the "Installing Online Documentation (Standalone)" section, which access the following screen display:

```
Select the type of installation you would like
performed by entering the number next to the menu
option.

[X]  1. Typical Installation

[ ]  2. Run from CD or Network

B)ack [N])ext C)ancel or number:
```

1. Type the number 2 at the prompt and press Enter.

   After you select Run from CD or Network, a screen displays indicating from which directory the online documentation is accessed.

   ```
   Set up to run from the CD or network directory entered
   below.

   Source Directory: CDROM_directory

   M)odify B)ack [N])ext C)ancel ?
   ```

2. Press Enter to run from the default source directory, which is the CD-ROM directory. To run from a different directory, select M and press Enter. The following screen displays:

   ```
   Set up to run from the CD or network directory entered
   below.

   Source Directory:
   ```

3. Type the full path name of the CD-ROM or network directory and press Enter.

4. Press Enter to install from the default source directory, the CD-ROM directory. The following screen displays:

   ```
   Install will copy files to the directory entered
   below.
   ```

```
Destination Directory:
```

5. Enter a destination directory in which to install the Xilinx software core tools. The destination directory displays. Press Enter.

    Note: If the destination directory does not exist, a prompt displays asking if you want to create the new directory. Also if you entered the incorrect directory, enter M and then reenter the correct name. You can use the tilde (~) to represent your home directory. That is, ~ represents /home/*username*.

6. After you select the destination directory, a prompt displays asking you to enter your platform type.

    If your platform is already selected, press Enter. Otherwise, enter the menu number option for your platform at the colon (:) prompt. The screen reappears with your selection. Press Enter.

7. When you have selected your platform, a screen appears that summarizes the choices that you have made. Following is a sample:

    ```
    Install has enough information to start copying XILINX
    files. If you want to review or change any settings,
    enter 'B'. If you are satisfied with the settings,
    enter 'N' to begin copying files.

    Source Directory
    ```
    CDROM_directory
    ```
    Destination Directory
    ```
    full_path_to_Xilinx_core_tools_software
    ```
    Listed below is the set of books which you have
    currently selected to install.  Type 'N' to continue.

    Platform
    ```
    platform_name
    ```
    B)ack [N])ext C)ancel :
    ```

8. Press Enter. A message displays requesting that you read the README file. Xilinx recommends that you read this file. Press Enter.

9. After you have finished reading the file, press Enter. Messages display indicating environment variables and paths that need to be set up.

The XKEYSYMDB and EBTRC variables may display differently depending on whether the core tools software or DynaText browser is installed. If either of these software packages have been installed, the variables display as follows:

```
setenv XKEYSYMDB $XILINX/bin/platform/XKeysymDB

setenv EBTRC $XILINX/bin/platform/ebtrc_cd
```

If these packages have not been installed, the variables display thusly:

```
setenv XKEYSYMDB $XILINX_CD/bin/platform/XKeysymDB

setenv EBTRC $XILINX_CD/bin/platform/ebtrc_cd
```

10. Set up the Xilinx variables as indicated. You can also access the online documentation by sourcing the setup file and then entering the dtext command.

Setting Up the Xilinx Environment on Workstations

The following explains how to set up your system to run the software.

1. Define the XILINX environment variable and set it to the name of the directory into which you installed the software. For example, if you installed the software in /xilinx, you would enter:

```
setenv XILINX /xilinx
```

2. Add the $XILINX/bin/*platform* directory to your path.

   The *platform* is **sun** for SunOS 4.1.3 or SunOS 4.1.4, **sol** for Solaris 5.4 or 5.5, **hp** for HP.

   To set your path for SunOS or Solaris, use the following command.

   set path = ($XILINX/bin/*platform*** $path)**

3. If you want to access software from the CD-ROM, set up the your system as follows:

   setenv XILINX_CD *Path_to_CDROM*

set path = ($XILINX/bin/*platform*** $XILINX_CD/bin/***platform*** $path**

4. If you are using the Motif version of DynaText or the EPIC editor, you must set an environment variable to access the set of Key bindings used by a Motif application.

You will find a XKeysymDB file has been installed into your $XILINX/bin/*platform* directory by the Xilinx install. You must do the following to access this file:

For csh:

setenv XKEYSYMDB $XILINX/bin/*platform***/XKeysymDB**

For sh:

set XKEYSYMDB=$XILINX/bin/*platform***/XKeysymDB**

Failure to set up this environment variable will result in the following types of messages being displayed when you attempt to start up the DynaText viewer. The listed keys are not usable:

```
Warning: translation table syntax error: Unknown
keysym name: osfActivate
```

```
Warning: ... found while parsing ':
<Key>osfActivate:ManagerParentActivate()fDown
```

5. To use the Design Manager and Design Editor, you must also run an X Windows display manager (that is, not a SunView display), and you must include a DISPLAY environment variable. Define DISPLAY as the name of your display. DISPLAY is "unix:0.0" normally.

Note: Various X servers have slightly different requirements, but usually you can use either of the following settings if you are running software on the machine whose monitor you are using:

```
setenv DISPLAY :0.0
setenv DISPLAY unix:0.0
```

6. If you are logged onto a remote machine, use this DISPLAY setting:

setenv DISPLAY *mynode***:0.0**

where *mynode* is the name of the system whose monitor you use.

You will also need to execute the following command to allow a remote machine to display graphics on your screen:

xhost + *hostname*

The *hostname* is the name of the remote machine you are allowing to write to your display. If you do not specify the host name and you type only xhost +, any host on your network can write to your display screen.

For example, the following syntax allows you to run the software on the host named bigben and to display the graphics on the local monitor of the machine called mynode.

```
setenv DISPLAY mynode:0.0
xhost +  bigben
```

7. Proceed as follows:

    -   If you are running SunOS or Solaris, then you need to set up the LD_LIBRARY_PATH variable. Proceed to Step 8.

    -   If you are running software on an HP workstation, then you need to set up the SHLIB_PATH variable. Proceed to Step 9.

8. Set the LD_LIBRARY_PATH for SunOS or Solaris.

    -   If LD_LIBRARY _PATH has already been set, enter the following command.

setenv LD_LIBRARY_PATH ${XILINX}/bin/***platform***:${LD_LIBRARY_PATH}

    -   If LD_LIBRARY _PATH has not been previously set, enter the following command.

    setenv LD_LIBRARY_PATH ${XILINX}/bin/*platform*

9. Proceed as follows to set up the SHLIB_PATH variable.

    Set the SHLIB_PATH variable for HP workstations.

setenv SHLIB_PATH ${XILINX}/bin/hp:lib:/usr/lib

Viewlogic Interface

Update your .cshrc or .login file by modifying the WDIR environment variable. You should already have a WDIR environment variable defined for the Powerview software; you only need to add a path to that variable.

1. Ensure you have set up your XILINX environment variable and path according to Steps 1 and 2 as described previously at the beginning of the "Setting Up the Xilinx Environment on Workstations" section.

2. To integrate LogiBLOX with Powerview, a directory must be added to your existing WDIR environment variable, as follows:

setenv WDIR $XILINX/viewlog/data/logiblox/standard:*usual_WDIR_paths*

where *usual_WDIR_paths* are the paths you have already set up for Viewlogic.

The Xilinx directory $XILINX/viewlog/data/logiblox/standard is added to the WDIR variable so Viewdraw can locate the Viewscript customizations for LogiBLOX.

This directory can be anywhere in the WDIR search path, provided that the Xilinx directory is the first (or only) one that contains the file "vdrawus.vs".

The vdrawus.vs file contains user customizations to Viewdraw.

If you have other customizations in a vdrawus.vs file elsewhere in your WDIR search path, you can merge the Xilinx customizations into your existing vdrawus.vs file. Simply add the following line to the end of that file:

```
load( "logiblox.vs" );
```

3. To find out how to set up your project libraries, refer to the "Powerview" section of the "Getting Started" chapter in the *Viewlogic Interface/Tutorial Guide.*

Mentor Graphics Interface

Configure your .cshrc or .login file by updating them with the XILINX, LCA, and other environment variables specific to Mentor Graphics.

1. Add the following line to set the LCA environment variable:

```
setenv LCA $XILINX/mentor/data
```

where $XILINX points to xilinx_dir_path.

2. Set up the SIMPRIMS variable as follows:

```
setenv SIMPRIMS $LCA/simprims
```

3. Set the MGLS_LICENSE_FILE environment variable to point to the directory where your license is located.

```
setenv MGLS_LICENSE_FILE /mentor_license_path/mentor_license_file
```

4. Ensure that your Mentor Graphics variables are set up.

   • The optional MGC_GENLIB variable that points to the Mentor generic library.

   • The MGC_HOME environment variable that points to where you installed the Mentor Graphics software.

- The MGC_LOCATION_MAP environment variable that points to the location of your mgc_location_map file.

Note: The MGC_WD environment variables are ignored. Reset this variable every time you change design directories

5. Add the Mentor libraries to the LD_LIBRARY_PATH as follows:

```
setenv LD_LIBRARY_PATH mentor_path/lib:mentor_path/shared/lib:openwin_path/ \
lib:${LD_LIBRARY_PATH}
```

Note: The previous two lines are actually a single command. The backslash (\) at the end of the first line is a continuation character indicating that the command wraps to a second line.

where *mentor_path* is $MGC_HOME and *openwin_path* is the location of Openwin.

6. Add $XILINX/mentor/bin/*platform* to your path definition.

```
set path = ($XILINX/bin/platform $XILINX/mentor/bin/platform $path)
```

The following example illustrates how to configure your .login or .cshrc file for use with the Mentor Graphics interface. This example assumes you installed the core software in /xilinx and the Mentor Graphics interface software under $XILINX/mentor/data and $XILINX/mentor/bin/sol.

```
setenv XILINX /xilinx

setenv LCA $XILINX/mentor/data

setenv SIMPRIMS $LCA/simprims

setenv MGC_GENLIB mentor_path/gen_lib

setenv MGC_HOME /tools/mentor/idea8.4

setenv LD_LIBRARY_PATH ${MGC_HOME}/lib:${MGC_HOME}/shared/lib: \
openwin_path lib:$XILINX/bin/sol:${LD_LIBRARY_PATH}

setenv MGLS_LICENSE_FILE mentor_license_path/mentor_license_file

setenv MGC_LOCATION_MAP /xilinx/project/mgc_location_map

set path = ($XILINX/mentor/bin/cpu_type ${MGC_HOME}/bin/xilinx/bin \
/sol $path)
```

Synopsys Interface

Verify that your .cshrc or setup file contains the following.

Note: $XILINX is the directory for all Xilinx software. $SYNOPSYS is the directory for the Synopsys software.

```
setenv XILINX location_of_Xilinx_software

setenv SYNOPSYS location_of_Synopsys_software

set path=($SYNOPSYS/sparc/syn/bin \
        $SYNOPSYS/sparc/sim/bin \
        $XILINX/bin/platform \
        $XILINX/synopsys/bin/platform $path)
```

If you use VSS, you may need to maintain two installation directories. One directory includes the FPGA Compiler and VSS 3.4b; the other directory includes VSS 3.4b-VITAL. If you want to use both versions of VSS, you must switch your environment settings between these two directories.

Dual environment settings are not necessary when using Synopsys V3.5. VSS V3.5 combines VITAL support and support for other library formats in the same simulator package.

Cadence Interface

For details about setting up your Cadence environment, refer to the "Getting Started" chapter in the *Cadence Interface/Tutorial Guide*.

DynaText Interface

See the "Setting Up the DynaText Browser" section for details.

Compiling Verilog/VHDL Libraries for Mentor QuickHDL

A System Administrator should perform the following procedure when 1) a new release of Xilinx software is installed for Mentor Graphics users, or 2) Mentor software requires recompilation by another version of QuickHDL patch to remain compatible.

The procedure can be performed either manually or by executing the script files, compile_vhdl_libs.sh and compile_verilog_libs.sh.

These scripts are located under $XILINX/mentor/data/vhdl and $XILINX/mentor/data/verilog respectively. Please refer to the README files under these directories.

To perform the procedure manually:

1. Ensure that you have set up the $XILINX environment variable as described in the "Setting Up the Xilinx Environment on Work-stations" section and the $MGC_HOME variable as described in the "Mentor Graphics Interface" section. Also ensure that you add $MGC_HOME to your path (set path=(${MGC_HOME}/bin $path).

2. Change directories into a customer-selected QuickHDL VHDL library setup area. (It is recommended that this area be *$XILINX/mentor/data/vhdl*)

3. Enter the following commands to set up the Xilinx LogiBLOX VHDL library.

```
qhlib logiblox

qhmap logiblox logiblox

qvhcom   -work logiblox $XILINX/vhdl/src/logiblox/mvlutil.vhd

qvhcom   -work logiblox $XILINX/vhdl/src/logiblox/mvlarith.vhd

qvhcom   -work logiblox $XILINX/vhdl/src/logiblox/logiblox.vhd
```

4. Enter the following commands to set up the Xilinx SIMPRIM VHDL library.

```
qhlib simprim

qhmap simprim simprim

qvhcom   -work simprim $XILINX/vhdl/src/simprims/simprim_Vpackage.vhd

qvhcom   -work simprim $XILINX/vhdl/src/simprims/simprim_Vcomponents.vhd

qvhcom   -work simprim $XILINX/vhdl/src/simprims/simprim_VITAL.vhd
```

5. Change directories into a customer-selected QuickHDL Verilog library setup area. (It is recommended that this area be *$XILINX/mentor/data/verilog*)

6. Enter the following commands to set up the Xilinx SIMPRIM Verilog library.

```
cat $XILINX/verilog/data/*.vmd >> simprims.vmd
```

```
qhlib simprim

qhmap simprim simprim

qvlcom  -work simprim simprims.vmd
```

Setting Up the DynaText Browser

When you install the Xilinx software core executables from the CD-ROM, the DynaText browser, an Electronic Book Technologies, Inc. product, is automatically installed on your system. You must use this browser to display any Xilinx online document. The DynaText online documentation is installed in the $XILINX/data/dtext directory. The browser for each platform is also installed in the sun, sol, and hp directories in $XILINX/bin.

Note: Even if you have installed the DynaText browser from a previous software release, you must install the new full-text browser. If you do not install the new browser, you may not be able to read the latest versions of the Xilinx online documents.

If you are operating the browser from a workstation, read the following files before using it.

copyright.txt	The copyright protection notice
readme.txt	This document explains DynaText limitations with various platforms and describes hardware and software system requirements.
relnotes.ps	The release notes describe new DynaText features and enhancements. The notes also describe the system requirements for various platforms.

These three files are located in the $XILINX/data/dtext directory.

Motif Users

If you are using Motif 1.2.2, you need to read section 1.3.2 of the readme.txt file of the DynaText release notes. However, this section, located in the $XILINX/data/dtext and $XILINX_CD/data/dtext directories, references an incorrect location for the Dtext apps default file. In section 1.3.2, the reference occurs in the following sentence:

"In the Dtext apps default file (data/X11/defaults/dtext), add the following resource:

dtext.motif122bug: TRUE
*whichButton: 5"

The sentence should read as follows:

"In the Dtext apps default file (data/dtext/data/X11/C/Dtext), add the following resource:

dtext.motif122bug: TRUE
*whichButton: 5"

If you have the $LANG variable set, the sentence should read as follows:

"In the Dtext apps default file (data/dtext/data/X11/$LANG/Dtext), add the following resource:

dtext.motif122bug: TRUE
*whichButton: 5"

System Requirements

Ensure that your system meets the following requirements.

- ICCM-compliant windows manager (for example, twm, mwm, olwm)

- Release 4.0 or later of an X server for optimal performance

- X11R5-compatible versions of Motif or OLIT, XT, and X11

Refer to the release notes for detailed information on X library requirements.

Setting Up the DynaText Environment

The ebtrc file sets up the DynaText environment. The HP platform requires different entries in the ebtrc file than the SunOS and Solaris platforms. Xilinx has created the required ebtrc file for the platforms. These three ebtrc files are located in $XILINX/bin/sun, $XILINX/bin/sol, and $XILINX/bin/hp.

If you did not set up your system to use one of these files during installation, you need to do so. There are two methods for setting up your environment to use the appropriate file:

- Copy the ebtrc file for your platform to $HOME from $XILINX/ bin/*platform* for each user. Rename the file as .ebtrc. Following is an example using the EBTRC file for Solaris.

  cd $HOME

  cp $XILINX/bin/sol/ebtrc ./.ebtrc

  OR

- Set up the environment variable EBTRC in the .cshrc file to point to the ebtrc file for your platform for each user. Following is an example for setting up the environment for Solaris.

  setenv EBTRC $XILINX/bin/sol/ebtrc

  Source the new .cshrc file (**source .cshrc**).

Customizing the ebtrc File

You can customize several DynaText variables by altering the ebtrc file. Following is an example file for SunOS or Solaris:

```
# .ebtrc configuration file
###########################

X_DIR          $XILINX/data/dtext/data/X11
COLLECTION     $XILINX/data/dtext/ebt_books=EBT Books
COLLECTION     $XILINX/doc/usenglish=Xilinx books
COLLECTION     $XILINX_CD/doc/usenglish=Xilinx books CD
COLLECTION     $XILINX/xbbs/userware/answers=Answers
COLLECTION     $XILINX_CD/xbbs/userware/answers-Answers on CD
DATA_DIR       $XILINX/data/dtext/data
DTEXT_AUTH     $XILINX/data/dtext/data/security/full_bro
PUBLIC_DIR     ~/tmp/ebtpub
PRIVATE_DIR    ~/tmp/ebtpriv

#! /bin/csh -f
```

Following is a description of required variables.

X_DIR	Set to the directory where the DynaText X defaults and fonts are located. ($XILINX/data/dtext/data/X11). For HP platforms, this directory should be Xhp instead of X11.
COLLECTION	Set to the directory or directories where the Xilinx and DynaText books are located. The name as it appears in the DynaText Library window is set by using the equal sign followed by the book name.
DATA_DIR	Set to the location of the EBT data files ($XILINX/data/dtext/data).
DTEXT_AUTH	This variable is set to the authorization key.
PUBLIC_DIR	Sets up public annotations. The default is ~tmp/ebtpub.
PRIVATE_DIR	Sets up private annotations. The default is ~tmp/ebtpriv.

If you want just want to view the Xilinx online documentation on the CD, set the EBTRC environment variable to the following path:

setenv EBTRC $XILINX_CD/bin/*platform***/ebtrc_cd**

The variable $XILINX_CD defines the path to the CD-ROM or network where the Xilinx online documents are located. Following is the ebtrc_cd file for Sun and Solaris.

```
# ebtrc_cd configuration file
############################

   X_DIR           $XILINX_CD/data/dtext/data/X11
   COLLECTION      $XILINX_CD/data/dtext/ebt_books=EBT Books
   COLLECTION      $XILINX/doc/usenglish=Xilinx Books
   COLLECTION      $XILINX_CD/doc/usenglish=Xilinx books CD
   COLLECTION     $XILINX/xbbs/userware/answers=Answers
   COLLECTION      $XILINX_CD/xbbs/userware/answers=Answers on CD
   DATA_DIR        $XILINX_CD/data/dtext/data
   DTEXT_AUTH      $XILINX_CD/data/dtext/data/security/fullrun
   PUBLIC_DIR      ~/tmp/ebtpub
   PRIVATE_DIR     ~/tmp/ebtpriv

   #! /bin/csh -f
```

Using the XKeysymDB file

You must set an environment variable, XKEYSYMDB, if you are using a Motif version of DynaText. If you have not already set up this variable, see Step 4 of the "Setting Up the Xilinx Environment on Workstations" section for details.

Adding a Printer

To select a printer, click **Options** → **Printer** from the DynaText Library window. A list of printers displays.

To add a printer to the list, add the following line to the $XILINX/data/dtext/data/ps/config.dat file

> *newprinter width height* **lpr -P***newprinter*

The *newprinter* is the name of the printer you want to display in the **Options** → **Printer** pull-down menu.

The *width* is the number of points that fit on the width of a page, for example, 612.

The *height* is the number of points that fit on the length of a page, for example, 792.

The command **lpr -P***newprinter* is the UNIX command line required to print to the printer.

Chapter 6

Installing Alliance on PCs

This chapter describes how to install the Alliance software on PCs.

To control access to the Alliance software, the Xilinx security system software must also be installed. This security system can be installed on networked installations or standalone installations. After completing installation, refer to the "Setting Up Security" chapter for details.

System Requirements

Following are the system requirements for the Alliance software.

Type of PC:

IBM-compatible Pentium class-machine recommended. 486 PC acceptable

Operating System: Windows NT 4.0 and Windows 95

System Memory (RAM) and Swap Space:

While the following table indicates the system requirements for typical designs, the unique characteristics of each individual design will affect the actual system resources required. Using memory, processor and disk monitoring utilities provides designers with an understanding of the exact system resources being utilized during each phase of the design cycle. The operating system adds additional memory overhead, as do any active applications. Some designs can be implemented using less than the specified memory while other complicated or large designs may require additional memory. It is recommended that each designer monitor the system resources being utilized and adjust the systems resources if necessary.

Table 6-1   Windows NT 4.0 and Windows 95 PCs

Xilinx Device	RAM	Virtual Memory
XC4003E/L through XC4008E/L XC4005XL through XC4008XL XC7300 XC9500 (small devices only)	32 MB	32 MB-64 MB
XC4010E/L through XC4025E/L XC4028EX through XC4036EX XC4010XL through XC4028XL XC9500 (medium devices only)	64 MB	64 MB-128 MB
XC4036XL through XC4062XL XC9500 (large devices)	128 MB	128 MB-256 MB
XC4085XL	256 MB	256 MB-512 MB

Note: When virtual memory is running out, the following message displays:

```
System Process - Out of Virtual memory. Your system is
running low on virtual memory. Please Close some
applications. You can then start the system option in
the Control Panel and choose the Virtual Memory button
to create an additional paging file or to increase the
size of your current paging file.
```

You must have Administrator permissions to alter the paging file.

Required Disk Space For Core Technology CD:

	Data	95/NT
Xilinx Core Technology[1]	~12 MB	~33 MB
XC4000[2]	~1.2 MB	~2 MB

XC4000E
  4003E, 4005E, 40006E, 4008E
  4010E, 4013E
  4020E, 4025E
	~30 MB total
	~12 MB
	~7 MB
	~9 MB
		~25 KB
		~25 KB
		~25 KB
		~25 KB

XC4000L[3]
  4005L
  4010L, 4013L
	~2 MB total
	~1 MB
	~1 MB
		~2 KB
		~2 KB
		~2 KB

XC4000EX[4]
  4028EX
  4036EX
	~20 MB total
	~7 MB
	~8 MB
		~10 KB
		~10 KB
		~10 KB

XC4000XL[5]
  4005XL, 4010XL, 4013XL, 4020XL
  4028XL, 4036XL, 4044XL
  4052XL, 4062XL, 4085XL
	~76 MB total
	~19 MB
	~15 MB
	~34 MB
		~2 KB
		~2 KB
		~2 KB
		~2 KB

XC7300	~1 MB	~1 KB
XC9500	~1 MB	~1 KB
Non-numeric XC4000E	~3 MB	~25 KB
Non-numeric XC4000EX	~3 MB	~10 KB

Documentation
  Online Help
  Documentation Browser
  Xilinx Tutorial Files
  Xilinx Training Files
  Xilinx userware
	~52 MB total
	
	~11 MB
	~9 MB
	~28 MB
	~4 MB
		~2 MB

[1] The DynaText browser and its online books are not included. If you install more than one platform, the data directory is only installed once. For example, if you install for SunOS (76 MB) and 95/NT, the total disk space for the core technology is:

data (12 MB) + SunOS (76 MB) + 95/NT (33 MB) = 121 MB

Note: You must run the installation program twice to install two platforms.

[2] Installed once when any number of XC4* software components are installed. For example, if you install the XC4000EX, then all files in the xc4000/data and the xc4000/bin/*platform* directories are also automatically installed even if this software component was not selected as part of the install.

[3] The files not beginning with a numeral in the xc4000e/data directory and the xc4000e/bin/*platform* directory are also installed when the xc4000l is installed.

[4] The files not beginning with a numeral in the xc4000e/data directory and the xc4000e/bin/*platform* directory are also installed when the xc4000ex is installed.

[5] The files not beginning with a numeral in the xc4000e/data and the xc4000/bin/*platform* directories are installed when the xc4000xl is installed. In addition, the files not beginning with a numeral in the xc4000ex/data and the xc4000ex/bin/*platform* directories are also installed when the xc4000xl is installed.

Example 1: Core Technology Installation -- Single 95/NT Platform

Assume that you have installed the 95/NT platform, all the subcomponents for the XC4000XL, and the online help and documentation browser subcomponents.

Disk space requirements are as follows:

Xilinx Core technology = 12 MB (Data) + 33MB (NT) = 45 MB

xc4000xl = 77 MB (Data + 95/NT files)

non-numeric xc4000e/data files + 95/NT = 3 MB

non-numeric xc4000ex/data files + 95/NT = 3 MB

xc4000 = ~1.2 MB (Data) + ~2 MB (95/NT) = 3.2 MB

Online Help (10 MB) + Documentation browser (11 MB) = 21 MB

Total = 45 MB + 77 MB + 3 MB + 3 MB + 3.2 MB + 21MB = 152 MB

Example 2: Core Technology Installation -- Multiple Platforms

Assume that you have installed the Sun and 95/NT platforms, all the subcomponents for the XC4000EX, the XC4010E, XC4013E, and the entire documentation software component on the core technology CD.

Note: You must run the installation program twice to install two platforms.

Disk space requirements are as follows:

Core technology = 12 MB (Data) + 76 MB (Sun) + 33 MB (95/NT) = 121 MB

xc4000ex = 20 MB (Data + 95/NT files)

non-numeric xc4000e/data files + Sun + 95/NT = 3 MB + .5 MB + 25 KB

xc4010e, xc4013e = 7 MB (Data) + 1 MB (Sun + 95/NT) = 8 MB

xc4000 = 1.2 MB (Data) + 2 MB (Sun) + 2 MB (95/NT) = 5.2 MB

Documentation = 52 MB

Total = 121 MB + 20 MB + 3.5 MB + 8 MB + 5.2 MB + 52 MB = 209 MB

Example 3: Core Technology Installation -- Single NT Platform, CPLDS

Assume that you have installed the NT platform, the XC7300, XC9500, the online help, documentation browser, and Tutorial files.

Disk space requirements are as follows:

Core = 12 MB (Data) + 33 MB (NT) = 45 MB

xc7300 = 1 MB (Data + NT files)

xc9500 = 1 MB (Data + NT files)

10 MB (Help) + 11 MB (browser) + 9 MB (tutorial) = 30 MB

Total = 45 MB + 1 MB + 1 MB + 30 MB = 77 MB

Required Disk Space For Documentation CD: ~129 MB total

DynaText Browser: ~11 MB

Core Online book files: ~6 MB

Xilinx Online Documentation: ~ 112 MB total
  CPLD Schematic Design Guide: ~1 MB
  CPLD Synthesis Design Guide: ~2 MB
  Design Manager/Flow Engine Reference/User Guide: ~20 MB
  Development System Reference Guide: ~2 MB
  Development System User Guide: ~2 MB
  EPIC Design Editor Reference/User Guide: ~7 MB
  Hardware Debugger Reference/User Guide: ~8 MB
  Hardware User Guide: ~1 MB
  JTAG Programmer Guide: ~2 MB
  Libraries Guide: ~30 MB
  LogiBLOX Reference/User Guide: ~4 MB
  PROM File Formatter Reference/User Guide: ~4 MB
  Timing Analyzer Reference/User Guide: ~7 MB
  Viewlogic Interface/Tutorial Guide: ~2 2 MB

Directory Permissions:

Write permissions must exist for all directories containing design files to be edited.

Monitor:

Color VGA operating at one of these modes:

Minimum Resolution -- 640 x 480
Minimum Recommended -- 1024 x 768

Mouse:

2-button (Microsoft Windows compatible) or 3-button (Microsoft Windows compatible). On a 3-button mouse, the middle button is not used.

CD-ROM Drive:

ISO9660 drive needed if installing the Alliance Release software from CD-ROM.

Ports:

Two ports (one for a pointing device and one parallel port for the parallel download cable, if needed)

Network Compatibility:

The Xilinx installation program supports TCP-IP networks.

Installing Core Tools Software

This section explains how to install the core tools software on a Windows NT 4.0 and Windows 95 using CD 1. This CD contains Xilinx core tools (Base and Standard).

During installation, changes are made to the Registry. Refer to the "Registry Entries" appendix for details. You can also choose whether you want to set up the XILINX, XILINX_CD, and LM_LICENSE_FILE variables. For Windows NT, these variables are set up in the Registry. For Windows 95, these variables are set up in the autoexec.bat file.

Note: If you have a dual boot system, that is, you can boot either Windows 95 or Windows NT, registry changes are made only for the Window system from which you are installing the Xilinx software.

No items are uninstalled when installing software.

You must have System Administrator permissions to make changes to the Registry when you install the software.

1. Ensure that your system meets the requirements described in the "System Requirements" section.

2. Insert the Core technology CD into your CD-ROM drive. Determine the source drive letter, *drive*, for example, d. Select **Start** → **Run**. Type *drive*:**setup.exe** in the Open field of the Run window and click OK.

Note: The install program allows you to use choose Japanese or English as your install language.

3. Follow the instructions in each of the windows.

Some basic information that you need to install the software is described in the following paragraphs.

*   Your serial number is printed in the lower right hand corner of the barcode label attached to the outside of the shipping package. The serial number is also printed on the registration card in your package.

- Typical Installation

  If you select this option, you will be able to choose from one of four install scenarios: Base Product, Base Product with Viewlogic, Standard Product, and Standard Product with Viewlogic.

Base (CPLD, FPGA devices up to 8,000 gates)

Allows you to choose from the following list of software and devices for install:

- Core Executables
- Shared DLLs

  The shared DLLs are:

  MSVCRT40.DLL

  MFC40.DLL

  MFC40U.DLL

  OLEPRO32.DLL

  MFC40JPN.DLL

  CTL3D32.DLL

  There are two versions, CTL3D95.DLL for Windows 95 and CTL3DNT.DLL for Windows NT. When copied to the System32 directory (Windows NT) or the System directory (Windows 95) from the CD, the file is renamed as CTL3D32.DLL.

  If there are versions of these DLLs already installed on your system, the Xilinx versions are not installed (no overwrite). If you do not have these installed, the Xilinx versions are installed in the System32 or System directory if the Shared DLLs option is selected. These DLLs are also copied to %XILINX%\ bin\nt if Core Executables is selected. The two versions of CTL3D32.DLL (CTL3D95.DLL and CTL3DNT.DLL) are also copied to %XILINX%\bin\nt.

  The shared DLLs are used for Unicode support, a 2-byte method of representing characters.

- XC40003E, XC4005E, XC4006E, XC4008E (Small FPGA Devices)

- XC4005L

- XC4005XL

- XC7300

- XC9500

- Online documentation (5 sub-components)
  Online help
  Documentation browser (DynaText)
  Xilinx tutorial files
  Xilinx training files
  Xilinx userware

Base Product with ViewLogic

Installs the Base Product as described earlier and the Xilinx View-logic software component from the CD. The Viewlogic component contains only the CAE Interface and Libraries. The Viewlogic EDA / schematic tools are not provided. After the Xilinx software is installed, a message displays requesting that you install the Viewlogic software.

Standard (all CPLD, FPGA devices)

Allows you to choose from a list of software and devices for install:

- Core Executables

- Shared DLLs. See the "Base" section for details.

- XC4000E (3 sub-components)
  (XC4003E, XC4005E, XC4006E, XC4008E)
  (XC4010E, XC4013E)
  (XC4020E, XC4025E)

- XC4000L (2 sub-components)
  (XC4005L)
  (XC4010L, XC4013L)

- XC4000EX (2 sub-components)
  (XC4028EX)
  (XC4036EX)

- XC4000XL (3 sub-components)
  (XC4005XL, XC4010XL, XC4013XL, XC4020XL)
  (XC4028XL, XC4036XL, XC4044XL)
  (XC4052XL, XC4062XL, XC4085XL)

- XC7300

- XC9500

- Online documentation (5 sub-components)
  Online help
  Documentation browser (DynaText)
  Xilinx tutorial files
  Xilinx training files
  Xilinx userware

Standard Product with Viewlogic

Installs the Standard Product and the Xilinx Viewlogic software component from the CD.

The Viewlogic component contains only the CAE Interface and Libraries. The Viewlogic EDA/schematic tools are not provided. After the Xilinx software is installed, a message displays requesting that you install the Viewlogic software.

The "Getting Started" chapter in the *Viewlogic Interface/Tutorial Guide* describes how you configure Workview Office to work with the Xilinx software.

- Lab Machine Installation

  Select this option if you are planning only to use your system to download software to a device. If you select this option, a screen displays allowing you to choose the PROM File Formatter, Hardware Debugger, and JTAG CPLD Programmer for install.

- Run from CD or Network

  Select this option if you plan to access the Alliance software from the CD or from the network. The option does not copy any files to your system; it makes changes to your Registry and adds icons to a selected Start menu folder.

- In the Select Software Components to Install window, you must click *on* the check mark to deselect the component. You can reselect a component by clicking the blank space to the left of the document name.

- The LM_LICENSE_FILE environment variable is used by the FLEXlm 5.0 software to control security for the Alliance software release. If you are not currently running FLEXlm software, the installation program will define the variable. Xilinx recommends you accept the default destination directory in the variable, C:\FLEXLM. If your PC already has the LM_LICENSE_FILE variable defined, the installation program will not modify the variable. After completing installation, you need to read the "Setting Up Security" chapter.

- The Environment Settings Options dialog box (Windows 95) or Registry Settings Options dialog box (Windows NT) lets you select default option settings for environment variables, your path, and the Registry. Following is a description of each option.

  a) Set/Update XILINX

     If this option is selected, the XILINX variable is set to point to C:\Xilinx as the default or the directory you selected from the Select Alliance Destination Directory screen display. For Windows NT, the XILINX variable is set in the Registry. For Windows 95, this variable is set in the autoexec.bat file.

     If you selected Run From CD or Network from the Select Type of Installation screen display, then the value of the XILINX variable is set to your selection from the Select Alliance Source Directory screen display.

     You must set the XILINX variable to run the Alliance software.

  b) Set/Update XILINX_CD

     If this option is selected, the XILINX_CD variable is set to point to the directory from which the installation is being run as the default. If you selected Run from CD or Network, the XILINX_CD variable is set to the directory that you choose from the Select Alliance Source Directory screen display. For Windows NT, the XILINX_CD variable is set in the Registry.

For Windows 95, this variable is set in the autoexec.bat file.

Currently, the XILINX_CD variable is used to locate the DynaText online documentation on the CD.

c) Set/Update PATH

If this option is selected, the location of the Xilinx software and the DLLs are added to your PATH. For Windows NT, the PATH variable is set in the Registry. For Windows 95, the PATH is set in the autoexec.bat file.

You must set the XILINX variable to run the Alliance software.

d) Set/Update LM_LICENSE_FILE

If this option is selected, the LM_LICENSE_FILE variable is set to point to C:\FLEXLM\license.dat as the default or set to the value you choose from the Select Location of License Manager screen display. For Windows NT, the LM_LICENSE_FILE variable is set in the Registry. For Windows 95, this variable is set in the autoexec.bat file.

You must have a license.dat file to run the Xilinx software. If you do not set the LM_LICENSE_FILE variable, the license manager looks in the current directory for the license.dat file.

e) Initialize OLE Registry settings

OLE (Object Linking and Embedding) software enhances the transfer of data between programs (for example, between the Design Manager and EPIC editor). Xilinx recommends that you select this option. You can also initialize OLE settings by running the command, **revengine /REGISTER**, at a command line prompt from the $XILINX\bin\nt directory.

f) Initialize Browser Registry settings

These settings must be loaded in the Registry to execute the DynaText browser. See the "Online Documentation" section of the Registry Entries appendix for a list of the registry settings. You can also initialize the browser registry settings by double-clicking the file ebtcom.reg. This file is located in $XILINX\bin\nt.

g) Initialize CPLD driver Registry settings (Windows NT only)

This selection adds registry values to activate the driver so that you can use the download cable for CPLDs. Make sure this option is selected if you are designing with CPLDs.

h) Create environment settings file

The xilinx.cmd file, which is created during installation, contains the settings for the XILINX, XILINX_CD, PATH, and LM_LICENSE_FILE variables. The file is located in $XILINX If necessary, you can double-click on this file to set these variables.

- The install program uses the accessory WORDPAD.EXE to call up the README files that are created on both the Alliance Release and the Documentation CD. This is a program that is installed by default (like NOTEPAD) when the Windows operating system is installed.

- A Xilinx folder containing several icons is added to the Programs folder when installation is complete. If you selected the Typical Installation option or the Run From CD or Network installation option, these icons include Design Manager, DynaText browser, LogiBLOX, and the Readme file. You can access the Xilinx Core Technology via the Design Manager.

If you selected the Lab Machine Installation, the Xilinx folder will contain an icon for each of the tools selected, along with a Readme icon.

Setting Up the Xilinx Environment on PCs

Verify that the following variables are set in your autoexec.bat file for Windows 95 or the Environment tab of System Properties dialog box for Windows NT 4.0. Look under "environment variables" in the Index tab of Window NT Help to access the System Properties dialog box.

The following settings explain how to set up your environment if you have also installed Viewlogic's Workview Office in addition to the Alliance software. It is assumed that you have loaded the software in the c:\wvoffice and c:\xilinx directories on your PC.

If the software has been installed in different areas, modify the following statements accordingly.

- The PATH variable sets the overall executable search path. It must include the directories where the Workview Office and Xilinx Development System software have been installed. The following command illustrates how to set your path in the autoexec.bat file for Windows 95.

  PATH=C:\XILINX\BIN\NT;C:\WVOFFICE;*other_paths*

  For Windows NT 4.0, in the System Properties dialog box, enter the specified text in the Variables and Values fields:

  Variables: **PATH**

  Value: **C:\XILINX\BIN\NT;C:\WVOFFICE;***other_paths*

  Click Set in the System Properties dialog box and then click OK.

Note: The PATH variable cannot include any previous version of either the Xilinx or Viewlogic software. Be sure to remove all paths to older software.

- The XILINX variable is used by the Alliance and Workview Office software to locate data files. It must specify the directory where the Alliance software resides. This variable is automatically set up during installation.

- The WDIR variable sets the data file search path for the Workview Office software.

  For Windows 95, enter the command in the autoexec.bat as follows:

  SET WDIR=C:\WVOFFICE\STANDARD

  For Windows NT 4.0, in the System Properties dialog box, enter the specified text in the Variables and Values fields:

  Variables: **WDIR**

  Value: **C:\WVOFFICE\STANDARD**

  Click Set in the System Properties dialog box and then click OK.

- The LM_LICENSE_FILE variable directs the software to the license files. These files may be placed anywhere as long as this variable points to the license files themselves, not just the directory in which they reside.

The first license file authorizes the Workview Office tools; the other authorizes the Xilinx software tools.

For Windows 95, enter the command in the autoexec.bat as follows:

SET LM_LICENSE_FILE=C:\WVOFFICE\STAN-DARD\LICENSE.DAT,;C:\FLEXlm\LICENSE.DAT

For Windows NT 4.0, in the System Properties dialog box, enter the specified text in the Variables and Values fields:

Variables: **LM_LICENSE_FILE**

Value: **C:\WVOFFICE\STANDARD\LICENSE.DAT,;C:\FLEXlm\LICENSE.DAT**

Click Set in the System Properties dialog box and then click OK.

Note: Because the Workview Office and Xilinx software use different versions of the FLEXlm software, you must specify the Workview Office license file first. This path must be separated from the Xilinx license file by a comma followed by a semicolon.

- The VANTAGE_VSS and VANTAGE_CC variables are used by Speedwave for functional VHDL simulation. These variables are only required for systems with Extended licenses.

  For Windows 95, enter the command in the autoexec.bat as follows:

  SET VANTAGE_VSS=C:\WVOFFICE\V

  SET VANTAGE_CC=C:\WVOFFICE\MSVCNT\BIN\CL

  For Windows NT 4.0, in the System Properties dialog box, enter the specified text in the Variables and Values fields:

  Variables: **VANTAGE_VSs**

  Value: **C:\WVOFFICE\V**

  Click Apply in the System Properties dialog box.

  Variables: **VANTAGE_CC**

  Value: **C:\WVOFFICE\MSVCNT\BIN\CL**

  Click Set in the System Properties dialog box and then click OK.

Installing Online Documentation and the DynaText Browser

This section describes how to install the Xilinx online documentation, and the DynaText browser. This section also explains how to access the online documentation from a CD-ROM or network.

The CD contains the following software:

- Xilinx online manuals

- EBT books

- DynaText browser

During installation, changes are made to the Registry. Refer to the "Registry Entries" appendix for details. You must have System Administrator permissions to make changes to the Registry when you install the software.

Note: Even if you have installed the DynaText browser from a previous software release, you must install the new full-text browser. If you do not install the new browser, you may not be able to read the latest versions of the Xilinx online documents.

Note: If you have a dual boot system, that is, you can boot either Windows 95 or Windows NT, registry changes are made only for the Window system from which you are installing the Xilinx software.

1. Ensure that your system meets the requirements described in the "System Requirements" section.

2. Insert the online documents CD-ROM into your CD-ROM drive. Determine the source drive letter, *drive*, for example, d. Select **Start** → **Run**. Type *drive* **: setup . exe** in the Open field of the Run window and click OK.

Note: The install program allows you to use choose Japanese or English as your install language.

3. Follow the instructions in each of the windows. Some basic information that you need to install the online documentation is described in the following paragraphs.

- Typical Installation

  Select this option to install the Xilinx online documents, the EBT books, the DynaText browser, and the core online book files onto your hard disk drive. You must install the documents in the same directory that you installed the Xilinx core tools software.

  If you installed the browser when installing Alliance core tools software, you do not have to reinstall the browser now.

  If you are performing a Typical Installation of the online documentation or the DynaText browser after you have installed the core tools software, accept the default Destination Directory appearing during installation. This selection will install the documents or browser in the Destination Directory in which you installed the core tools software.

  If you are performing a Typical Installation of the online documentation or the DynaText browser before installing the core tools software, select the same Destination Directory that you will use for the core tools software.

  In the Select Documents to Install window, you must click *on* the check mark to deselect the document. You can reselect a component by clicking the blank space to the left of the document name.

- Run from CD or Network

  Select this option if you plan to access documentation from the CD or from the network.

  If you are performing a Run from CD or Network installation and you select a Destination Directory on your network, the documents will not be installed on the disk drive.

Setting Up the DynaText Browser

The browser and the EBT online documentation are installed in %xilinx%\data\ntdtext unless specified otherwise. The Xilinx online documentation is installed in the %xilinx%\doc\usenglish\ books directory unless specified otherwise.

DynaText Browser System Requirements

The system requirements for the DynaText browser are as follows:

*   IBM PC or compatible PC with an 80486 25 Megahertz processor or greater

*   Windows 95 or NT 4.0

*   Minimum of 12 MB of RAM, 16 MB recommended

*   Disk Space Requirements
    9 MB minimum, 17 MB Full (English)
    15 MB minimum 29 MB Full (Japanese)

*   VGA Monitor, SVGA recommended

Note: Your system must have the Dynamic-Link Library (DLL) file CTL3D32.DLL to run the DynaText browser. This file is usually found in the System32 subdirectory for NT or System subdirectory for Windows 95 under your Windows NT directory. There are two versions of the CTL3D32.DLL (CTL3D95.DLL for Windows 95 and CTL3DNT.DLL for Windows NT).

Setting Up the DynaText Environment

The following subsections discuss the XILINX environment variables and the dynatext.ini file.

Setting Up the Xilinx Environment Variables

When you install the Xilinx core tools software, you can automatically set up the environment variables, XILINX and XILINX_CD, in the Registry for NT 4.0 or in the autoexec.bat for Windows 95. See the "Registry Entries" appendix for details. The XILINX variable is set to point to the path where the software is installed. The XILINX_CD variable points to the CD-ROM path, which is usually d: or to a directory on the network. The specific value of each of these

variables is referenced in the dynatext.ini file. Following is an example of a dynatext.ini file. Environment variable substitution in the dynatext.ini file adheres to the UNIX convention of using the $ symbol, for example, $XILINX\data.

```
; dynatext.ini configuration file

; *********************************************

COLLECTION=$XILINX\data\ntdtext\ebt_books=EBT Books

COLLECTION=$XILINX\doc\usenglish=Xilinx books

COLLECTION=$XILINX_CD\doc\usenglish=Xilinx books (CD)

COLLECTION=$XILINX/xbbs/userware/answers=Answers
COLLECTION=$XILINX_CD/xbbs/userware/answers=Answers on CD
DATA_DIR=$XILINX\data\ntdtext\data
```

If you have not installed the Xilinx core tools software or decided not to set up the XILINX and XILINX_CD variables during install, then these variables have not been set up. In that case, the XILINX variable will be set to the directory in which you installed the software and the XILINX_CD variable will be set to the CD_ROM path, which is usually d: or to a directory on the network. The settings in the dynatext.ini file are shown below.

```
COLLECTION=C:$Xilinx\doc\data\ntdtext\ebt_books=EBT Books
COLLECTION=C:$Xilinx\doc\data\doc\usenglish=Xilinx books
COLLECTION=$Xilinx\doc\usenglish=Xilinx books on CD
COLLECTION=$XILINX/xbbs/userware/answers=Answers
COLLECTION=$XILINX_CD/xbbs/userware/answers=Answers on CD
DATA_DIR=C:$Xilinx\doc\data\ntdtext\data
PUBLIC_DIR=C:$Xilinx\doc\data\ntdtext\tmp\public
PRIVATE_DIR=C:$Xilinx\doc\data\ntdtext\tmp\public
```

Note: If DynaText is being run from the CD-ROM, the PUBLIC_DIR and PRIVATE_DIR variables need to be set to a writable location.

Customizing the dynatext.ini File

The dynatext.ini file, which is located in %xilinx%\bin\nt, sets up the DynaText environment. Normally, you do not need to alter any of your settings in the dynatext.ini file; however, you can customize several DynaText variables by altering this file. Following is a description of required variables.

COLLECTION	Set to the directory or directories where the Xilinx and DynaText books are located. The name as it appears in the DynaText Library window is set by using the equal sign to point to the collection directory path followed by another equal sign to point to the user-defined collection name.
DATA_DIR	Set to the location of the EBT data files $XILINX\data\ntdtext\data).
PUBLIC_DIR	Sets up public annotations. Must be a writable location.
PRIVATE_DIR	Sets up private annotations. Must be a writable location.

When you have completed software installation and setup, proceed to the "Setting Up Security" chapter.

Uninstalling Xilinx Software

To uninstall Xilinx software, perform the following steps.

1. Double-click the My Computer icon.

2. Double-click the Control Panel icon.

3. Double-click the Add/Remove Programs icon.

4. Ensure that the Install/Uninstall tab is selected in the Add/Remove Program Properties window.

5. From the list, select the programs you want to remove and click Add/Remove.

Chapter 7

Setting Up Security

Security for the Alliance software release is implemented using the FLEXlm™ 5.0 license manager. (In the past, FLEXlm was known as the Highland License Manager.) For more information about FLEXlm, see the website, http://www.globetrotter.com.

This chapter explains how to set up FLEXlm on your PC or UNIX workstation.

To implement Xilinx security, you can use either of these types of licensing methods:

- Node-locked licenses—Xilinx supports node-locked on PCs only. It allows unlimited use of the product on a single PC. Access to the software is controlled by the settings in a licensing file called license.dat. Node-locked licensing is the default PC licensing method.

- Floating licenses—Allows multiple workstations or PCs on a network to access the Alliance software. Any computer on the network can use the software, up to a limit which is set in a licensing file called license.dat. Floating license security is implemented using a license manager daemon called lmgrd running on a server in conjunction with a Xilinx-specific license daemon called xilinxd.

The following sections describe how to set up these two licensing systems. The last section provides some basic security tips.

Setting Up Security Using Node-Locked Licenses

A node-locked license allows unlimited use of the product on a single PC. To set up security using node-locked licenses, you must:

1. Set up an LM_LICENSE_FILE environment variable pointing to the license.dat file.

2. Obtain license codes from Xilinx.

3. Set up a license.dat file as specified by the LM_LICENSE_FILE variable and place the license codes into this file. If you are a current user of FLEXlm 5.0 of Xilinx software, you can add the Xilinx license codes to the existing license.dat file.

The following sections describe how to perform these steps.

Setting Up the LM_LICENSE_FILE Variable

The LM_LICENSE_FILE environment variable points to the FLEXlm licensing file, named license.dat. You can set this variable when you install the Alliance software. The default (and recommended) LM_LICENSE_FILE setting is C:\flexlm\license.dat.

If you already had an LM_LICENSE_FILE variable defined when you ran the Alliance installation, the installation program will not modify the variable.

Note: Make sure that you do not have the LM_LICENSE_FILE variable set in both the System Variables area and the User Variables area.

If you must set the LM_LICENSE_FILE variable *after* the Alliance installation, set it up as follows:

Windows NT 4.0

1. From the Start Menu, select the Settings folder and click on the Control Panel icon.

2. In the Control Panel, double click the System icon.

3. Select the Environment tab from the System Properties window.

4. In the Variable field, type LM_LICENSE_FILE.

5. In the Value field, type in the drive letter or network letter and full path of the license.dat file. For example, for a license.dat file on the C drive located in \flexlm, you would type the following;

   ```
   c:\flexlm\license.dat
   ```

Note: If you are already running FLEXlm security as part of another vendor's software, you can set up the LM_LICENSE_FILE variable to point to the Xilinx license.dat file and the vendor's license file. You can specify multiple license files in the LM_LICENSE_FILE Value and separate each with a semicolon (;), as in the following example.

```
c:\flexlm\license.dat;c:\other_vendor\license.dat
```

6. Select Set and Apply to set the variable.

7. Select OK. Log out and log in again to insure that the current value of the environment variable LM_LICENSE_FILE is being used.

8. To verify that you set the variable, select **Start** → **Programs** → **Command Prompt**. In the Command Prompt window, enter the following command:

    echo %LM_LICENSE_FILE%

    The full path that you set as the value of the variable should display.

Note: If you do not set the LM_LICENSE_FILE variable, FLEXlm looks for the license.dat file in the standard place, which is c:\flexlm\license.dat. If the file cannot be found in that location, the LM_LICENSE_FILE environment variable must be set as described previously.

Note: If you are using Workview Office, you will also need to include the path to the Viewlogic license file in the LM_LICENSE_FILE variable. See the "Getting Started" chapter of the *Viewlogic Interface/ Tutorial Guide* for details on setting up LM_LICENSE_FILE for both Xilinx and Viewlogic.

Note: Make sure you do not have an LM_LICENSE_FILE variable set in the System Variables area and another one set in the User Variables area; the variable must be set in one area only.

Windows 95

1. Add the following line to your autoexec.bat file.

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

Note: If you are already running FLEXlm security as part of another vendor's software, you can set up the LM_LICENSE_FILE variable to point to the Xilinx license.dat file and the vendor's license file.

You can specify multiple license files in the LM_LICENSE_FILE Value and separate each with a semicolon (;), as in the following example.

```
set LM_LICENSE_FILE=c:\flexlm\license.dat;c:\other_vendor\license.dat
```

2. Reboot your system so that the autoexec.bat file is reread. Otherwise, the change has no effect.

3. To verify that you set the variable, select **Start** → **Programs** → **MS-DOS Prompt**. In the DOS window, enter the following command:

   echo %LM_LICENSE_FILE%

   The full path that you set as the value of the variable should display.

Note: If you do not set the LM_LICENSE_FILE variable, FLEXlm looks for the license.dat file in the standard place, which is c:\flexlm\license.dat. If the file cannot be found in that location, the LM_LICENSE_FILE environment variable must be set as described previously.

Note: If you are using Workview Office, you will also need to include the path to the Viewlogic license file in the LM_LICENSE_FILE variable. See the "Getting Started" chapter" of the *Viewlogic Interface/ Tutorial Guide* for details on setting up LM_LICENSE_FILE for both Xilinx and Viewlogic.

Obtaining Authorization Codes

You must obtain authorization codes to operate the Alliance software. You write these codes into your license.dat file.

To obtain your authorization codes:

1. Be prepared to supply Xilinx Customer Service the product name and serial number, the Ethernet address or C drive serial number, your end-user ID number, and the network name of your PC.

   When you install the Xilinx software, all of this information with the exception of the nine digit end-user ID number is automatically entered into the license.inp file. For a Run from CD or Network based installation, the license.inp is located in the Windows directory (c:\windows, c:\winnt, etc.). Otherwise, the file is in the root directory of the installation.

For existing customers, the end-user ID number is located on the shipping box label (example 1234-01-01-A). New customers will receive their end-user ID after registering the product.

Use the license.inp file to obtain the information you need to submit to Customer Service. Following is a sample license.inp file.

```
Name:Joe Smythe
Company: Acme
Serial Number:PAS0105
Product:Alliance M1
Version:M1.3
Platform:PC
Computer Name:chekhov
License Input:00609758ec89
```

where "Computer Name" is the network name of your PC and "License Input" is either your Ethernet hardware address or C: drive Volume Serial Number.

If for some reason you did not generate a license.inp file, you can obtain the required information as follows:

- The product name and serial number are located in the lower right hand corner of the barcode label located on the package or on the registration card inside the package.

- You can obtain the Ethernet address by logging onto the PC, accessing a Command Prompt, and entering the following command:

  %XILINX%\bin\nt\lmutil lmhostid -ether

  You can obtain the C: drive Volume Serial Number for your PC by logging onto the PC, accessing a Command Prompt, and entering the following command at the C: prompt:

  vol C:

  Xilinx strongly recommends that you use the Ethernet address instead of the C: drive serial number.

- To obtain the network name of your PC, proceed as follows:

a) From the Start Menu, select the Settings folder and click on the Control Panel icon.

b) In the Control Panel, double click the Network icon.

    c) Select the Identification tab to see the Computer name. This is the network name required for the license.

2. Contact Xilinx Customer Service in any of the following ways:

- Call Xilinx Customer to obtain the authorization codes. International customers may also contact their local distributor or sales representative.

US and Canada	1-800-624-4782

(Monday through Friday, from 8:00 a.m. to 5:00 p.m. Pacific Time)

United Kingdom	01932-333550
Belgium	0800-73738
France	0800-918333
Germany	0130-816027
Italy	1677-90403
Netherlands	0800-918333
Other European Countries	(44) 1932-333550
Japan	81-3-3297-9153

Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Complete the M1 License Request Form enclosed in your package and FAX to:

United States and Canada	408-559-0115
United Kingdom	01932-828521
Other European Countries	(44) 1932-828521
Japan	81-3-3297-9189

Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Obtain authorization codes from the World Wide Web. Go to the Xilinx home page (http://www.xilinx.com), click on the Support hyperlink and then click on the Software Licensing and Registration hyperlink.

- If you are a European customer, you may provide the required information via email to m1license@xilinx.com

Your Xilinx Customer Service Representative will email or fax you a file with your authorization codes.

Setting Up the license.dat File

The file your Xilinx Customer Service Representative will email or fax to you includes information similar to the following file.

License Information With Ethernet Address

```
#----------------------------------------
# Serial Number 860689725   10-APR-97 9:28
#
# This license is node-locked to host lefthand, id = 0020afea417a
#
FEATURE ALI-STD-PC xilinxd 1.000 10-JUL-97 0 1C9276EA70EC14BF6B9F  \
"XSJ_davet" 0020afea417a
#
#----------------------------------------
#
# Package Definitions Follow:
#
#------------------------------------------------
PACKAGE ALI-STD-PC xilinxd 1.000 C0901041EBE4CB132AC6 \
COMPONENTS="system-PC bit-PC xc3000D-PC xc4000X-PC xc5200X-PC \
ngd2vhdl-PC verilog-PC " \
OPTIONS=SUITE
#
#----------------------------------------
# Web-generated license.
#----------------------------------------+
```

If you supply a disk drive serial number, the FEATURE will have the text "DISK_SERIAL_NUM". For the previous sample file, the FEATURE line looks like the following:

```
FEATURE ALI-STD-PC xilinxd 1.000 10-JUL-97 0 1C9276EA70EC14BF6B9F \
"XSJ_davet" DISK_SERIAL_NUM=1DA33FF5
```

The information in this file must appear in your license.dat file.

Xilinx strongly recommends that you use the Ethernet address as your host id instead of the C: drive serial number.

You can use the information you receive in this way:

Note: You may have to create the directory C:\flexlm to place the license.dat file in the correct location.

- If you are creating a new license.dat file, and the Customer Service Representative sent the information by email, you can remove the email header from the file and copy the file to the correct location (usually C:\flexlm\license.dat).

- If you are creating a new license.dat file, and the Customer Service Representative sent the information in a fax, you can use a text editor to create a file containing the information and place the file in the correct location (usually C:\flexlm\license.dat).

  To create this file, you can copy the template file %XILINX%\data\license.template into the proper directory, rename it license.dat, and edit the template file to include your FEATURES and PACKAGES. Comment out the SERVER and DAEMON lines; they pertain to floating licenses. Use the # sign at the beginning of a line to make it a comment.

  The template license file contains PACKAGE definitions for all the packages Xilinx supports. Most will not be relevant to your installation, but they may be left in the license file. You *must* include a package definition which corresponds to any products mentioned in FEATURE lines. For example, the PACKAGE ALI-STD-PC line in the sample file, License Information With Ethernet Address, must be matched by a FEATURE ALI-STD-PC line.

  Each FEATURE line must be a single line. If the text overflows to another line, use the backslash character as a continuation character at the end of the line.

If you use the backslash, make sure that it is the last character on the line. No tabs or spaces may follow the backslash.

- If you are adding the information to an existing license.dat file, place the new Xilinx information *before* any existing information pertaining to floating licensing. This information usually begins with a SERVER line.

When the license.dat file contains the proper information and is in the proper directory, you can run the Alliance software.

Setting Up Security Using Floating Licenses

This section describes how to implement security using floating licenses. Floating licenses allow multiple systems on a network to access the Alliance software. Any systems on the network can use the software, up to a limit which is set in a licensing file called license.dat.

Please note that this release includes FLEXlm version 5.0. If you are running an older version, including the FLEXlm version 4.1 which was included in the earlier releases, you must restart your license manager and daemon using the new FLEXlm version 5.0 software.

Workstation Setup–Floating Licenses

The following sections describe how to set up security using floating licenses on a UNIX workstation.

Selecting a License.dat File—Workstation

If you do not already have a license.dat file, contact Xilinx Customer Service to obtain a license.dat file. Refer to the "Preparing the License.dat File—Workstation" section for information about contacting Customer Service.

If you are a current user of FLEXlm 5.0 of Xilinx software, then your current license will work with this new software, and you do not have to change it. However, you may need to stop the license daemon and restart it.

If you are running in a networked environment, the license.dat file should be copied to a flexlm directory on one of the servers accessible by your workstation. Multiple users can then use the same copy of the license manager.

Setting Up the LM_LICENSE_FILE Variable—Workstation

The LM_LICENSE_FILE environment variable points to the Xilinx licensing file, named license.dat. The license file is typically in $XILINX/data/license.dat. Another common location on the license server is /usr/local/flexlm/licenses/license.dat (the default for FLEXlm).

Before using the Xilinx software, each user who will access the software must set up an LM_LICENSE_FILE environment variable. One way is as follows:

1. Ensure that the XILINX variable is set up to point to the Xilinx software.

    setenv XILINX *full_path_to_Xilinx_core_software_tools*

2. Set an environment variable in your .cshrc file that points to the license.dat file. For example, if the license.dat file is installed in $XILINX/data, you would enter the following command:

    setenv m1_license = $XILINX/data/license.dat

3. Set the LM_LICENSE_FILE variable in your .cshrc file to point to the m1_license variable. Use an If statement to consider two conditions:

    -   Users who have not yet set the LM_LICENSE_FILE variable during the install process

    -   Users who have LM_LICENSE_FILE set

    Following is an example statement:

```
if ( ! $?LM_LICENSE_FILE ) then
 setenv LM_LICENSE_FILE $m1_license
else
 setenv LM_LICENSE_FILE ${LM_LICENSE_FILE}:$m1_license
endif
```

4. Source the .cshrc file.

License Management—Workstation

You will need to contact your Xilinx customer support to obtain authorization codes for your new Xilinx products. Refer to the "Preparing the License.dat File—Workstation" section for information about contacting Customer Service.

To use the Xilinx software, you will need the following:

- FLEXlm license manager, Version 5.0 or greater

- Xilinx license.dat file

- Appropriate authorization codes to add to license.dat

The FLEXlm license manager is included on the media shipped to you by Xilinx, and is copied with the software into your installation directory by the Install program.

You must obtain your template license.dat file from Xilinx customer support. For information about how to contact Customer Service, refer to the "Preparing the License.dat File—Workstation" section.

Adding New Products—Workstation

If you are installing for the first time or are adding new products to your Xilinx installation, you must call Xilinx to obtain the authorization codes for the components you have purchased. For information about how to contact Customer Service, refer to the "Preparing the License.dat File—Workstation" section.

To enable an installation, you must update the license.dat with the authorization codes and start the license manager as described in the following sections.

If you plan to add the Xilinx license information to an existing license file, you must ensure that you obtained authorization codes for the same server as the existing license and then you must ensure that the license.dat file contains the new DAEMON and FEATURE lines, and that this file includes the PACKAGE section for each FEATURE line. Please note that this release requires a new vendor daemon, xilinxd.

Preparing the License.dat File—Workstation

The license file is typically in $XILINX/data/license.dat. Another common location is /usr/local/flexlm/licenses/license.dat. (This is the default for FLEXlm.)

The template license file, $XILINX/data/license.template, illustrates the structure of a typical license file. You will receive a license file similar to this file from Xilinx Customer Service. Remember to modify the DAEMON line so that the path to xilinxd is correct.

To obtain your authorization codes:

1. Be prepared to supply Xilinx Customer Service the following information:

    • The product name and serial number from the lower right hand corner of the barcode label located on the package or on the registration card inside the package.

Note: Save the information so that you will have the product name and serial number for future reference.

    • The host name and host id of the computer that will be your license server.

    • The nine digit end-user ID number. For existing customers, the end-user ID number is located on the shipping box label (example 1234-01-01-A). New customers will receive their end-user ID after registering the product.

    You can obtain the host id for your license server by logging in to it, and running the following command:

    `$XILINX/bin/`*platform*`/lmutil lmhostid`

    where *platform* is the type of computer, for example, sun.

    This is the most reliable way to obtain the host id for use in the license file. This information must be obtained on the machine which will be your license server.

    If you plan to add the new Xilinx information to an existing license file, you should use the hostname and host id from the SERVER line(s) in the existing file. You *must* use the same information if you plan to use the same computer for your license server.

2. Contact Xilinx Customer Service in any of the following ways:

    • Call Xilinx Customer to obtain the authorization codes. International customers may also contact their local distributor or sales representative.

US and Canada   1-800-624-4782
(Monday through Friday, from 8:00 a.m. to 5:00 p.m. Pacific Time)

United Kingdom   01932-333550

Belgium   0800-73738

France   0800-918333

Germany   0130-816027

Italy   1677-90403

Netherlands   0800-918333

Other European Countries   (44) 1932-333550

Japan   81-3-3297-9153

Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Complete the M1 License Request Form enclosed in your package and FAX to:

  United States and Canada   408-559-0115

  United Kingdom   01932-828521

  Other European Countries   (44) 1932-828521

  Japan   81-3-3297-9189

  Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Obtain authorization codes from the World Wide Web. Go to the Xilinx home page (http://www.xilinx.com), click on the Support hyperlink and then click on the Software Licensing and Registration hyperlink.

- If you are a European customer, you may provide the required information via email to m1license@xilinx.com

Your Xilinx Customer Service Representative will email or fax you a file with your authorization codes.

Understanding License Codes—Workstation

The file your Xilinx Customer Service Representative will email or fax to you includes information similar to the following.

```
SERVER   gene 80361d08 2200
DAEMON   xilinxd  /usr/xilinx/bin/sun/xilinxd
FEATURE ALI-BAS-WS xilinxd 1.000 26-JUN-97 10 CAB23519BC74B5B3B0B8  \
        "XSJ_davet"
```

Note: You must use the full path name for the location in the DAEMON line. Also you cannot use variable names such as $XILINX in your path description. The FEATURE line must be a single line. If the text overflows to another line, use the backslash character as a continuation character at the end of the line. If you use the backslash, make sure that it is the last character on the line. No tabs or spaces may follow the backslash.

You *must* retain the package definition which corresponds to any products mentioned in FEATURE lines. For example, the FEATURE above won't work without a package definition:

```
PACKAGE ALI-BAS-WS xilinxd 1.000 E050C0B1DB1B83F72599 \
        COMPONENTS="system bit xc3000E xc4000E xc5200E \
        ngd2vhdl verilog " \
        OPTIONS=SUITE
```

Note: The previous four lines are actually a single line. The backslash (\) at the end of the first three lines is a continuation character indicating that each line wraps to the next line. If you use the backslash character, it must be the last character on the line, and no tabs or spaces may follow the backslash This package definition is only an example.

Starting the License Server—Workstation

Once the license file has been updated, you must start (or restart) the license server. If you were not already running FLEXlm 5.0 or a higher version, you must use the new lmgrd, delivered with your Xilinx software. The command, **lmgrd -v**, will cause lmgrd to display its version number.

Note: The license server will not start automatically when you run the Xilinx software. You must start up the lmgrd daemon explicitly to allow the software to run.

Before starting lmgrd (FLEXlm license manager), you must meet the following requirements.

- You must have a license file for a floating license.

- The DAEMON line in the license file must point to a valid path for the xilinxd daemon.

The recommended way to start the license server is this:

`$XILINX/bin/`*platform*`/lmgrd -c $XILINX/data/license.dat -l /tmp/lmgrd.log`

where *platform* is the type of computer, for example, sun

The lmgrd program will run as a batch job, logging its activity to the lmgrd.log file. The log file stores information about checking out and checking in licenses. If a security error occurs, read the log file to determine the cause of the error.

The recommended way to stop the license server is this:

`$XILINX/bin/`*platform*`/lmutil lmdown -c $XILINX/data/license.dat`

PC Setup–Floating Licenses

The following sections describe how to set security using floating licenses on a PC running Windows NT 4.0 or Windows 95.

Selecting a License.dat File—PC

If you do not already have a license.dat file, contact Xilinx Customer Service to obtain a license.dat file. Refer to the "Setting Up Security Using Floating Licenses" section for information about contacting Customer Service.

If you are a current user of FLEXlm 5.0 of Xilinx software, then your current license will work with this new software, and you do not have to change it. However, you may need to stop the license daemon and restart it.

If you are running in a networked environment, the license.dat file should be copied to a flexlm directory on one of the servers accessible by your PC. Multiple users can then use the same copy of the license manager.

Setting Up the LM_LICENSE_FILE Variable—PC

The LM_LICENSE_FILE environment variable points to the FLEXlm licensing file, named license.dat. You can set this variable when you install the Alliance software. The default (and recommended) LM_LICENSE_FILE setting is C:\flexlm\license.dat.

If you already had an LM_LICENSE_FILE variable defined when you ran the Alliance installation, the installation program will not modify the variable.

If you must set the LM_LICENSE_FILE variable *after* the Alliance installation, set it up as follows:

Windows NT 4.0

1. From the Start Menu, Select the Settings folder and click on the Control Panel icon.

2. In the Control Panel, double click the System icon.

3. Select the Environment tab from the System Properties window.

4. In the Variable field, type LM_LICENSE_FILE.

5. In the Value field, type in the drive letter or network letter and full path of the license.dat file. For example, for a license.dat file on the C drive located in \flexlm, you would type the following;

    ```
    c:\flexlm\license.dat
    ```

Note: If you are already running FLEXlm security as part of another vendor's software, you can set up the LM_LICENSE_FILE variable to point to the Xilinx license.dat file and the vendor's license file. You can specify multiple license files in the LM_LICENSE_FILE Value and separate each with a semicolon (;), as in the following example.

    ```
    c:\flexlm\license.dat;c:\other_vendor\license.dat
    ```

6. Select Set to set the variable.

7. Select OK.

8. Log out and log in again to insure that the current value of the environment variable LM_LICENSE_FILE is being used.

9. To verify that you set the variable, select **Start** → **Programs** → **Command Prompt**. In the Command Prompt window, enter the following command:

`echo %LM_LICENSE_FILE%`

The full path that you set as the value of the variable should display.

Note: If you do not set the LM_LICENSE_FILE variable, FLEXlm looks for the license.dat file in the standard place, which is c:\flexlm\license.dat. If the file cannot be found in that location, the LM_LICENSE_FILE environment variable must be set as described previously.

Note: If you are using Workview Office, you will also need to include the path to the Viewlogic license file in the LM_LICENSE_FILE variable. See the "Getting Started" chapter" of the *Viewlogic Interface/ Tutorial Guide* for details on setting up LM_LICENSE_FILE for both Xilinx and Viewlogic.

Windows 95

1. Add the following line to your autoexec.bat file.

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

Note: If you are already running FLEXlm security as part of another vendor's software, you can set up the LM_LICENSE_FILE variable to point to the Xilinx license.dat file and the vendor's license file. You can specify multiple license files in the LM_LICENSE_FILE Value and separate each with a semicolon (;), as in the following example.

`set LM_LICENSE_FILE=c:\flexlm\license.dat;c:\other_vendor\license.dat`

2. Reboot your system so that the autoexec.bat file is reread. Otherwise, the change has no effect.

3. To verify that you set the variable, select **Start** → **Programs** → **MS-DOS Prompt**. In the DOS window, enter the following command:

    `echo %LM_LICENSE_FILE%`

    The full path that you set as the value of the variable should display.

Note: If you do not set the LM_LICENSE_FILE variable, FLEXlm looks for the license.dat file in the standard place, which is c:\flexlm\license.dat. If the file cannot be found in that location, the LM_LICENSE_FILE environment variable must be set as described previously.

Note: If you are using Workview Office, you will also need to include the path to the Viewlogic license file in the LM_LICENSE_FILE variable. See the "Getting Started" chapter of the *Viewlogic Interface/Tutorial Guide* for details on setting up LM_LICENSE_FILE for both Xilinx and Viewlogic.

License Management—PC

You will need to contact your Xilinx customer support to obtain authorization codes for your new Xilinx products.

To use the Xilinx software, you will need the following:

- FLEXlm license manager, Version 5.0 or greater

- Xilinx license.dat file

- Appropriate authorization codes to add to license.dat

The FLEXlm license manager is included on the media shipped to you by Xilinx, and is copied with the software into your installation directory by the Install program.

You must obtain your template license.dat file from Xilinx customer support. For information about how to contact Customer Service, refer to the "Preparing the License.dat File—PC" section.

Adding New Products—PC

If you are installing for the first time or are adding new products to your Xilinx installation, you must call Xilinx to obtain the authorization codes for the components you have purchased. Refer to the "Preparing the License.dat File—PC" section for information about contacting Customer Service.

To enable an installation, you must update the template license.dat with the authorization codes and start the license manager as described in the following sections.

If you plan to add the Xilinx license information to an existing license file, you must ensure that you obtained authorization codes for the same server as the existing license and then you must ensure that the license.dat file contains the new DAEMON and FEATURE lines, and that this file includes the PACKAGE section for each FEATURE line. Please note that this release requires a new vendor daemon, xilinxd.

Preparing the License.dat File—PC

The license.dat file is commonly located in c:\flexlm. (This is the default for FLEXlm.) The template license file has PACKAGE definitions for the Xilinx products. You will need to add the FEATURE lines containing your authorization codes. You will also need to modify the DAEMON line so that it contains the correct path to your copy of xilinxd.

To obtain your authorization codes:

Be prepared to supply Xilinx Customer Service the nine digit end-user ID number, product name and serial number, the Ethernet address or C drive serial number, and the network name of your PC.

When you install the Xilinx software, all of this information with the exception of the end-user ID number is automatically entered into the license.inp file. For existing customers, the end-user ID number is located on the shipping box label (example 1234-01-01-A). New customers will receive their end-user ID after registering the product.

Use this file to obtain the information you need to submit to Customer Service. For an example of a license.inp file, see the "Obtaining Authorization Codes" section in this chapter.

If for some reason you did not generate a license.inp file, you can obtain the required information as follows:

- The product name and serial number are located in the lower right hand corner of the barcode label located on the package or on the registration card inside the package.

- You can obtain the Ethernet address by logging onto the PC, accessing a Command Prompt, and entering the following command:

    ```
    %XILINX%\bin\nt\lmutil lmhostid -ether
    ```

    You can obtain the C: drive Volume Serial Number for your PC by logging onto the PC, accessing a Command Prompt, and entering the following command at the C: prompt:

    ```
    vol C:
    ```

    Xilinx strongly recommends that you use the Ethernet address instead of the C: drive serial number.

- To obtain the network name of your PC, proceed as follows:

a) From the Start Menu, select the Settings folder and click on the Control Panel icon.

b) In the Control Panel, double click the Network icon.

c) Select the Identification tab to see the Computer name. This is the network name required for the license.

    If you plan to add the new Xilinx information to an existing license file, you should use the network name from the SERVER line(s) in the existing file. You *must* use the same information if you plan to use the same computer for your license server.

Contact Xilinx Customer Service in any of the following ways:

- Call Xilinx Customer to obtain the authorization codes. International customers may also contact their local distributor or sales representative.

    US and Canada   1-800-624-4782
    (Monday through Friday, from 8:00 a.m. to 5:00 p.m. Pacific Time)

    United Kingdom   01932-333550

    Belgium   0800-73738

    France   0800-918333

    Germany   0130-816027

    Italy   1677-90403

    Netherlands   0800-918333

    Other European Countries   (44) 1932-333550

    Japan   81-3-3297-9153

    Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Complete the M1 License Request Form enclosed in your package and FAX to:

    United States and Canada   408-559-0115

    United Kingdom   01932-828521

    Other European Countries   (44) 1932-828521

    Japan   81-3-3297-9189

Southeast Asia/ROW and international countries not listed: Contact your local Xilinx distributor

- Obtain authorization codes from the World Wide Web. Go to the Xilinx home page (http://www.xilinx.com), click on the Support hyperlink and then click on the Software Licensing and Registration hyperlink.

- If you are a European customer, you may provide the required information via email to m1license@xilinx.com

Your Xilinx Customer Service Representative will email or fax you a file with your authorization codes.

Understanding License Codes—PC

The file your Xilinx Customer Service Representative will email or fax to you includes information similar to the following.

```
SERVER   edapc89      DISK_SERIAL_NUM=C031946D 2200

DAEMON   xilinxd  C:\XILINX\BIN\NT\XILINXD.EXE

FEATURE PR-4EX-PC xilinxd 1.000 28-MAY-97 1 0B242B17C9F07F15EA92 "XSJ_dan"
```

Note: You must use the full path name for the location in the DAEMON line. Also you cannot use variable names such as %XILINX% in your path description. The FEATURE line must be a single line. If the text overflows to another line, use the backslash character as a continuation character at the end of the line. If you use the backslash, make sure that it is the last character on the line. No tabs or spaces may follow the backslash.

You *must* retain the package definition which corresponds to any products mentioned in FEATURE lines. For example, the FEATURE above won't work without a package definition:

```
PACKAGE PR-4EX-PC xilinxd 1.000 0070A051667FD9D49EA8 \
    COMPONENTS="system-PC bit-PC xc3000D-PC xc4000X-PC \
    mentor-PC synopsys-PC viewlog-PC ngd2vhdl-PC verilog-PC " \
    OPTIONS=SUITE
```

Note: The previous four lines are actually a single line. The backslash (\) at the end of the first three lines is a continuation character indicating that each line wraps to the next line. If you use the backslash character, it must be the last character on the line, and no tabs or spaces may follow the backslash This package definition is only an example.

Starting the License Server—PC

Once the license file has been updated, you must start (or restart) the license server. If you were not already running FLEXlm 5.0 or a higher version, you must use the new lmgrd, delivered with your Xilinx software. The command, **lmgrd -v**, will cause lmgrd to display its version number.

Note: The license server will not start automatically when you run the Xilinx software. You must start up the lmgrd daemon explicitly to allow the software to run.

Before starting lmgrd (FLEXlm license manager), you must meet the following requirements.

- You must have a license file for a floating license.

- The DAEMON line in the license file must point to a valid path for the xilinxd daemon.

To invoke the lmgrd from a command prompt:

1. Select **Start** → **Programs** → **Command Prompt**.

2. In the Command Prompt window, enter the following command:

    lmgrd -app -c *licensefile* **-1** *logfile*

    where *licensefile* is the actual name of your license file and *logfile* specifies the name you want for the log file. The log file stores information about checking out and checking in licenses. If a security error occurs, read the log file to determine the cause of the error.

Note: You must have the %XILINX%\bin\nt directory in your path, so that the license manager can find the required .DLL files.

If you attempt to close the Command Prompt window while lmgrd is running, the End Task windows will display. If you choose to terminate lmgrd, you will not be able to access the Xilinx software. You must be running lmgrd to use the Xilinx software.

Security Tips

Following are several security tips:

- For a PC floating license, determine the correct server name by selecting **Start** → **Settings** → **Control Panel** → **Network** → **Identification**.

- Check that the PATH, XILINX, and LM_LICENSE_FILE variables are pointing to valid paths.

- Use 'lmutil lmcksum c:*full_path_name*\\license.dat' on PCs or 'lmutil lmcksum /*full_path_name*/license.dat' on workstations to give a checksum; Compare the checksum given by lmutil lmcksum with the checksum in the license.dat file.

- If you have multiple tools that use FLEXlm, then use the newest versions of lmgrd and lmutil to run the license manager software.

- Xilinx currently uses v5.0 of the FLEXlm software.

- To determine the version of the FLEXlm software on your system, run the following command on the workstation:

  full_path_name/**lmutil lmver lmgrd**

  or on the PC in a DOS shell, run the following command:

  full_path_name**lmutil lmver lmgrd.exe**

- To start a license server of a PC, after setting up the PATH, XILINX, and LM_LICENSE_FILE variables, go to a DOS shell and run the following command:

  full_path_name**lmgrd -app -c** *licensefile*

  where *licensefile* is the full path name to your license file

  To start a license server of a UNIX workstation, after setting up the PATH, XILINX, and LM_LICENSE_FILE variables, from the command line prompt, run the following command:

$XILINX/bin/*platform***/lmgrd -c $XILINX/data/license.dat -l /tmp/lmgrd.log**

  where *platform* is the type of computer, for example, sun. The lmgrd program will run as a batch job, logging its activity to the named log file.

- If the license manager has trouble starting, or a licensed execut-able like NGDBuild or MAP gives a security error, run the following command to obtain additional information on your license manager:

  `lmutil lmdiag`

- On a PC, confirm your license file name. It should be C:\FLEXLM\LICENSE.DAT if using default values. Some PC applications such as Microsoft Word may append suffixes to the file name and cause licensing to fail. If the LM_LICENSE_FILE variable is not set, the file MUST be C:\FLEXLM\LICENSE.DAT.

- To obtain a software license security code, please call Customer Service at 1-800-624-4782, fax information to 1-408-559-0115, or select the Support hyperlink from the Xilinx Web site, http://www.xilinx.com. Please provide the following information: end-user ID number, product type (for example, PR-ALI-STD-PC), serial number from the registration card and your ethernet hardware address (12 hex digits) or your C: Drive serial number (PCs).

Chapter 8

Getting Started

This chapter explains how to start the Alliance software on PCs and workstations and how to open and use the DynaText browser.

Starting the Software on PCs

When you have installed the software and set up the license file, you are ready to use the Alliance software. If you fully installed the software, four icons are created in the Xilinx folder: Design Manager, DynaText browser, LogiBLOX and the Readme file. You can access the core tools software via the Design Manager, which is the Graphical User Interface (GUI). To start up the Design Manager, select **Start** → **Programs** → **Xilinx** → **Design Manager**. For a complete description of the Design Manager, see the online document, *Design Manager/Flow Engine Reference/User Guide.*

You can also access specific core technology tools, such as NGDBuild, PAR, and MAP via the Command Line prompt. To display a Command Line Prompt, select **Start** → **Programs** → **Command Prompt** and enter a specific command and its options at the prompt. The online document, *Development System Reference Guide,* describes all commands and options in detail.

LogiBLOX is a graphical interactive tool for creating high-level modules, such as counters, shift registers, and multiplexers. LogiBLOX includes both a library of generic modules and a set of tools for customizing these modules. To use LogiBLOX as a stand-alone utility, double click on the LogiBLOX icon. LogiBLOX is also integrated into some third-party schematic entry tools (such as Workview Office), and can generate schematic symbols and appropriate simulation models.

The documentation for your schematic entry interface (for example. the *Viewlogic Interface/Tutorial Guide*) explains how to use LogiBLOX from the schematic editor.

Starting the Software on Workstations

When you have installed the software and set up the license file, you are ready to use the Alliance M1.3 software. You can access the core tools software via the Design Manager, which is the Graphical User Interface (GUI). To start up Design Manager, enter the command **dsgnmgr** at your command line prompt. For a complete description of the Design Manager, see the online document, *Design Manager/ Flow Engine Reference/User Guide*.

You can also access specific core technology tools, such as NGDBuild, PAR, and MAP via the Command Line prompt. The online document, *Development System Reference Guide*, describes all of the specific commands and their options in detail.

LogiBLOX is a graphical interactive tool for creating high-level modules, such as counters. shift registers, and multiplexers. Logi-BLOX includes both a library of generic modules and a set of tools for customizing these modules. To use LogiBLOX as a stand-alone utility, enter the command **lbgui** at the command line prompt. LogiBLOX is also integrated into some third-party schematic entry tools (such as Viewlogic and Mentor), and can generate schematic symbols and appropriate simulation models.

The documentation for your schematic entry interface (for example. the *Viewlogic Interface/Tutorial Guide* or *Mentor Graphic Interface/Tutorial Guide*) explains how to use LogiBLOX from the schematic editor.

Opening and Using the DynaText Browser

The following subsections explain how to open documents and use the browser.

Opening Documents on PCs

To open Xilinx documents on a PC, follow these instructions:

1. With your browser installed on your hard disk drive, select **Start** → **Programs** → **Xilinx** → **DynaText 3.1**.

2. Once the DynaText Library window displays, click "Xilinx books" in the Collections window pane.

   A complete list of the Xilinx online documents displays in the Books window pane. Double click on the book you wish to open.

Using the DynaText Browser on PCs

To find out how to use the features of the DynaText browser, access the online help within the browser. You can also open online manuals for the browser by selecting "DynaText English Documentation" from the Collection window.

To maximize the quality of text and figures, you may have to adjust your monitor display settings. For a 15-inch monitor, Xilinx recommends that you set your display characteristics to small fonts with 1024 x 768 resolution.

These properties can be set in the Settings tab of the Display Properties window which you can access by double-clicking the Display icon from the Control Panel window.

If the browser text still displays poorly, from the DynaText Preferences window, select the Book Window icon. In the Zoom field, enter 125%.

Opening Documents on Workstations

To open Xilinx documents, follow these instructions:

1. Proceed as follows:

   - If your browser is installed on your hard disk drive, enter the command, `dtext`, at the command line prompt.

   - If your want to read the documents from the CD-ROM, enter `/cdrom/dtext` at the UNIX prompt.

2. Once the DynaText Library window displays, proceed as follows:

   - If you installed the online documentation and browser on your system, click "Xilinx books" in the Collections window.

   - If you want to open a document from the CD-ROM, make sure that your CD-ROM is mounted and inserted into the caddy. Select "Xilinx books (CD)" from the Collections window pane.

A complete list of the Xilinx online documents displays in the Books window pane. See the "DynaText Library Window" figure.
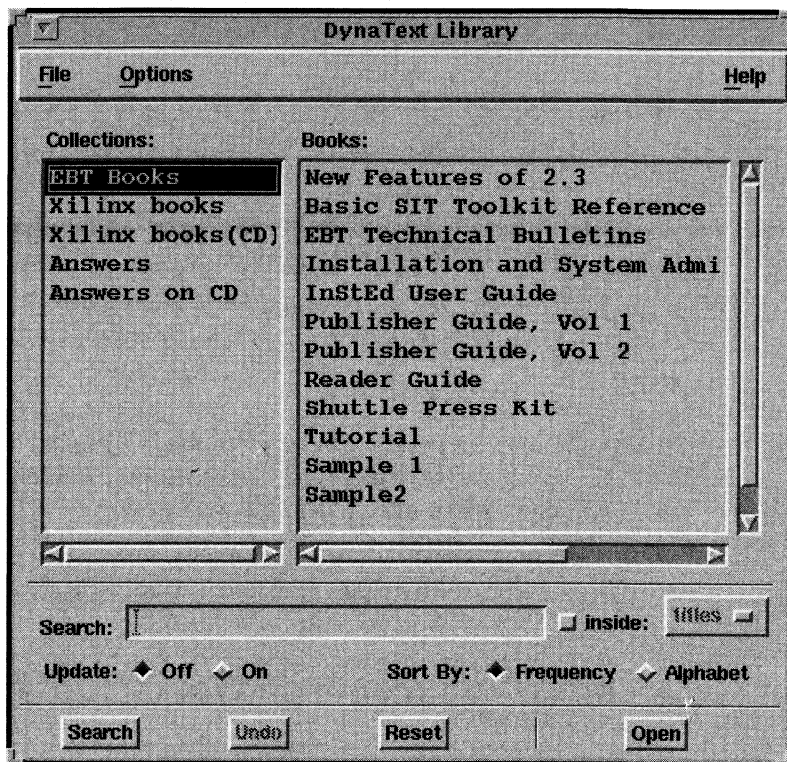
Figure 8-1   DynaText Library Window

3. Double click a document in the Books window pane of the Dyna-Text Library window to open it. (You can also highlight a document and then click Open.)

    The Table of Contents for the document displays in the left portion of the window. The first page of the document displays in the right side of the window. See the "Typical Book Display" figure.

    The "Xilinx books" collection represents the online documentation on the disk drive. The "Xilinx books (CD)" collection represents the books on CD-ROM.

The Answers and Answers on CD collections contain the Known Issues.
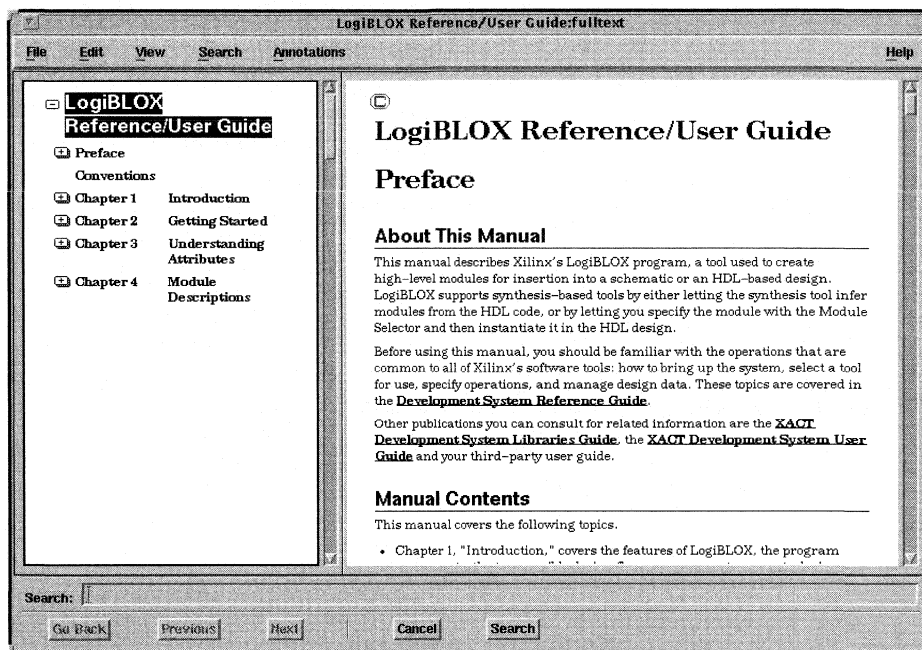
Figure 8-2   Typical Book Display

Note: You can also open a book at the UNIX prompt by entering the following command:

```
dtext -col collection_path bookname
```

where *collection_path* is the path to the book you want to open.

Using the DynaText Browser on Workstations

DynaText online documentation, the *Reader Guide* and *Tutorial*, explains how to use the browser. To access these documents, follow these steps:

1. With the DynaText Library window displayed, click EBT Books in the Collections field. Three documents display in the Books field.

2. Double click a document in the Books field to open it.

DynaText also provides online help. You can access online help by selecting the Help button in the upper right corner of any window.

To maximize the quality of text and figure displays, you may have to adjust your monitor display settings. For a 15-inch monitor, Xilinx recommends that you set your display characteristics to small fonts with 1024 x 768 resolution.

These properties can be set in the Settings tab of the Display Properties window which you can access by double-clicking the Display icon from the Control Panel window.

If the browser text still displays poorly, from the DynaText Preferences window, select the Book Window icon. In the Zoom field, enter 125%.

Documentation Categories

This section describes the types of documents available for use with Xilinx products.

Xilinx Online Documentation

This category refers to documents available in online format. The four subcategories are as follows:

- Windows tools documentation

- Traditional core software documentation

- CAE Tool interface guides

- CPLD software documentation

Table 8-1   Windows Tools Documentation

Reference/User Guides
Design Manager/Flow Engine Reference/User Guide This manual describes the Design Manager, a tool for managing multiple implementations of the same design. This manual also explains the Flow Engine, which implements designs, and explains how to interact with other programs that run in the Design Manager environment; namely, the Design Editor, the Timing Analyzer, the Hardware Debugger, the PROM File Formatter, and the PROM Programmer.
EPIC Design Editor Reference/User Guide EPIC is a graphical editor used to display and configure FPGAs. EPIC enables you to place and route critical components before running automatic place and route tools on an entire design, modify placement and routing manually, interact with the physical constraints file (PCF) to create and modify constraints, and verify timing against constraints.
Hardware Debugger Reference/User Guide This manual describes how to program, verify, and debug FPGA devices. It describes the XChecker cable and explains how to connect the cable pins to your target device for various functions: downloading, verification, and debugging. It also includes a tutorial for debugging a design using the demonstration boards as target devices.
PROM File Formatter Reference/User Guide This manual explains how to use a Windows-based tool to format bitstream files into HEX format files compatible with Xilinx and third-party PROM programmers. You use the PROM files to program a PROM device, which is then used to configure daisy chains of one or more FPGAs for one application (configuration) or several applications (reconfiguration).
Quick Start Guide for Alliance Series vM1.3 This manual provides an overview of the features and additions to Xilinx's M1.3 software. The primary focus of the guide is the Core Technology used to implement a design.
Timing Analyzer Reference/User Guide This manual describes Xilinx's Timing Analyzer program, a graphical user interface tool that performs static analysis of a mapped FPGA or CPLD design. The mapped design can be partially or completely placed, routed, or both.

Table 8-2   Traditional Core Software Documentation

Reference/User Guides
Development System Reference Guide This book describes the Xilinx Development System software, which includes programs to generate EDIF files, LCA files, and BIT files, primarily for FPGA architectures. The book covers all the program options and files that are generated by these programs.
Development System User Guide This guide describes the Xilinx design flow, including design entry, implementation, and verification. It also addresses design entry methodology selection, configuration modes as well as readback and verification, primarily for FPGA architectures. This guide also describes boundary scan for XC4000 and XC5200 devices.
Hardware User Guide This manual describes the Xilinx Demonstration hardware and its associated software interfaces. The hardware includes the FPGA and CPLD demonstration boards, which are used for design verification.
Libraries Guide This book describes the components or macros that you use to create your designs as well as the attributes and constraints used to process the design during logic implementation. It also discusses relationally placed macros (RPMs), which are macros that contain relative location constraints (RLOC) information. The Xilinx unified libraries enable you to convert designs easily from one family to another.
LogiBLOX Reference/User Guide This guide describes the high-level modules you can use to speed up design entry and the attributes that support logic synthesis, primarily for FPGA architectures. It also explains how to use the LogiBLOX program to create designs and the different types of logic synthesis completed by the LogiBLOX program.

Table 8-3   CAE Tool Interface/Tutorial Guides

Interface/Tutorial Guides
Cadence Interface/Tutorial Guide This guide explains how to use the Cadence Concept schematic editor with the Xilinx software. The guide also explains how to generate a symbol/body for LogiBLOX modules within Concept, how to convert Concept Verilog output files to EDIF files with CONCEPT2XIL, and how to conduct functional and timing simulations.
Mentor Graphics Interface/Tutorial Guide This guide explains how to use the Mentor Graphics interface software with Mentor Graphics software. Included in this book is information on using the Mentor Graphics Design Manager interface configured for the design, simulation, and implementation of Xilinx Programmable Logic Devices (PLDs).
Synopsys (XSI) Interface/Tutorial Guide This manual describes the Xilinx Synopsys Interface (XSI™) program as used to implement FPGA designs using either the Synopsys FPGA Compiler or Design Compiler synthesis tools.
Viewlogic Interface/Tutorial Guide This interface guide explains how to use the Viewlogic interface software to translate your FPGA or CPLD designs from Viewlogic schematics to implemented design and simulation files. The tutorial guides you through a typical FPGA and CPLD design procedure from schematic entry to completion of a functioning device.

Table 8-4   CPLD Software Documentation

Design Guides
CPLD Schematic Design Guide This guide covers design techniques for schematic entry tools. It also includes information to embed behavioral modules and migrate designs between different families.
CPLD Synthesis Design Guide This guide describes CPLD synthesis design techniques when using the Xilinx Synopsys Interface (XSI).
JTag Programmer Guide This guide documents the graphical interface used for in-system programming and verification of XC9500 parts. The guide also describes how to set up and use JTAG download cables.

Xilinx also provides the Answers book as an online document. This book contains a comprehensive list and complete description of Known Issues for the M1.3 software.

Xilinx Application Information

The *XACT Conversion Guide* is available in hardcopy format only. This guide explains how to migrate existing design files for use with Xilinx M1.3 software.

Chapter 9

Known Issues

This chapter describes the most critical known issues in the Alliance Series vM1.3 release. For a complete, up-to-date listing of Known Issues, click Answers from the Xilinx Web home page (http://www.xilinx.com). If you cannot access the Web, the CD Answers DynaText online document, which is located on the Core Technology CD, also contains the M1.3 Known Issues.

Software

This section describes known issues for installation, design entry, translation, implementation, simulation file creation, functional simulation, timing simulation, timing analysis, post-route board level integration, downloading and configuration, security, and Cadence.

Installation

The command window for lmutil does not close

Platform(s): Windows 95
Architecture(s): NA
Design step(s): Installation
Reference Number: 18548

One of the last steps of install determines the Ethernet ID for the FLEXlm license by calling lmutil in the %XILIINX%\bin\nt directory. The lmutil program runs in a command window, and on some Windows 95 systems this window does not close on its own.

Workaround: If you allow the install to reboot the machine, the window is closed by the reboot. Otherwise, you need to click the Close button on the window.

Cannot print on NT parallel port printer after installing M1.3 software

Platform(s): Windows NT
Architecture(s): All
Design step(s): Installation
Reference Number(s): 18406

If you are using NT 4.0 with a printer connected to the parallel port, you may not be able to print after you install the Xilinx M1.3 software. The JTAG Programmer needs a BASJDRV.SYS driver installed in order to access the parallel port on NT 4.0 which causes a conflict with the printer driver.

You can turn off the driver by following these steps:

1. Through **Start** → **Settings**, open the control panel. Double click Devices. Look for BasJdrv.

2. Click on Stop. NT will stop the driver as long as you are not using the JTAG Programmer. You can print now. This driver must be stopped before trying to print.

3. After printing, close your application. Go to **Control Panel** → **Devices**. With BasJdrv selected, select Startup. No need to reboot the PC. It is assumed that you have administrative control of your NT workstation.

Design Entry

Change → LogiBLOX does not reliably update symbol in Workview Office

Platform(s): PC
Architecture(s): All FPGAs
Design Step(s): Design Entry
Reference Number(s): 13192

When using the **Change** → **LogiBLOX** command within Workview Office, if the symbol is modified (pins added or removed, for example), the changes may not be seen immediately. Also, if the module type has been changed, the icon boundary may not be changed to match the new symbol. This is a problem with Viewcell.

Workaround: In most cases, closing and then re-opening the schematic will be enough to refresh the symbol instantiation. For some cases, it may be necessary to quit then re-invoke ViewDraw itself.

Translation

NGDBuild may issue a "Pin Mismatch" warning on a LogiBLOX design

Platform(s): All
Architecture(s): All FPGAs
Design Step(s): NGDBuild
Reference Number(s): Solution Record 2234

A common problem with the usage of LogiBLOX is that the wrong Vendor is chosen during Setup. If the bus notation of the LogiBLOX .ngo file differs from the bus notation of the schematic/HDL tool (that is, mybus<3> is not equal to mybus[3]), then a warning will be issued.

Workaround: To correct this problem, choose the correct Vendor in Setup or specify the Bus Notation desired in Setup. If using an HDL tool, paste the VHDL or Verilog template (.vhi and .vei respectively) into your code to instantiate the module.

Vendor field must be set in Implementation Options for correct back-annotation of EDIF designs

Platform(s): All
Architecture(s): All
Design Step(s): Implementation
Reference Number(s): 18398

When back-annotating designs for timing simulation, the NGD2EDIF program needs to know which interface to create the EDIF netlist for. When implementing designs through the GUI (Design Manager), specify the Vendor in the Implementation Options dialog box.

From the Implementation window, click on the Options button, and select the Interface tab. Use the Vendor pull-down menu to select the appropriate Interface (for example, Mentor).

Not specifying an interface vendor may result in problems while trying to translate a back-annotated EDIF file to a vendor specific simulation file. For example, not specifying Mentor as the vendor interface for a Mentor design will cause the following error to occur during pld_edif2tim:

```
Error: Cannot find library specified "/home/user/
SIMPRIMS"
```

Replace_fpga removes Set_false_path and Set_max_delay (Synopsys)

Platform(s): Workstation
Architecture(s): All FPGAs
Design Step(s): Synopsys
Reference Number(s): 15615, 15617

When you use the Set_false_path command in the FPGA Compiler V3.4b or V3.5a, the Replace_fpga command removes this command from your working environment. As a result, Write_script does not find this command and does not create an accurate DC file.

To solve this problem, re-apply the Set_false_path and Set_max_delay commands after Replace_fpga. Also, you must use the full hierarchical names with the Set_false_path and Set_max_delay commands.

CSTTRANS translates IOB location constraints as INST (instance) instead of NET (signal name) constraints

Platform(s): All
Architecture(s): All
Design Step(s): csttrans
Reference Number(s): 15114

CST (XACT*step* 5.x *.cst) files may be translated to *.ucf files using the utility csttrans. In CST format IOB location constraints were "place instance" constraints:

place instance sigA : P13;

CSTTRANS translates this statement to INST constraints in the UCF format for use in the M1 flow:

INST "sigA" LOC = "P13";

Since the example signal "sigA" is the name of an external net, and not an instance name, an IOB location constraint in the UCF format must be a NET constraint:

NET "sigA" LOC = "P13";

The resulting ucf file created by csttrans must be edited to reflect this change.

Some XNF files created before vM1.3 software cannot be read by vM1.3 software

Platform(s): All
Architecture(s): XC9500, XC7300
Design Step(s): Design Translation
Reference Number(s): NA

The following XNF netlists cannot be read by vM1.3 for CPLD families:

- generated from a PLUSASM equation file (.pld) or XABEL's PLUSASM flow

- containing any XC7300 arithmetic

- containing any DFF symbols with CE input pins

Workaround: For XNF files derived from PLUSASM, use the PLUSASM .pld file as the design input instead of the XNF file. For XC7300 arithmetic designs, you must create a new netlist based on the vM1.3 schematic macro library.

Implementation

MAP does not validate carry logic chain directionality

Platform(s): All
Architecture(s): 4000EX/XL
Design Step(s): Implementation (MAP)
Reference Number(s): 12929

In the 5.x versions of the XACT*step* Core Tools, all logical and physical DRC checking of an input design was performed up front by a single program, XNFPREP. This contrasts with DRC checking in the M1 Core Tools, which is distributed over several programs: NGDBuild, MAP, and PAR. Syntax checking is done in NGDBuild. logical and most physical DRC is done by MAP, and placement related DRC checking is mainly done by PAR.

As a result, location constraints written to the .PCF file by MAP will not be fully validated until the initial stages of PAR. This includes checking for the validity of carry chain direction.

Errors in carry logic chain directionality may be reported by PAR when converting designs from the 4000 or 4000E architectures to the 4000EX architecture, since carry logic is bidirectional in XC4000 and XC4000E, but unidirectional (downward only) in XC4000EX.

Workaround: None

There are a number of CLB combinations that MAP does not support in the M1.3 release

Platform(s): All
Architecture(s): XC4000E/EX/XL
Design Step(s): Implementation (MAP)
Reference Number(s): 11202, 12429

A number of valid logic combinations which are supported in the XC4000E/EX/XL architecture are not supported in the M1.3 Mapper.

Problems may be seen if you try to specify these logic configurations in your designs using some combination of RLOC, LOC, and BLKNM properties.

Two basic types of logic combinations fall in this category:

- Logic combinations requiring the DI pin when it does not directly source a CLB flip-flop or a RAM data input.

- Dual output logical components that map to the F and G LUTs of a CLB, and whose outputs both drive a single LUT constrained to the H-LUT in the same CLB. DPRAM (dual port RAM) and RAM16x2 are examples of such components which may see this problem.

The specific unsupported configurations are described in detail in the Mapper section of the M1.3 Conversion Guide under the heading, "Unsupported CLB Configurations in Map M1.X".

Workaround: Since these configurations cannot be implemented by the Mapper, as a workaround you must configure the CLB as desired in the EPIC Design Editor, create a physical macro from this configuration, and instantiate the macro in your design.

Merging components with RPMs together by attaching the same LOC (location) constraints for both is not supported

Platform(s): All
Architecture(s): All FPGAs
Design Step(s): Implementation (MAP)
Reference Number(s): 10571

It is not possible to attach the same LOC constraint(s) to locate a component (for example, a MUX) to the same locations as an RPM in the hopes of merging them together into the same CLBs. This problem occurs because the CLBs built for an RPM are converted early on by the Mapper into physical macros, which are impermeable.

RPMs can be merged with other, non-constrained components only.

Workaround: If you wish to merge the logic in an RPM with some other block of logic to the same location, you must manually merge the blocks of logic first, then constrain the merged logic.

MAP places higher precedence on F and H function generator combinations that it detects than on user-specified BLKNM constraints

Platform(s): All
Architecture(s): All FPGAs
Design Step(s): Implementation (MAP)
Reference Number(s): 11585, 12904, 12934, 12238

MAP sometimes ignores user-specified constraints like BLKNM properties because it calculates F and H function generator combinations before looking at these constraints.

Workarounds:

- To prevent specific logic from being combined into a CLB, you can attach a different BLKNM (for example, BLOCK2) to that logic that you do not want combined.

- In general, you can always configure the CLB as desired in EPIC, create a physical macro, and then instantiate the macro in your design.

MAP does not support locking signals to specific CLB pins, that is, it does not support CLB pin locking

Platform(s): All
Architecture(s): All FPGAs
Design Step(s): Implementation (MAP)
Reference Number(s): 18417

M1.3 MAP does not support locking signals to specific CLB pins (CLB pin locking), which is different from XACT*step* 5.2/6.0. Although MAP does support partitioning logic (via LOC and RLOC properties) to specific function generators or flip-flops (via .FFX, .FFY, .G, and .F location constraint extensions), PAR may occasionally swap the F and G function generator and/or the FFX and FFY flip-flops to improve routing performance and/or routability.

What this means is that you cannot reliably lock signals to a specific function generator or flip-flop in a CLB by using .FFX, .FFY, .G, and .F location constraint extensions, or by making explicit connections to specific pins on a map symbol.

The exception occurs when BEL-level (specific function generator and flip-flop) location constraints are used to guide construction of RPMs that utilize carry logic. In this case, PAR will not swap the input pins and function generators.

Function generator and flip-flop swapping within CLBs by PAR may pose a problem for existing XACT*step* designs that are tightly constrained due to density and/or performance requirements.

Workaround: Configure the CLB as desired in EPIC, create a physical macro, and then instantiate the macro in your design.

NGDBuild is case-sensitive to timing group names defined by TNM and TIMEGROUP

Platform(s): All
Architecture(s): All
Design Step(s): NGDBuild
Reference Number(s): 16551

When specifying TIMESPECs or TIMEGROUPs in a design or constraint file, make sure to reference any timing group names using the same case as used in the TNM or TIMEGROUP that defined the names.

NGDBuild reports that a logical block Is 'unexpanded' but an .ngd file is still generated

Platform(s): All
Architecture(s): All
Design Step(s): NGDBuild
Reference Number(s): 16677

The .ngd file with 'unexpanded' blocks will cause design implementation software to fail with an error. If NGDBuild reports that a block is 'unexpanded', it is likely that you are missing a netlist file. Make sure that all netlist files can be found/translated by NGDBuild.

(In addition to "map", the above Known Issue also applies to CPLD's "hitop" core program.)

Too many timespec paths can cause out-of-memory failure

Platform(s): All
Architecture(s): XC9500, XC7300
Design Step(s): Design Implementation
Reference Number(s): 18405

If your timespecs are too general, you may create too many timespec paths.

Workaround: If the software aborts due to an out-of-memory error, try making your timespecs more specific, naming only the I/O pads and flip-flops that have critical timing requirements in your design.

Spaces in file or directory names not allowed

Platform(s): All
Architecture(s): All
Design Step(s): All
Reference Number(s): 14453

The Graphical and command line tools do not recognize file names, directory names, or directory path names with spaces in them. The tools interpret them as separate arguments and will error with a message about illegal command line arguments.

Workaround: Use underscores instead of spaces.

XC4000E designs ported to XC4000XL may have unroutable carry chains

Platform(s): All
Architecture(s): XC4000E, XC4000XL
Design Step(s): PAR
Reference Number(s): Solution Record 2408

The XC4000XL and XC4000EX parts support only bottom-to-top carry chains. The XC4000E parts support both top-to-bottom and bottom-to-top carry chains, so designs originally targeted for these parts may contain Relationally Placed Macros (RPMs) with carry chains that are unroutable in the XC4000EX and XC4000EX parts. This condition is flagged by PAR.

Workaround: This problem can be avoided by modifying the input design or by remapping the design using the -ir switch which specifies that RLOC constraints be used to guide mapping of CLBs, but not to determine relative location of CLBs. This strategy allows PAR to create a routable placement.

Simulation File Creation

Some third party tools may have problems handling the escaped names in the Verilog netlist created by NGD2VER

Platform(s): All
Architecture(s): All
Design Step(s): NGD2VER
Reference Number(s): 7734

An "escaped" Verilog name is prefixed by a "\" character, and is terminated by a blank space.

The NGD2VER netlister converts any name in a design to an "escaped" Verilog name if the design contains any Verilog-illegal net or block names. Since "." (when not used for Verilog hierarchy) and "/" characters fall in this category, and are fairly common in the files generated by the M1.3 core tools, escaped names will be generated by NGD2VER in almost all cases.

Workaround: Write a script to globally replace all Verilog-illegal characters (including \") in your NGD2VER output Verilog netlist with a Verilog legal character ("_" will usually work).

When using NGD2VER, use the correct command line options appropriate for your Verilog simulator

Platform(s): All
Architecture(s): All
Design Step(s): Simulation
Reference Number(s): 17249

For a definition of the command-line options of NGD2VER, refer to the *Cadence/Interface User Guide* or the *Development Systems Reference Guide*.

Functional Simulation

RTL and post-synthesis Verilog functional simulation support of Synopsys (non-Cadence) designs will not be available in the M1.3 release

Platform(s): All
Architecture(s): All
Design Step(s): Simulation
Reference Number(s): NA

M1.3. only supports:

- Concept functional simulation (via HDL Direct)

- All post-NGDBuild simulation, via the SIMPRIM-based Verilog libraries and NGD2VER netlister included in the core tools. This includes:

    - post-NGDBuild functional simulation

    - post-MAP timing simulation (optional)

    - post-route timing simulation

RTL and post-synthesis support will be targeted for the M1.4 time frame.

Timing Simulation

Tactical VITAL front-end unified libraries will not be included in M1.3

Platform(s): All
Architecture(s): All
Design Step(s): timing simulation
Reference Number(s): 18397

These libraries will be officially included and supported in M1.4.

Timing Analysis

Long timing analysis and timing-driven PAR runtimes

Platform(s): All
Architecture(s): XC4000E, XC4000EX, XC4000XL
Design Step(s): TRCE, ITA_FPGA, PAR
Reference Number(s): 15792, 17309

Timing analysis runtimes for XC4000E, XC4000EX, and XC4000XL designs may be very long, depending on the timing constraints specified and the design circuit topology. Use the XILINX_PATHLIMIT environment variable to lower the number of paths analyzed during timing analysis to reduce runtimes.

Setting the XILINX_PATHLIMIT variable to a low number reduces the number of paths analyzed, and consequently reduces the runtime needed to run TRCE, ITA_FPGA, and PAR. When using this environment variable, a message is displayed indicating that analysis has been truncated. Following is a sample message:

```
WARNING:0 - The current connection evaluation limit of
1000 caused the truncation of timing analysis for
paths through 2.88% of constrained connections, which
may limit the accuracy of this analysis. You can
specify a larger limit with the XILINX_PATHLIMIT
environment variable to increase the accuracy of this
analysis.
```

This message indicates the percentage of design connections where analysis was truncated in order to reduce overall runtime. If this message appears, analysis is incomplete and may not guarantee correct timing results. You are encouraged to use the largest limit possible that provides an acceptable runtime in order to ensure the most accurate timing analysis possible.

Clock skew not accounted for in path analysis

Platform(s): All
Architecture(s): XC4000EX, XC4000XL
Design Step(s): TRCE, ITA_FPGA, PAR
Reference Number(s): 8748

The Timing Analyses tools do not account for clock skew in setup checks of register-to-register paths that are clocked by BUFGLS and BUFGE buffers with a common source.

Downloading and Configuration

The Hardware Debugger software on HP machines cannot communicate with the serial ports when HPUX 10.x is running

Platform(s): HPUX 10.x
Architecture(s): All
Design Step(s): Download
Reference Number(s): 13186

The serial ports on HPUX 10.x have names of type tty0p0, but the Hardware Debugger can only communicate with HPUX 9.x serial port names like tty00.

Workaround: Run Hardware Debugger on a PC.

JTAG Programmer → Cable setup does not work

Platform(s): All
Architecture(s): XC9500
Design Step(s): Downloading
Reference Number(s): 17789

When attempting to connect the download cable always use the **Output → Cable Auto Connect** function. The **Output → Cable** Setup command results in the display of a communication error alert box:

```
Communications with the cable could not be
established...
```

There is no way to resume.

Workaround: try to connect to the cable using **Cable → Auto Connect**. You may have to exit JTAG Programmer and re-invoke it in order for this to work.

Security

Node locked license may not start if your C drive serial number begins with a zero

Platform(s): PC
Architecture(s): NA
Design Step(s): NA
Reference Number(s): 16413

The licensing scheme may not work with an 8-digit C: Drive Volume Serial Number beginning with a 0.

There are two solutions:

*   Use a floating license instead of the node-locked license.

*   Use the Ethernet address instead of the C:\ Drive Volume Serial Number.

    To find this address, type the following from an MS-DOS prompt:

    full_path_to_Xilinx_executables\`lmutil lmhostid -ether`

In either case, contact Customer Service to obtain a new license.

Cadence

Do not use 9604 or earlier releases with the M1.3 Cadence interface

Platform(s): All
Architecture(s): All
Design Step(s): Design Entry, Translation
Reference Number(s): 18410, 18414

The *Cadence Interface/Tutorial Guide* indicates that you may use the M1.3 interface with the Cadence 9604 and earlier releases. It also states that customers using the 9604 and earlier releases should download the 97A netlister from Cadence.

Cadence only supports the M1.3 release officially with their 97A and later releases.

Workaround: N/A

LogiBLOX modules in Concept schematics will not be translated properly without the addition of a `parameter "cds_action=ignore"' specification to the verilog.v file for the module (Cadence)

Platform(s): All
Architecture(s): All
Design Step(s): Translation
Reference Number(s): 12498

LogiBLOX is not integrated into the Cadence Concept schematic editor, and must be run standalone. As a result, the process involves some manual intervention. The interface format between the Concept schematic editor and LogiBLOX is the .v file generated by LogiBLOX. You may see an error like the following:

```
Expanding design hierarchy ...
Unknown child port decl:   o
Occurrence andblox_0 -> top_lib.X_AND2.hdl:
Error! Architecture not found in your design library.
```

OR:

```
Expanding design hierarchy ...
Occurrence AND1BINLD0 -> topcounter_lib.X_AND2.hdl:
Error! Architecture not found in your design library
```

Workaround: After running LogiBLOX for a Cadence

Concept schematic, the following statement must be added to your LogiBLOX module's verilog.v file somewhere at the beginning of the Verilog module declaration for the block.

parameter cds_action="ignore";

Note: This statement must be added *after* a symbol has been generated using GENVIEW. The verilog.v file will be located in the "logic/" subdirectory of your LogiBLOX module after you run GENVIEW as follows:

genview –i *logiblox_module_name***.v –v logic body verilog**

CONCEPT2XIL, a Cadence program, generates "Architecture not found" errors

Platform(s): All
Architecture(s): All
Design Step(s): Translation (CONCEPT2XIL)
Reference Number(s): 14230

CONCEPT2XIL calls three subprograms: HDLCONFIG, VAN (Verilog Analyzer), and SIR2EDF. The general meaning of "architecture not found errors" is that one of these programs could not find a certain model, or "view" of a given cell in your design. This cell could either be one of the subblocks in your design or a library component instantiated in your design.

Following is a sample error message:

```
Occurrence p1$9p -> calc_lib.synonym.hdl:
Error! Architecture not found in your design library
```

The occurrence name (p1$9p) corresponds to the value of the PATH property in your Concept schematic. The expansion of the cell name, in terms of the analyzed Verilog, is *library.cell.view*. The netlister looks for the *HDL view* of the cell called *"synonym"* in the Unified library. When the netlister does not find the cell, it looks in your design library (calc_lib in this case).

"Architecture"— refers to a "block" or component in your design (the reference to "architecture" originated from the keyword, "ARCHITECTURE" in the VHDL language, which just means "a block in a design").

view — one of the representations of that "architecture" or block.

For Concept designs saved under HDL Direct, you can have any of the following views (or models) for a given cell:

• a Schematic view

• a LOGIC view

• an HDL view or representation of a block

• a Symbol (Body) view

The LOGIC view is generated by HDL Direct when you save your Concept schematic, and consists of:

- viewprps.prp properties file (contains all schematic properties)

- verilog.v file (structural Verilog description of the design block)

- a (S)tructural (I)ntermediate (R)epresentation format (SIR) file, which is generated by the VAN netlister.

  The SIR file is generated by VAN (Verilog Analyzer), one of the subprograms called by the CONCEPT2XIL script.

In general, when you get an "Architecture Not Found" error, the error indicates that a particular view is absent, either:

- in one of the cells in the Target library in your cds.lib file (for example, xce4000ex_syn), or

- in one of your user blocks in the DESIGN_LIB directory that CONCEPT2XIL creates for your design,

The exact "view" that is missing depends on which CONCEPT2XIL subprogram (VAN, Verilog Analyzer, or SIREDIF) issues the error message.

First workaround

If the error comes from the SIR2EDF subprogram, this means that the SIR2EDF subprogram has searched through both the target and design libraries, *target_arch*_syn and *design*_lib, and was unable to find a .SIR file in the HDL/ subdirectory for a particular design block or subblock.

For a given library cell (usually in $XILINX/cadence/data/ *target_library*_syn) or user block, (from *design*_lib in your run directory), you should see an "hdl/" subdirectory underlying it that looks something like this:

hdl/   verilog_lib/

If the library cell or user block has been successfully processed by VAN, there should be a .SIR file in the HDL/ subdirectory or "view":

```
master.tag    verilog.v@   vlog004u.sir    vlog004u.vla
                            ^^^^^^^^
                                |
                                |
                                    ---- .sir file
```

If the error is issued on some USER BLOCK in the design, check that:

- the CDS.LIB file exists,

- a .SIR file exists in the "hdl/" view or subdirectory for the given block in your *design_*lib directory.

If the error is issued on a Xilinx library component, check the following:

- that the CDS.LIB file exists

- the path to the target library specified in the CDS.LIB file is correct

- the specified cell exists in this library

- the cell in the library you are targeting has an "hdl" view (subdirectory) containing a .SIR file

  (If the .SIR is missing, it may be that the library was not VAN-analyzed successfully, or that the library was somehow corrupted.)

- the .sir file in the hdl subdirectory of the library cell is the same version as those written to *rundir* / *design_lib* / *cell* / hdl

Example:

```
> Running sir2edf version 97A-2.4 11/05/96 10:16 (cds9252).
> Copyright (c) 1992-1995 Cadence Design Systems. All Rights Reserved.
>
> Initializing environment ...
> Loading property format file ...
> Loading design unit ...
> Expanding design hierarchy ...


> Occurrence p1$9p -> calc_lib.synonym.hdl:
> Error! Architecture not found in your design library
>
```

In this example, the error is reported on a component called "synonym" in a design called "calc". This indicates that there is a component containing a SYNONYM body or cell in the design.

An error is generated because CONCEPT2XIL requires that only HDL Direct compliant library components be used, and "SYNONYM" happens to be a non-HDL Direct component from the STANDARD library.

Components from the STANDARD library are *not* HDL Direct compliant.

There are two solutions.

• Add a library to the CDS.LIB that contains an HDL Direct compliant SYNONYM cell.

or

• Remove the offending cell from the design and substitute a different component that is HDL Direct compliant.

Second Workaround

If the error is coming from the VAN subprogram, check the cds.lib file in your design directory for following:

• the cds.lib file exists and the target library, *target_arch*_syn, is defined in your cds.lib file.

• the path to the target library specified in the cds.lib file is correct.

• the referenced cell exists in the library you are targeting in your cds.lib file. (Note that the name must match when it does a case-sensitive search.) If not, it may be that the library was not VAN-analyzed.

• You have enabled HDL Direct in Concept before saving each block of your design. This will generate the views required by CONCEPT2XIL for each block of your design.

Third Workaround

Trying to use pre-M1 libraries (for example, xblox5, xc4000, xm4000) in your design can also generate the error message. CONCEPT2XIL supports M1 Concept libraries only. Check to make sure you are not using any of these libraries.

Fourth Workaround--LogiBLOX designs

The error message may also be seen from the SIR2EDF subprogram of CONCEPT2XIL if you are using LogiBLOX in your design. Integrating the LogiBLOX module into your Concept schematic requires that you use GENVIEW to generate a symbol from the LogiBLOX-generated .v file. GENVIEW copies the LogiBLOX .v file into the logic view for that block as

> *block_name* / logic / verilog.v

There is an additional, required step that you must perform manually after the symbol body is generated; you must edit the verilog.v file and add the following parameter declaration to the beginning of the module declaration for the LogiBLOX module:

```
parameter cds_action="ignore";
```

This statement lets the CONCEPT2XIL netlister know that it should not expect to find any more levels of hierarchy below this block. Otherwise you will get an error from SIR2EDF that looks like:

```
Running sir2edf version EXP-2.9 01/12/97 20:17 (cds9244).

Copyright (c) 1992-1995 Cadence Design Systems. All Rights Reserved.


Initializing environment ...

Loading property format file ...

Loading design unit ...

Initializing mapping tables ...

Expanding design hierarchy ...

Occurrence FLOP0 -> test_lib.X_FF.hdl:

Error! Architecture not found in your design library
```

Fifth Workaround

The error message is also seen in SIR2EDF if there is a "use" directive in the global.cmd, but there is a missing reference to a user-defined subblock in the .WRK file (SCALD user library mapping file) for the project directory.

NGDBuild yields the following error message: "ERROR:based:48-..Duplicate port a in cell "alias_bit"

Platform(s): All
Architecture(s): All
Design Step(s): CONCEPT2XIL
Reference Number(s): 8750

NGDBuild or EDIF2NGD may issue the following error on a Concept design that contains buses:

```
ERROR:based:48 - On or above line 371 in file
"calc.edf": Duplicate port a in cell "alias_bit".
This likely means that the EDIF netlist was improperly
written. Please contact the vendor of the program that
produced this EDIF file.
```

One cause of this message is tapping bits off a bus (with the SLICE or TAP symbol) and labeling those nets incorrectly. With the HDL Direct flow, you cannot "rename" these nets. "Renaming" a bus means naming a bus bit using any deviation from the "busname<bit_number>" convention.

Workaround: For instance, if you tap bit 5 off a bus called "mybus", 8 bit bus "mybus<7..0>", then the net that comes from the SLICE or TAP must be either unnamed, or labeled as "mybus<5>". You may not use the name, "mybus5".

To rename a net that has been sliced/tapped off a bus, you may also run the net to a BUFF, and then rename the output of the BUFF to a new netname.

Consult Cadence's OpenBook and also Xilinx's *Cadence Interface/Tutorial Guide* for more information on HDL Direct naming methodology.

The Cadence script XIL2CDS hangs after displaying the following to the screen:

```
***********************************************************

* Copyright

(C) 1995,1996 * * Cadence Design Systems Inc. All Rights Reserved. * *
xil2cds 1.4 *
***********************************************************
```

Platform: HP-UX v10.20
Architecture: All
Design Step: XIL2CDS v 1.4
Reference Number: 16433

Workaround: This was a bug in HP-UX v10.20. The HP-UX .CSH patch B.10.20 must be installed to solve this problem.

(XIL2CDS is only supported on HP-UX version 10.20 on the HP platform for the M1 release)

Chapter 10

Xilinx Customer Support Information

For registration, authorization codes, update information, warranty status, shipping, product issues, and technical support, call Monday through Friday, 8 a.m. to 5 p.m. Pacific time.

Registration, Authorization, and Customer Service

- United States and Canada (1-800-624-4782)
- Europe (Contact your local Distributor)
- Japan (81-33-297-9912)
- Southeast Asia/All Other Countries (852-2424-5200)
- Facsimile Transmission (1-408-559-0115)

Technical Support

Hotline Access and Hours

Location	Telephone	Electronic Mail	Hours
U.S. and Canada	1-800-255-7778	hotline@xilinx.com	Mon, Tues, Wed, Fri: 6:30 a.m. – 5:00 p.m Thurs: 6:30 a.m. – 4:00 p.m Pacific Standard Time
Japan	81-33-297-9163	jhotline@xilinx.com	Mon, Tues, Thurs, Fri: 9:00 a.m. – 5:00 p.m Wed: 9:00 a.m. – 4:00 p.m

Location	Telephone	Electronic Mail	Hours
France	33-1-3463-0100	frhelp@xlinx.com	Mon – Fri: 9:30 a.m. – 12:30 p.m 2:00 p.m. – 5:30 p.m
Germany	49-89-9915-4930	dlhelp@xilinx.com	Mon – Thurs: 8:00 a.m. – 12:00 p.m 1:00 p.m. – 5:00 p.m Fri: 8:00 a.m. – 12:00 p.m 1:00 p.m. – 3:00 p.m
United Kingdom	44-1-932-820821	ukhelp@xilinx.com	Mon – Thurs: 9:00 a.m. – 12:00 p.m 1:00 p.m. – 5:30 p.m Fri: 9:00 a.m. – 12:00 p.m 1:00 p.m. – 3:30 p.m

- Technical Support FAX (24 hours/7 days) (1-408-879-4442)
- Technical Support BBS (24 hours/7 days) (1-408-559-9327)
- Internet E-mail Address (24 hours/7 days) (hotline@xilinx.com)
- Xilinx Worldwide Web Site (http://www.xilinx.com)

Training

- Xilinx Training Administrator (1-408-879-5090)
- International customers, contact your local sales representative or distributor.

Appendix A

Registry Entries

This appendix describes entries that are made to the Registry during Alliance M1.3 for Windows NT 4.0 on PCs.

Core Technology

The following sections describe the environment variables and paths that are added to the Registry for various installation options. Four keys to HKEY_LOCAL_MACHINE\SOFTWARE are added.

Xilinx\Alliance M1\vM1.3\user

Xilinx\Alliance M1\vM1.3\company

Xilinx\Alliance M1\vM1.3\serial

Xilinx\Alliance M1\vM1.3\setup

The setup is created with values based on what type of install you performed.

For Windows NT 4.0, the global environment variables, XILINX and XILINX_CD and the path to the bin\nt directory are added to the following environment:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SessionManager
\Environment.
```

For Windows 95, the global environment variables, XILINX and XILINX_CD and the path to the bin\nt directory are added to the autoexec.bat file instead of the Registry.

Typical or Lab Install

All of the updates are made to the System area of the environment, not to the User area. If you install the DynaText browser, 64 keys are also added. Refer to the "Online Documentation" section for details.

Windows NT 4.0

If during installation you decided to have your environment variables and path updated, the XILINX variable is set to the destination directory that you specify. The XILINX_CD variable is set to the source directory from which the software is being installed.

The value %XILINX%\bin\nt is prepended to the existing path variable if it is not already there; for example,

> %XILINX%\bin\nt + %PATH%

If there is no value, %XILINX%\bin\nt is added.

Windows 95

In the autoexec.bat file, the path %XILINX%\bin\nt is prepended to the PATH statement, if there is an existing path statement:

> PATH=%XILINX%\bin\nt + %PATH%

If there is no PATH statement, %XILINX%\bin\nt is set up as the PATH:

> PATH=%XILINX%\bin\nt

Run From CD or Network

The XILINX variable is set to the destination directory that you specify. The default is the source directory.

Windows NT 4.0

The value %XILINX_CD%\bin\nt is prepended to the existing path variable if it is not already there; for example:

> %XILINX_CD%\bin\nt + %PATH%

If there is no path, %XILINX_CD%\bin\nt will be added.

Note: Make sure there is a CD drive in the path.

Windows 95

In the autoexec.bat file, the path %XILINX_CD%\bin\nt is prepended to the PATH, if there is an existing path statement:

> PATH=%XILINX_CD%\bin\nt + %PATH%

If there is no PATH statement, %XILINX%\bin\nt is set up as the PATH:

PATH=%XILINX_CD%\bin\nt

Online Documentation

The following subsections describe the environment variables and paths that are added to the Registry for various installation options.

Typical

Keys for the DynaText browser are added to HKEY_CLASSES_ROOT. These keys are listed in the %xilinx%\bin\nt\ebtcom.reg file.

The XILINX variable is set to the destination directory that you specify. The default is the current value of XILINX.

The XILINX_CD variable is set to the source directory from which the software is being installed.

The value %XILINX_CD%\bin\nt is prepended to the existing path variable if it is not already there; for example:

%XILINX_CD%\bin\nt + %PATH%

If there is no path, %XILINX_CD%\bin\nt will be added.

Note: Make sure there is a CD drive in the path.

Run From CD or Network

The XILINX variable is set to the destination directory that you specify. The default is the source directory.

Windows NT 4.0

The value %XILINX_CD%\bin\nt is prepended to the existing path variable if it is not already there; for example:

%XILINX_CD%\bin\nt + %PATH%

If there is no path, %XILINX_CD%\bin\nt will be added.

Note: Make sure there is a CD drive in the path.

Windows 95

In the autoexec.bat file, the path %XILINX_CD%\bin\nt is prepended to the PATH, if there is an existing path statement:

PATH=%XILINX_CD%\bin\nt + %PATH%

If there is no PATH statement, %XILINX%\bin\nt is set up as the PATH:

PATH=%XILINX_CD%\bin\nt

Note: Make sure there is a CD drive in the path.

NT Registry Entries For the Download Cable Driver

This section describes the NT Registry entries that are created when loading or using the driver for the download cable. If you answer Yes to the question "Do you want to load the CPLD driver needed to use the download facility?, the following entries are made to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services on your NT:

```
Key Name:          SYSTEM\CurrentControlSet\Services\BasJdrv

Class Name:        <NO CLASS>

Last Write Time:   3/15/97 - 8:34 AM

Value 0
  Name:            DependOnGroup

  Type:            REG_MULTI_SZ

  Data:            Parallel arbitrator

Value 1
  Name:            DependOnService

  Type:            REG_MULTI_SZ

  Data:            Parport

Value 2
  Name:            ErrorControl

  Type:            REG_DWORD

  Data:            0x1
```

```
Value 3
  Name:              Group
  Type:              REG_MULTI_SZ
  Data:              Extended base
Value 4
  Name:              Start
  Type:              REG_DWORD
  Data:              0x2
Value 5
  Name:              Tag
  Type:              REG_DWORD
  Data:              0x3
Value 6
  Name:              Type
  Type:              REG_DWORD
  Data:              0x1


Key Name:            SYSTEM\CurrentControlSet\Services\BasJdrv\Enum
Class Name:          <NO CLASS>
Last Write Time:     3/27/97 - 12:57 PM
Value 0
  Name:              0
  Type:              REG_SZ
  Data:              Root\LEGACY_BASJDRV\0000
Value 1
  Name:              Count
  Type:              REG_DWORD
  Data:              0x1
```

```
Value 2

   Name:              NextInstance

   Type:              REG_DWORD

   Data:              0x1

Key Name:             SYSTEM\CurrentControlSet\Services\BasJdrv\Parameters

Class Name:           <NO CLASS>

Last Write Time:      3/15/97 - 8:34 AM

Value 0

   Name:              IoPortNumber

   Type:              REG_DWORD

   Data:              0xffffffff
```

Appendix B

Troubleshooting

This appendix describes possible errors or problems you might have when installing the software on PC and workstations.

All Systems

This section addresses errors that might happen on all systems.

Insufficient Space for the Installation

The Setup program indicates if sufficient space is not available. If this error occurs, then you need to increase your disk space or install the core executables and a limited set of the remaining software.

Data is Removed from the Installation Directory

Xilinx strongly recommends that you install this release of the software in a completely separate directory from any earlier Xilinx releases.

Mouse Is Incompatible

If your mouse is incompatible with the installation program, use the keyboard commands listed in the following table to navigate and select objects on the screen.

Table 10-1 List of Keyboard Commands

Key	Action
Tab	Traverse objects forward and highlight them
Shift-Tab	Traverse objects backward
Enter	Activate selection button or high-lighted list item, including menu items Highlight list item
Arrow keys	Scroll up or down inside selection boxes, including menus
Alt-*Character*	Select menu
Esc	Unselect menu Exit Help window

PC Installations

This section addresses errors that might happen only on a PC.

Mouse Fails

The following covers possible solutions for failures you might have with your mouse.

- Your installation program does not have a built-in mouse driver. Make sure the mouse driver that you are using is compatible with Windows 95 or Windows NT.

- If you do not have an Windows-compatible mouse, refer to the "List of Keyboard Commands" table for information on how to enter commands from the keyboard.

Program Icons Were Not Created By Setup

If the Xilinx Setup program did not create a program group for your Windows tools and program icons for each individual tool, use the following instructions to create program groups and icons for products you have installed. The following procedure applies to both Windows 95 and Windows NT 4.0.

1. To create a new program folder, click the right mouse button on **Start**. Select **Open**.

2. After the Start Menu window displays, select **File** → **New** → **Folder**. A new folder displays in the window.

3. Type a name for the new folder and press Return.

4. With the new folder selected, click **File** → **New** → **Shortcut**. The Create Shortcut window displays.

5. From the "Program Paths" table, enter the path in the Command line list box corresponding to the shortcut you want to create. The table assumes the software is installed in c:\xilinx.

Table 10-2 Program Paths

Program Description	Path	Working Directory
Design Manager	c:\xilinx\dsgnmgr.exe	drive:*xactuser*
Timing Analyzer	c:\xilinx\timingan.exe	drive:*xactuser*
Hardware Debugger	c:\xilinx\hwdebugr.exe	drive:*xactuser*
PROM File Formatter	c:\xilinx\promfmtr.exe	drive:*xactuser*

6. Click Next. When the Select a Title for the Program window displays, enter a name for the shortcut and click Finish.

7. When the Select an Icon window displays, select one of the icons and click Finish.

8. In the Start Menu, drag the new shortcut icon into the new program folder.

9. Move the new folder containing the shortcut into the main Program folder.

Workstation Installations

This sections describes basic problems that you may encounter during workstation installation.

Errors When Installing Files on HP Systems

If some files are not being installed on HP systems, make sure that you are using Portable File System mount as described in the "Setting Up the Portable File System (HP Systems)" section of the "Considerations for Various Hardware Platforms" appendix.

Software Installation Is Taking a Long Time

Software installation may take a considerable amount of time especially if you are installing the CAE libraries CD. The Mentor and Cadence library installs can be quite lengthy.

Considerations for Various Hardware Platforms

This chapter explains special considerations for various platforms. This chapter also describes how to reconfigure an HP system to meet system memory and swap requirements.

Setting Up the Portable File System (HP Systems)

The Portable File System (PFS) allows you to access a variety of CD-ROM file systems including the Xilinx CD-ROM, which is a Rock-Ridge Interchange format. Use PFS if you are installing Xilinx software onto an HP/UX system. You must have root access to perform the following commands.

1. When running PFS on HP-UX, the network loopback must be configured. Enter the netstat -rn command to show the network routing tables and the lo0 entry for the loopback interface.

   netstat -rn

   Following is a sample display:

```
Destination     Gateway        Flags Refs    Use  Interface Pmtu PmtuTime
15.37.113.94    127.0.0.1      UH      1      12  lo0       4608
127.0.0.1       127.0.0.1      UH      0     106  lo0       4608
default         15.37.112.1    UG      0      32  lan0      1500
15.37.112.0     15.37.113.94   U       0     342  lan0      1500
```

   For 10.xx versions, make sure the following entry displays in the /etc/rc.config.d/netconf file:

   LOOPBACK_ADDRESS=127.0.0.1

2. Use the pfs_mountd to start the PFS daemons. These daemons must be running to allow network access on the server and client.

```
/usr/sbin/pfs_mountd &
```

This command maintains local and remote mounts and spawns pfs_mountd.rpc.

3. Run the pfsd command.

```
/usr/sbin/pfsd 4 &
```

This command spawns pfsd.rpc. This daemon must be running on all systems designated as PFS servers.

4. Use the ps command to find out what is running on the system.

```
ps -ef | grep pfs
```

The following should be running:

```
root 1168 1167 2 17:30:30 ttyp1 0:00 pfs_mountd.rpc
root 1173 1169 2 17:30:48 ttyp1 0:00 pfsd.rpc
root 1172 1169 1 17:30:46 ttyp1 0:00 pfsd.rpc
root 1171 1169 0 17:30:45 ttyp1 0:00 pfsd.rpc
root 1169 1068 3 17:30:44 ttyp1 0:00 /usr/sbin/pfsd 4
root 1170 1169 0 17:30:44 ttyp1 0:00 pfsd.rpc
root 1167 1068 0 17:30:30 ttyp1 0:00 /usr/sbin/pfs_mountd
root 1175 1068 2 17:30:52 ttyp1 0:00 grep pfs
```

If all of the daemons are running, you can use the pfs_mount command to mount the Xilinx CD-ROM:

```
pfs_mount -t rrip -x unix /dev/dsk/device_name /cdrom
```

where *device_name* indicates the name of the CD-ROM device. Ask your System Administrator for the *device_name*.

Setting Up Memory and Swap Space (HP Systems)

Out of memory problems on the HP platform may be caused by kernel limitations. The default HP kernel is configured to allow only a maximum allocated swap space per process of 64 MB. This size might not be sufficient when working with some of the larger Xilinx devices.

The System Administrator may need to reconfigure the UNIX kernel to use more than the default values. Some recommended sizes for specific parameters are as follows:

maxdsiz = default 64MB changed to ---->640 MB
maxtsiz = default 64MB changed to ---->640 MB

maxssiz = 8 MB -----> 64 MB
maxupr = 75 ----->100

These parameters indicate the maximum amount of memory for any one process.

The parameter maxdsiz is the data partition (allocated data space).
The parameter maxtsiz is the text partition (actual program size).
The parameter maxssiz is the stack partition (recursive calls).
The parameter maxupr is the maximum number of user processes.

To reconfigure the kernel, perform the following steps:

1. /usr/sbin/sam

2. Choose kernel configuration.

3. Choose configurable Parameters

4. Double click and change to the indicated values for the following parameters.

   maxdsiz = default 0x4000000 changed to 0x28000000

   maxtsiz = default 0x4000000 changed to 0x28000000
   maxssiz = 0x00800000 changed to 0x4000000
   maxupr = 75 ----->100

   The "0x" in the previous parameters indicates that the values are hexadecimal. The decimal equivalents for these parameters are as follows:

   maxdsiz = default 64 MB changed to ---->640 MB
   maxtsiz = default 64 MB changed to ---->640 MB
   maxssiz = 8 MN -----> 64 MB
   maxupr = 75 ----->100

   maxdsiz is maximum data size
   maxtsiz is maximum text size
   maxssiz is the swap space
   maxupr is the maximum number of user processes

5. Choose create a new kernel. Use default from the menu and a new kernel will be created to reflect the changes and then system will be rebooted.

Assume you want to assign 64 MB as a maximum amount of memory a process can utilize, take 64 bytes x 1024 x 1024 = 67,108,864 bytes and convert the result to hexadecimal which is 4,000,000. This is the default value of the "maxdsiz." Step 4 increases the value from 64 MB to 640 MB and therefore, the value 640x1024x1024=671088640 which converts to hex value 28,000,000. Maximum user process was increased from 75 to 100 processes.

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