XACT Installation Guide

Preface

About This Manual

This manual describes the Xilinx Install program, a tool used for installing Xilinx software.

Before using this manual, you should read the Release Notes included in the Getting Started Envelope that came with your software.

Manual Contents

This manual covers the following topics.

- Chapter 1, INTRODUCTION, lists the system requirements for using the Install program and the Xilinx software.

- Chapter 2, INSTALLING ON A PERSONAL COMPUTER, explains how to install Xilinx software on a personal computer and how to authorize your software using programmable PC keys.

- Chapter 3, INSTALLING ON A WORKSTATION, explains how to install Xilinx software on a workstation and how to authorize your workstation to run the software using the Highland License Manager.

- Chapter 4, DISK SPACE MANAGEMENT, details how to minimize disk space use.

- Appendix A, TROUBLESHOOTING, lists problems you might have when running the Install program and possible explanations for these problems.

- Appendix B, INSTALLING FROM TAPE, describes the procedure used to install Xilinx software from a tape.

- Appendix C, SETTING UP THE XILINX ENVIRONMENT, explains how to manually update your configuration file.

- Appendix D, USING THE KEYBOARD FOR INSTALLATION, lists the keyboard commands used to navigate and select objects on the screen of the Install program.

Conventions

The following conventions are used in this manual's syntactical statements:

`Courier font regular`	System messages or program files appear in regular Courier font.
`Courier font bold`	Literal commands that you must enter in syntax statements are in bold Courier font.
italic font	Variables that you replace in syntax statements are in italic font.
[ ]	Square brackets denote optional items or parameters. However, in bus specifications, such as bus [7:0], they are required.
{ }	Braces enclose a list of items from which you must choose one or more.
. . .	A vertical ellipsis indicates material that has been omitted.
. . .	A horizontal ellipsis indicates that the preceding can be repeated one or more times.
|	A vertical bar separates items in a list of choices.
↵	This symbol denotes a carriage return.

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Chapter 1

Introduction

This manual explains how to install XACT 5.0 software from diskettes, CD-ROM, or tape.

- Installation on a personal computer is covered in Chapter 2.
- Installation on a workstation is covered in Chapter 3.

Requirements for Xilinx Software

Before installing the software, verify that your system meets the requirements outlined in this section.

Disk Space

To install the Development System Tools for FPGA and EPLD devices and one of the supported interfaces, you need approximately 80 to 140 MB.

Software	Approximate Space Requirements (MB)
FPGA Core	30 to 60
EPLD Core	30
Viewlogic Interface	20
OrCAD Interface	20
Mentor Graphics Interface	80

Disk space requirements for specific products are indicated during Install program execution. Chapter 4, "Disk Space Management," offers installation tips that can save disk space.

PC System Requirements

- IBM-compatible PC 386/486

- Operating system version: DOS 5.0 and above

Note: DOS 6.0 has problems with the DoubleSpace program. Xilinx recommends that you upgrade to DOS 6.21 or 6.3.

Xilinx software can also be run in a DOS shell invoked from within MS-Windows 3.1.

- RAM Memory:

The following table indicates the recommended memory for implementing your FPGA and EPLD designs. Memory requirements are design dependent. Some designs can be implemented using less than the specified memory.

Memory	Device Ranges
8 MB RAM	XC2000 (all devices) XC3020 — XC3042 XC3120 — XC3142 XC7000 (all devices)
16 MB RAM	XC3064 — XC3090 XC3020A — XC3090A XC3020L — XC3090L XC3164 — XC3190 XC4000 — XC4008 XC4002A — XC4005A XC4003H — XC4005H
24 MB RAM	XC3195 XC3195A XC4010
32 MB RAM	XC4013

Note: 460 KB of free conventional memory is also required.

- Graphics card: VGA

- One parallel and two serial ports

- Mouse: Mouse Systems or Logitech serial mouse is recommended

- CONFIG.SYS: You must have FILES and BUFFERS set to a minimum of 25

Workstation System Requirements

- Workstation types:
  - Sun4 (SPARC) with SunOS 4.1.x or SunOS 5.3
  - HP-PA Model 9000 (RISC) with HP-UX 9.01
  - HP-Apollo (mc680x0) with DOMAIN-OS SR 10.4
  - IBM RS6000 with AIX 3.2
  - DEC Alpha AXP with OSF/1 version 1.3
- Xilinx recommends 32 MB RAM
- Swap space: 50 MB
- TCP/IP software
- X-Windows display (Xapollo, HPVue, OpenWindows)

Requirements for the Install Program

The Install program has additional requirements for execution. If the requirements are not met, the program does not complete.

PC Install Requirements

On a personal computer, the following requirements must be met to run the Install program:

- ISO9660 CD-ROM drive or high-density 3 1/2" diskette drive
- Disk space: At least 2 MB on a hard-drive to run the installation program
- Memory: 8 MB of RAM

Note: Novell network is supported by the Install program.

Workstation Install Requirements

On a workstation, the following requirements must be met to run the Install program:

CD-ROM

- ISO9660 CD-ROM drive

- Disk space: 10 MB

- Memory: 16 MB of RAM

Tape

- Tape drive:

  - Sun: 1/4" cartridge drive

  - HP-PA and DEC Alpha: 4mm DDS drive

  - IBM RS6000: 8mm tape drive

- Disk space: 1 MB

- Memory: less than 1 MB

Viewlogic-Specific Restrictions

WorkView Versions 4.0 and 4.1.x are not compatible with the following:

- MS-Windows

- HIMEM.SYS memory manager

WorkView requires a 3-button serial mouse that can be set to emulate a Mouse Systems mouse using the 5-bytes Packed Binary format.

Recommended mice include:

Logitech:

- C7, C9, Series 9, Mouseman, Mouseman Combo, Trackman, Trackman, Trackman Combo

MouseSystems:

- M4, PC Mouse, White Mouse
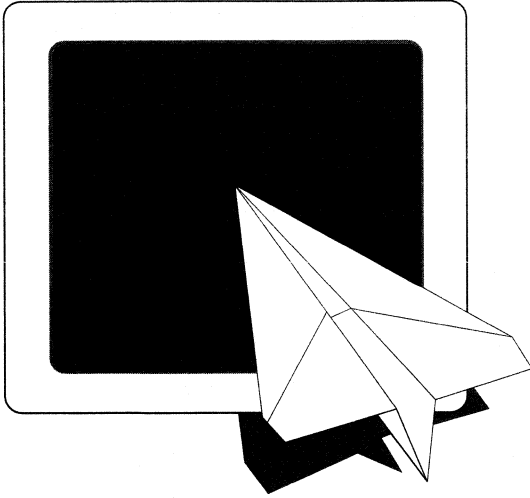
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Chapter 2

Installing on a Personal Computer

This chapter explains how to start the installation program and load your Xilinx software to a personal computer.

Starting the Installation Program

This section covers installation from diskettes or from a CD-ROM:

1. Check the system requirements defined in Chapter 1.

2. Insert the first diskette or the CD-ROM into a drive and determine the source drive letter; for example, D.

3. Type:

   D:\INSTALL↵

   By default, Install copies the software to a directory called /XACT whether it exists or not. If you have existing Xilinx software installed in the XACT directory, Install overwrites the old software with the new software.

Note: If you have enough space, Xilinx recommends that you install XACT 5.0 to a new directory. This procedure enables you to validate the new installation before removing the old software.

4. Follow the instructions on your screen.

   If you are installing on a Novell network or if you do not wish Install to update your AUTOEXEC.BAT file, refer to Appendix C, "Setting Up Your Environment" for information on how to manually update your configuration file.

5. Attach the required Xilinx keys as described in the next section.

Note: If the key is installed on the same port as an external CD-ROM drive, attach the drive to the port and then the key to the drive.

Using Xilinx PC Keys

If you are installing software on a personal computer, you are now required to install a Xilinx key with specific products.

Determining the Keys You Need

There are four types of keys: AA, AB, C, and Viewlogic.

The C key is a programmable key. In future releases, it will be the only key needed to run Xilinx software. The following table shows the keys required by each product..

XACT 5.0 Software Product	Key Serial Number (SN prefix)
DS-290-PC1 (ViewSim) DS-VLS-BAS-PC1	AA
DS-390-PC1 (ViewDraw)	AA or AB
DS-VLS-STD-PC1	AA and C
DS-502-PC1 (FPGA Core) DS-OR-STD-PC1 DS-VL-STD-PC1 DS-371-PC1[a] (Xilinx ABEL) DS-380-PC1[a] (X-BLOX)	C
DS-VLS-EXT-PC1	C and Viewlogic
All other PC1 products	No keys are required

a. If you ordered X-BLOX (DS-380-PC1) or Xilinx ABEL (DS-371-PC1), use the C key provided with your FPGA Core software or Standard Package. If you do not own FPGA Core or a Standard Package, contact Xilinx Customer Service.

Note: Save your old keys to run earlier versions of Xilinx software.

Determining if You Need a Password for Your Key

New Customers

If you are a new customer, you are provided with a C key that includes 50 evaluation runs of the software. *You must call Xilinx or your Distributor to obtain a password* to enable your key to run the software an unlimited number of times.

Existing Customers

If you have received the 5.0 software update, the C key is already authorized in most cases and you do not need to call Xilinx.

If you have the X-BLOX (SC-380) or the Xilinx ABEL (SC-371) product updates as individual products, *not included in a package*, call Xilinx Customer Support to get a password to fully enable execution of these products.

Verifying Programmable Key Capabilities

Programmable refers to the C key's ability to authorize any combination of FPGA Core, X-BLOX, and Xilinx ABEL software. The following table shows the mapping between product and licensed components.

Figure 2-1 Product Feature Mapping Chart

Product	Licensed Component
DS-502	XDE, APR, PPR
DS-371	XABEL (Xilinx ABEL)
DS-380	X-BLOX
Standard Package	XDE, APR, PPR, X-BLOX
Extended Package	XDE, APR, PPR, X-BLOX

To verify the capabilities of your C key, perform the following:

1. Attach the key to a parallel port of your Personal Computer.

2. Type the following command:

   ```
   xkey -r↵
   ```

If you are a new customer using a C key, this command generates the
following screen:

```
C:>xkey -r

xkey [v5.0.0] --  XILINX CONFIDENTIAL

Copyright (c) 1994 Xilinx Inc.  All Rights Reserved.

386|DOS-Extender 4.1 - Copyright (C) 1986-1993 Phar Lap
Software, Inc.

Key Serial #: C1234567

Feature Name   Authorization Status

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

XDE            50 evaluation runs

APR            50 evaluation runs

PPR            50 evaluation runs

XBLOX          50 evaluation runs

XABEL          50 evaluation runs

Done.
```

If you are an existing Standard or VLS Extended Package customer
using an already authorized key, the following text is displayed:

```
C:>xkey -r

xkey [v5.0.0] --  XILINX CONFIDENTIAL

Copyright (c) 1994 Xilinx Inc.  All Rights Reserved.

386|DOS-Extender 4.1 - Copyright (C) 1986-1993 Phar Lap
Software, Inc.

Key Serial #: C1234567

Feature Name   Authorization Status

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

XDE            Authorized for XACT 5

APR            Authorized for XACT 5

PPR            Authorized for XACT 5

XBLOX          Authorized for XACT 5

XABEL          50 evaluation runs

Done.
```

Note: DS-502 customers receive a limited X-BLOX license. X-BLOX is authorized for standard optimization of non-X-BLOX modules but not for synthesis of X-BLOX modules.

Authorizing a Programmable Key

Continue with this section only if your product is not yet authorized.

Note: Because all keys come with evaluation runs that enable all software to run immediately without authorization, you can begin to use the software without waiting for the authorization password.

1. Call Xilinx Customer Service to obtain the passwords for your key. You will be asked to furnish the key serial number and the names of the products to be authorized.

   To obtain the authorization codes, you must contact Xilinx Customer Service from 8:00 am to 5:00 pm (Pacific Standard time).

Southwest	408-879-4917
Northwest/British Columbia	408-879-5150
Northeast/Mid-Atlantic/Canada	408-879-4939
Central	408-879-5321
Southeast	408-879-5383
Facsimile Transmission	408-559-0115

   International (contact your local Distributor or Sales Representative)

2. Connect the key to a parallel port of your PC.

3. Type the following command:

   xkey -w↵

   This command prompts you for the serial number and passwords.

4. Locate the serial number of the key on its case and enter the serial number and passwords as shown in the following example:

```
C:>xkey -w

xkey [v5.0.0] --  XILINX CONFIDENTIAL Copyright

(c) 1994 Xilinx Inc.  All Rights Reserved.

386|DOS-Extender 4.1 - Copyright (C) 1986-1993 Phar Lap
Software, Inc.

Please enter the key serial number, a hexadecimal number
between 00000000 and FFFFFFFF, inclusive:

> C1234567

Enter password #1:

mjckafjjsgatvhc6qwd4

Enter password #2 (<RETURN> if none):


Password(s) accepted.

Update complete.

Done.
```

Note: XKey input can also be redirected from a file containing three lines of information as follows:

Example file: keyfile.dat

```
C1234567                          (Key Serial Number)
sd579fgdi6f7fklkk75h28            (Password 1)
hj2139ah1ka968yiyi7i7i            (Password 2)
```

If there is no second password, the third line of keyfile.dat should be a carriage return.

Example command:

```
C:>xkey -w < keyfile.bat
```
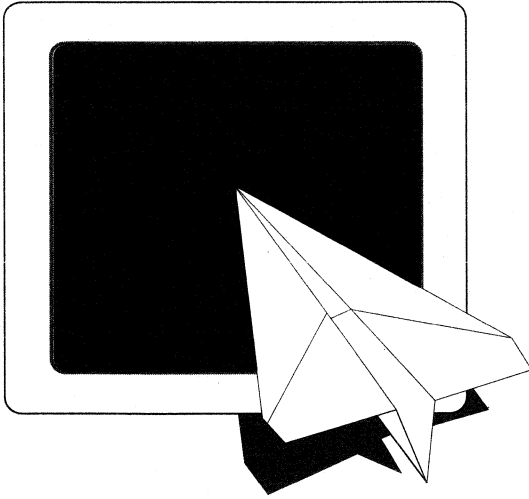
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Chapter 3

Installing on a Workstation

This chapter covers software installation on a workstation.

Note: If you are a Synopsys user, refer to your Synopsys User Guide for configuration and general installation instructions.

Starting the Installation Program

Refer to the appropriate section below, according to the media you use.

Installation from CD-ROM

1. Check the system requirements defined in Chapter 1.

2. Insert the CD-ROM into the drive.

3. Start a window manager (OpenWindows or X-Windows).

4. Execute the platform-specific commands as indicated below:

   On a Sun4:

   ```
   # mkdir /cdrom↵
   # mount -t hsfs -o ro /dev/sr0 /cdrom↵
   % /cdrom/install.↵
   ```

Note: The period must be typed as part of the install command.

   On an HP700:

   ```
   # mkdir /cdrom↵
   # mount /dev/dsk/3s0 /cdrom↵
   % /cdrom/INSTALL.\;1↵
   ```

Note: Workstation users must have root privileges to use mount commands (# = root prompt, % = user prompt). Directories and device names can vary; therefore, check these names with your system administrator.

5. Follow the instructions on your screen.

    By default, Install copies the software to the directory xact whether it exists or not. If you have existing Xilinx software installed in the xact directory, Install overwrites the software with the new software.

    If you have enough space, Xilinx recommends that you install XACT 5.0 to a new directory. This procedure enables you to validate the new installation before removing the old software.

Note: If you are a Mentor Graphics user and do not have Mentor Graphics Version 8.2_5 installed, do not install the DS-344 product. If you are a new customer and do not have a previous installation of the Xilinx Mentor Graphics Interface (DS-344), you can install the new interface anywhere. If you have an existing DS-344 installation, you *must* overwrite the existing installation with the new interface.

6. Refer to Appendix C for information on how to update your configuration file with the proper environment variables.

    Before running the software, you must install and start the network license manager. If the license manager is not running, the protected applications try to start it automatically.

7. Authorize your software using the information in the section "License Management for Workstations" in this chapter.

Installation from Tape

If you have a tape, refer to Appendix B, "Installing from Tape," and then continue with the section "License Management for Workstations" in this chapter.

Apollo, DEC Alpha, and IBM RS6000 are only available on tape. If you need a Sun or an HP tape, contact Xilinx Customer Service.

Note: Some product options are divided into "executable" and "data" options. Both must be selected when you install a product; selecting only one will make the option unusable.

License Management for Workstations

Workstations do not require a programmable key. Instead, you may need to contact your Xilinx Customer Service Representative to obtain authorization codes for your new Xilinx products.

To use XACT 5.0 software, you must have the following:

- Highland License Manager, Version 2.4

- Xilinx license.dat file

- Appropriate authorization codes for your new Xilinx products

The Highland License Manager and the license.dat file are included on the media shipped to you by Xilinx and are copied with the software in your installation directory by the Install program.

Adding New Products

If you are adding new products, you must call Xilinx to obtain the authorization codes for the licensed components you purchased. The following components are the Xilinx licensed programs that require an authorization code.

Table 3-1 Licensed Components To Be Authorized

Product	Licensed Component
DS-502 (FPGA Core)	XDE, APR, PPR
Standard Package	XDE, APR, PPR, XBLOX
Extended Package	XDE, APR, PPR, XBLOX
DS-380 (X-BLOX)	XBLOX
DS-371 (Xilinx ABEL)	XABEL
Viewlogic Package or DS-391	XNF2WIR
Mentor Graphics Package or DS-344	XNF2EDIF

To enable a new installation, you must update your license.dat file with the authorization codes and start the Highland license server.

To enable an existing installation, you must update the license file, shut down the license server, and restart the license server to run the new version of the Highland software.

Adding a Product Update

If you are an existing XACT customer, your license.dat file is already enabled for XACT 5.0. In this case, you do not need to call Xilinx and edit your license.dat file, unless you are adding new products. New products have a "DS" prefix. Updates have an "SC" prefix.

Warning: If this installation is only an update, and no new features are being added, you must shut down and restart the license server to run the new version of the Highland software, Version 2.4.

Preparing the license.dat File

If you install software from a tape, the Install program edits your license.dat file, sets the license strings appropriately, and reports which authorization codes are necessary for your installation. If you install software from a CD-ROM, you need to edit the file manually with the information received from Xilinx.

The authorization file is in *full_path*/xact/license/license.dat. The file includes comments that explain how to add the specific Xilinx authorization codes.

1. Contact Xilinx Customer Service Monday through Friday, from 8:00 am to 5:00 pm Pacific Time to obtain the authorization codes. International customers should contact their local Distributor.

Southwest	408-879-4917
Northwest/British Columbia	408-879-5150
Northeast/Mid-Atlantic/Canada	408-879-4939
Central	408-879-5321
Southeast	408-879-5383
Facsimile Transmission	408-559-0115

2. Provide the host name and host id of the computer that will be your license server as well as the product name and serial number from your registration card.

Note: Save the license agreement card so that you will have the product name and serial number available in the future. If you entered your serial number during an installation, you can retrieve it by executing the following command:

full_path/**xact**/**license**/**serial.csh**↵

You can obtain the host name and host id by logging into the machine designated as your license server and by executing the following:

full_path/**xact**/**bin**/*cpu_type*/**xlmcon hostname**↵

full_path/**xact**/**bin**/*cpu_type*/**xlmcon hostid**↵

where *full_path* is a user-defined directory, and *cpu_type* is alpha, apollo, hppa, mips, rs6000, or sparc.

The above information must be obtained for the machine that is to be the license server. For example, if you wish an HP 9000/7xx machine to be the license server for an environment containing software running on Apollo, Sun, and HP 9000 systems, you would perform the above commands on the HP server.

If your system or network is already running the Highland License Manager for another Xilinx product, you can also find the appropriate hostname and hostid on the "SERVER" line of your current license.dat file. You must use the same SERVER information if you plan to add your new products to your existing server.

Understanding License Codes

Your Xilinx Customer Service Representative will fax you a file that includes information similar to the following:

```
SERVER triton 55090a70 2100

DAEMON XXACTD /usr/etc/XXACTD

#

# For XACT V software:

FEATURE      XDE XXACTD 1.000 18-SEP-95 1 CO11E54C "XSJ"

FEATURE      APR XXACTD 1.000 18-SEP-95 1 60B642A8 "XSJ"

FEATURE      PPR XXACTD 1.000 18-SEP-95 1 169ECFF8 "XSJ"

FEATURE    XBLOX XXACTD 1.000 18-SEP-95 1 58825F70 "XSJ"

##

#For pre-XACT V software:

FEATURE XDE-SUN4 XXACTD 1.000 18-SEP-95 1 CO11E54C "XSJ"

FEATURE APR-SUN4 XXACTD 1.000 18-SEP-95 1 60B642A8 "XSJ"
```

```
FEATURE PPR-SUN4 XXACTD 1.000 18-SEP-95 1 169ECFF8 "XSJ"

FEATURE XBLOX-SUN4 XXACTD 1.000 18-SEP-95 1 58825F70 "XSJ"
```

Licenses before XACT 5.0 were defined for specific platforms by means of a platform-specific suffix following the product name in the FEATURE line of the license.dat file:

```
FEATURE XDE-SUN4 XXACTD 1.000 18-SEP-95 1 CO11E54C "XSJ"
```

In the above example, XDE is authorized on a SUN4 only.

In the XACT 5.0 release, new license codes are no longer defined for one specific platform only, thereby enabling the license to be used with software installed on a SUN, HP-PA, or Apollo workstation (but not at the same time).

While the XACT 5.0 software works with both license types (platform specific and non-specific), pre-XACT 5.0 software does not accept license features that lack the platform suffix.

Adding Authorization Codes

Edit the license.dat file located in the license subdirectory with the authorization codes received from Xilinx Customer Service.

Note: If your system or network is already running the Highland License Manager for another Xilinx product, you only need to add the new Xilinx license information to the existing license file and restart the license server. In this case, copy only the new FEATURE lines to the end of the existing Xilinx license file.

1. Add your authorization data as given to you by Xilinx at the end of the file making sure the following rules are observed:

    • Entries in the license file must have exactly one line per feature.

    • All authorization codes must be entered correctly and in correct case.

    • The keywords SERVER, DAEMON, and FEATURE must begin in the first column of the line.

2. Use the template provided at the end of the "license.dat" file. The template shows the case requirements for the various fields.

Failure to follow the above rules can cause the license manager to refuse permission to run the software.

To minimize the risk of typographical errors while entering the license data, customers in the U.S. who can receive electronic mail over the Internet can request that their license be e-mailed to them.

Starting the License Server

Once the "license.dat" file is prepared, it is possible to start the network license manager.

Warning: If you have previously installed Xilinx software and are running the 1.5 or 2.1 Version of the Highland License Manager, or have added new entries into your license file, you must shut down and restart the license manager. Be sure to run the new version, Version 2.4, when you restart the Highland License Manager. If this installation is only an update, and no new features are being added, you must still restart the license server to run the new version of the Highland software.

Start the license manager using the following command

>   *full_path*/xact/bin/*cpu_type*/xlmasu↵

The xlmasu program reads *full_path*/xact/license/license.dat, and sends to the license server machine a command to start the license manager. You can run xlmasu on the license server machine, or on any machine that can run remote commands on the server machine.

If you make any changes to the license.dat file after starting the license manager, you will have to stop and restart the license manager to enable the changes to take effect.

Any time you need to restart the license manager, you must first run the "xlmdown" program to stop any active license manager. Then, run "xlmasu" to restart the server.

Existing Highland License Manager Users

If your system is already running the Highland License Manager for a non-Xilinx product, you should run a separate lmgrd server for Xilinx programs, using a separate license file. The two servers must use different socket numbers. The socket number is the last entry on the SERVER line. The default Xilinx socket number is 2100. Refer to the example license.dat file shown in section "Understanding License Codes" for information on how to define the socket number. You can

change the socket number or the hostname without obtaining new authorization codes: only the hostid is encoded.

Note: Xilinx strongly recommends that you use a separate license file exclusively for Xilinx licenses, and that you use the auto-startup feature. This feature is enabled by default and allows your licensed programs to automatically start the license server when the Highland License Manager is not running. To disable the auto-startup feature, refer to the $XACT/license/README file.

Checking the Installation

Verify your installation by checking that the appropriate files are installed and the required programs are running.

1. Check that your installation directory includes the required programs and directories listed in the section "Programs and Directories" at the end of this chapter.

2. Ensure that the required authorization codes are in the license file.

3. The license server communicates with the Xilinx controlled programs by TCP/IP. If you are using an Apollo workstation or a stand-alone Sun workstation, the network might not be running the TCP/IP protocol.

    Using the ps command at the end of this subsection, check that TCP/IP is available on your system by verifying that the license server and any node from which the Xilinx software runs are running inetd (or tcpd for Apollo).

    If TCP/IP is not running, ask your system administrator to start the protocol for you.

4. The Xilinx graphical programs are X-Windows based.

    Using the ps command at the end of this subsection, check that the X-server used by the Xilinx graphical programs is running on the node where the programs are to be viewed:

    -   On Apollo, the X-server is usually "Xapollo".

    -   On Sun, the server is usually called "xnews", "X", or "Xsun".

    -   On HP-PA and DEC Alpha OSF/1, it is usually "X".

5. Ensure that the license server and the Xilinx license daemon are running on the license server node. The license server is called "lmgrd", and the daemon is called "XXACTD". Normally, these servers are automatically started by the first execution of a licensed program such as APR, PPR, or XDE.

To check for the above required programs, use the ps command and scan the output for the required programs, as in the following examples:

- In C shell:

  ```
  ps axw | grep X | grep -v grep↵
  ```

- In Bourne shell:

  ```
  ps -eaf | grep inetd  | grep -v grep↵
  ```

- In Aegis:

  ```
  pst | fpat -p tcpd↵
  ```

Checking the License Server

The programs xlmcon and xlmlog are useful for finding problems with the license server. They are installed in the directory *full_path*/xact/bin/*cpu_type*.

1. To check whether the licenses for your programs are enabled, type:

    xlmcon quick -a↵

    The interactive program xlmcon reports information about the Highland License Manager and license.dat file.

    You can also invoke the xlmcon program by entering the following:

    xlmcon↵

    You can use any of the following commands at the xlmcon> prompt:

    - hostname — reports the current name of the node as understood by the Highland License Manager.

    - hostid — reports the CPU ID (host id) of the current node as understood by the Highland License Manager. Use this

command on the license server computer to be sure that the ID in the license file is correct. You may not edit the host id in the license file; it is encrypted into the authorization codes for the FEATURES.

- `show` — prints the license.dat file being accessed in the current environment; make certain that it contains the Xilinx FEATURES and XXACTD daemon lines.

- `list` — lists all users of the Xilinx features.

- `verify` — checks that the encryption of the license is correct and that there are no typing errors. It does not require that the license server be running.

- `quick` — checks out and checks in the first Xilinx feature in the license file.

- `quick -a` — checks out and checks in all of the Xilinx features in the license file. This operation must occur while the server is running.

2. Check the license manager activity by using the xlmlog program.

   To use this program, type the following:

   xlmlog⏎

   If started before the license server, xlmlog reports the following server startup messages.

   ```
   xlmasu@zeppo: Xilinx License Manager Autostartup Version #V#

   xlmasu@zeppo: License file: /home/venus/xact/license/
   license.dat

   xlmasu@zeppo: License manager servers will be started on
   zeppo

   xlmasu@zeppo: Server initialization waiting period started

   xlmasu@zeppo: License manager servers were started
   successfully on zeppo

   xlmasu@zeppo: All license manager servers are now up
   ```

   where zeppo is the name of the license server machine, and /home/venus/xact is the installation directory.

Programs and Directories

Several subdirectories are created in the installation directory, including:

- /bin — executables (required)
- /data — data files (required)
- /xc* — Unified Libraries
- /examples — example designs
- /tutorial — tutorial designs
- /doc — documentation
- /license — license files — directory should be writable by all users (requried)
- /msg — message files (required)
- /tmp — temporary files which may be removed after installation is complete (used by tape installations only)

The installation directory *full_path*/xact also contains the following files:

- install — program to perform the installation
- reminder — information about the Xilinx environment

The following license manager programs are installed in $XACT/bin/*cpu_type* when you are installing licensed programs:

- XXACTD — Xilinx license daemon
- lmdown — Network licensing shutdown program
- lmgrd — Network licensing daemon
- lmhostid — Reports network licensing hostid
- lmremove — Network licensing program
- lmreread — Network licensing program
- lmstat — Network licensing status program
- lmver — Network licensing version program
- xlmasu — Network licensing auto-startup program

- xlmcon — Network licensing report program
- xlmdown — Network licensing shutdown program
- xlmgrd — Network licensing program
- xlmlog — Network licensing logging program
- xlmlsu — Network licensing program
- xlmrmc — Network licensing program
- xlmtee — Network licensing program
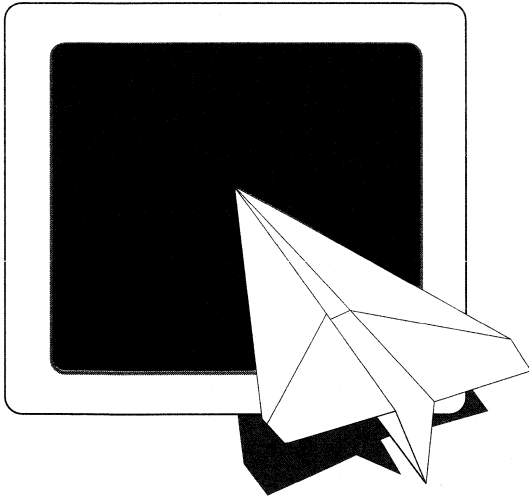
Disk Space
Management

XACT
Installation
Guide

Chapter 4

Disk Space Management

This chapter deals with disk space management techniques.

- *Installation Tips* helps you decide which software programs you should install with the Custom Install program.

- *Customizing Your Installation* explains how to use the Custom Install option of your installation program.

Installation Tips

This section explains how to install only the software required to support the particular FPGA or EPLD device you intend to use. You should use the Custom Install program for this type of installation. Following these guidelines can save many megabytes of disk space.

1. If you are installing a package, the following products are displayed in the product selection box of both the Quick and Custom Installation screens:

   - Third-Party Interface Products

   - FPGA Core Tools

   - EPLD Core Tools

   - X-BLOX

2. Choose FPGA Core or EPLD Core depending upon the device you will be using.

3. Choose X-BLOX only if you plan to use the X-BLOX product.

4. Install a third-party interface product and only the library or libraries you need.

   - XC2000 Library

- XC3000 Library (3000, 3000A/L, 3100, and 3100A)
- XC4000 Library
- XC7000 Library
- X-BLOX Library

5. When installing FPGA Core from the Standard Package or DS-502, select only the device support options that you need.

For example, if you intend to design an XC3042A using Viewlogic, but might be upgrading to an XC3064A at a later time, you could install the following selection of products:

DS502:

- FPGA Core
- XC3000A/XC4000 Place and Route
- XDE Layout Editor
- XChecker Download/Readback
- XPP PROM Programmer
- Example Files
- Tutorial Files
- XC3042A, 3042L, 3142A Support
- XS3064A, 3064L, 3164A Support

DS290:

- Viewsim and Interface
- XC3000 Library
- X-BLOX Library

DS390:

- Viewdraw and Interface

In this example, the XC3000 and X-BLOX libraries are only selected once, since they are the same in the DS-290 and DS-390 packages. You only need to select them once, but a multiple selection would do no harm.

Customizing Your Installation

The Custom Install option provides for disk space management capabilities by enabling you to:

- Specify different paths for the different products that constitute your software package

- Install only the parts of the software product you will be using

- Use the disk space analysis features of the installation program to determine where to install your software

Custom Installation Screen

To access the Custom Installation Screen, select **Custom** from the Main Window. The screen appears as shown in Figure 4-1.
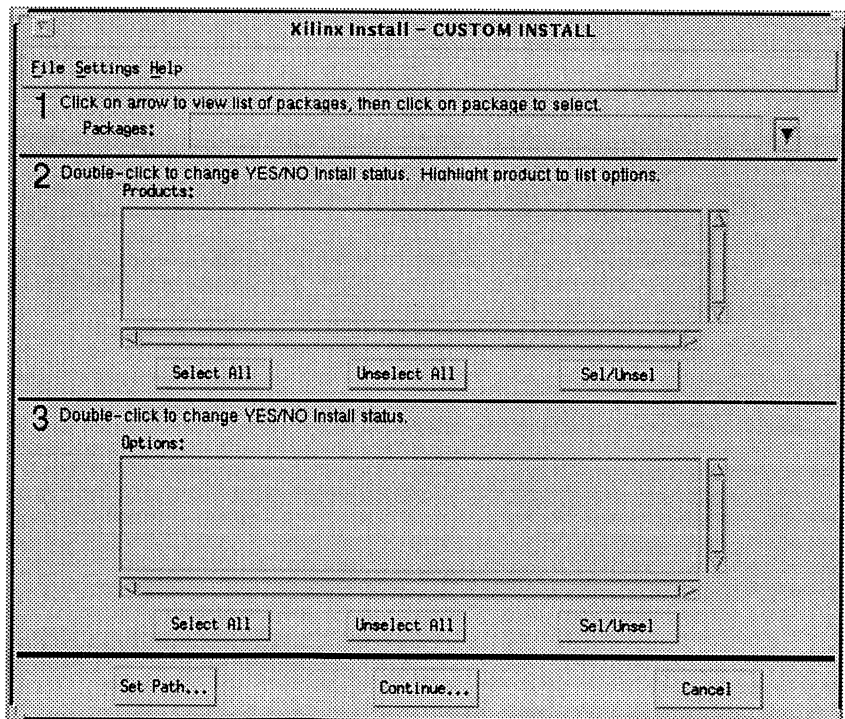
Figure 4-1 Custom Installation Screen

1. In section 1 of the installation screen, click on the down-arrow located to the right of the selection box.

   A list of products or packages appears.

2. Select the products you wish to install by clicking on the appropriate item on the list.

3. Set the YES/NO selection status for the products and options you wish to install.

4. Click on `Set Path` to set different paths.

Set Path Screen

The Set Path window allows you to review the list of products that you can install on your system and the space requirements for each product.

- `Prdct Sz` (Product Size) indicates the total size of the program in megabytes (MB).

- `Need` indicates the required disk space for the product installation. This space can be less than the product size if you already have an installation of the product in the displayed path. If you reinstall the product, older files will be replaced.

- `Path` indicates the destination directory for the product.

Use the `Analyze Disk Space` switches, on/off, to enable or disable the disk space analysis. When this feature is turned off, you can save processing time.

You can edit a path or set your installation to different directories as follows:

1. Highlight a product in the product selection box, then click on the `Edit Path` button.

   The `Edit Path` window appears and displays the installation paths for the selected products.

2. You can elect to edit your path by clicking on the path shown in the selection box or return to the previous screen by clicking on `OK` or `Cancel`.

Personal computers and workstation Set Path screens differ slightly. Personal computers include a Drive Status section showing available

space on all drives (Current), required disk space to complete the installation (Need), and remaining space after completing the installation (Left). When Analyze Disk Space is turned on, the Drive Status section on the PC uses the "Need" values of each drive. Refer to Figure 4-2.
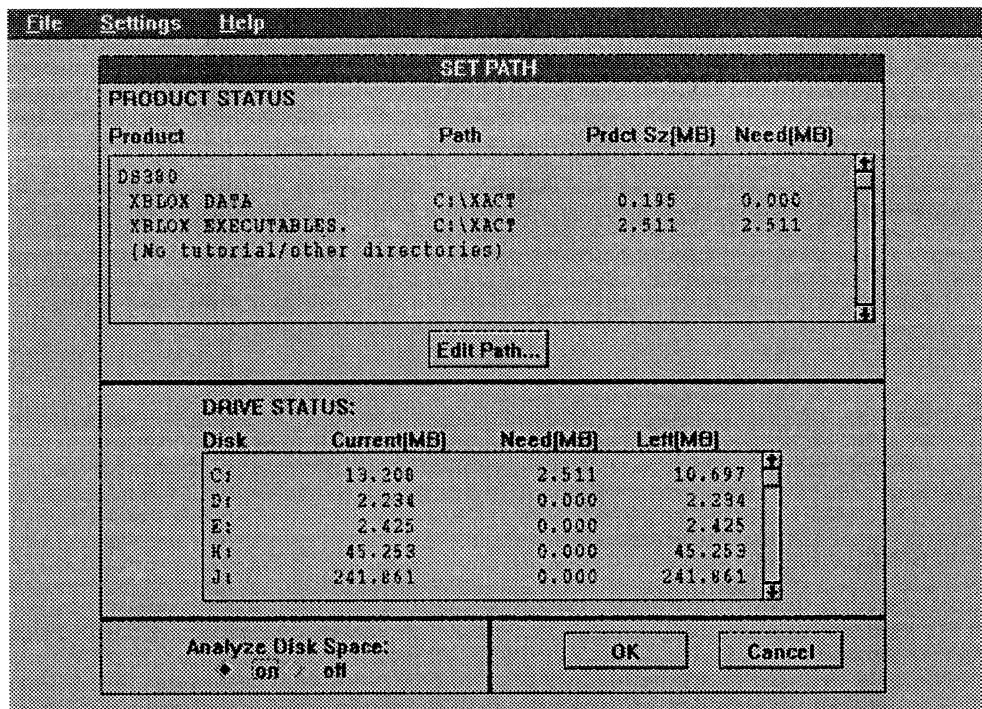
Figure 4-2 Set Path Window with Analyze On (PC Screen)

Overwriting Existing Files

If you have existing Xilinx products, Xilinx recommends that you install to a new directory provided you have enough disk space. If you install new software to a directory that contains old software, Install overwrites the old software without warning you.

The only time Install asks you if you wish to overwrite software is when you are installing older files over newer ones. To overwrite software unconditionally, use the Force File Overwrite option of the Install program.

Force File Overwrite

The Force File Overwrite option is in the Settings menu. By default, this option is turned off and the Install program does not install old files over new ones.

There might be times when you need to install all the files on your media regardless of the file date:

- If you modified the dates of the files of a previous installation.

- If you install a file from the bulletin board.

- If you wish to install old software over new software.

Use the Force File Overwrite option to overwrite the files without being prompted by the system to confirm this operation.
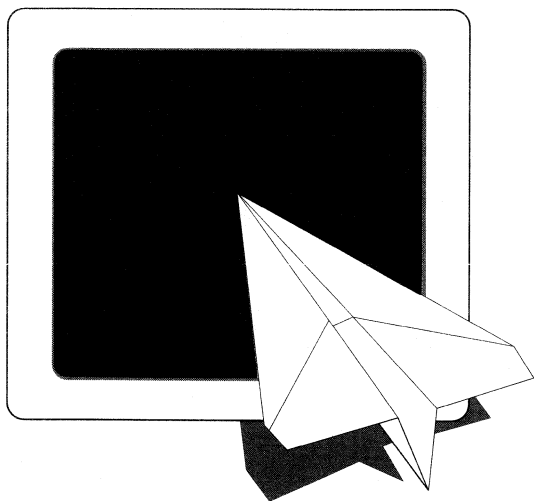
XACT Installation Guide

Appendix A Troubleshooting

Appendix A

Troubleshooting

This appendix describes possible errors or problems you might have when installing on personal computers and workstations.

All Systems

Insufficient space for the installation.

The Install program will indicate if sufficient space is not available. If this error occurs, follow these guidelines:

1. Use Custom Install.

2. Select only the product options that you need. Refer to Chapter 4, "Disk Space Management."

3. Use the Analyze Disk Space and Set Path features in Chapter 4 to control your installation at a detailed level.

Mouse is incompatible.

If your mouse is incompatible with the Install program, use the keyboard commands listed in Appendix D.

Other PC mouse problems are described in the "PC Installations" section, following.

PC Installations

You have trouble invoking Install.

Specify option -v (verbose mode) for more information on the program start-up.

Install could not update your AUTOEXEC.BAT file.

If Install could not update your configuration file for you, you must update your AUTOEXEC.BAT file manually before running your software. For information on how to update your configuration file, refer to Appendix C.

Out of environment space.

There might be an "Out of Environment Space" error message displayed when you boot your PC. In this case, increase your DOS environment space by updating your CONFIG.SYS file as explained in Appendix C.

Video mode is not set.

As a default, the graphics mode is set to 4-color VGA.

To change the graphics mode, add the GRMODE environment variable to the AUTOEXEC.BAT file, as explained in Appendix C.

Problems occur when running Install from Windows.

In general, Xilinx recommends that you do not run Install from Windows. However, you can run in a Windows DOS shell. To do so, double-click on the MS-DOS Prompt icon, then invoke the Install program. Also, due to limitations of the MS-Windows emulation software used to create the Install program, Xilinx recommends the following:

- Do not use **Alt-Tab** to switch to Windows or another application.

- Do not use **Alt-Enter** to switch to a window and back to a full screen.

- To exit the DOS shell, type **exit**↵ at the prompt.

- Do not move an Install program window off the screen and then back in view.

- Do not click on a button that is not completely displayed.

You have not been prompted to install every diskette in the product set even though you have requested to install the entire product.

The installation program only installs files that differ from the files on your target drive. If you have a partial installation of the product on your system, by default, you will not be asked to install the duplicate files.

For example, if you install DS290, DS390, and DS391, you are not prompted to insert the diskettes that contain the duplicate files.

You can force the program to install duplicate files by setting the Force File Overwrite option to On in the Settings menu.

Dates of the installed files are off an hour.

If you install software onto a network drive, the dates of the files that you installed might be an hour off due to the Daylight Saving Time conversion.

Mouse Fails.

- Install does not have a built-in mouse driver. Make sure the mouse driver that you are using is compatible with MS-Windows. You do not need to have MS-Windows loaded on your PC.

- If you do not have an MS-Windows-compatible mouse, refer to Appendix D for information on how to enter commands from the keyboard.

- If the VLPCM environment variable is set, try resetting it by typing:

      set VLPCM⏎

  After the installation, this variable is reset when you execute your AUTOEXEC.BAT file.

- If you are using a Logitech mouse, try loading the driver with the init parameter. For example:

      c:\mouse\mouse init⏎

  You can reset the mouse driver after the installation is complete.

- If you are using an old version of a mouse driver, try to upgrade it to an MS-Windows-compatible version.

- If you are using Version 4.55 of the Microsoft mouse driver, you

must upgrade it to a later version as Version 4.55 is incompatible with the Install program.

Problems with the PC keys.

If your key is not working, it might be for one of the following reasons:

- Your key is not securely fastened. To correct the problem, check that the key is correctly installed.

- You are using a port that does not conform to the IBM parallel port standard. To diagnose this problem, use the **xkey -r** command. If the key is not found on your PC but can be found on another PC, you are using a non-standard parallel port.

- A printer or CD-ROM drive is attached to the same parallel port as the key. When the printer power is turned off, the key does not function. To correct the problem, either turn on the peripheral or disconnect it from the parallel port.

- If you are using a SentinelSuperPro key on the same port as your Xilinx C key, ensure that your Xilinx key is the first key attached to the computer port.

- If you run out of evaluation runs, contact Xilinx to get a password that will authorize your software to run an unlimited number of times.

Workstation Installations

Warning messages are displayed when starting Install on HP-PA systems.

When you start the installation program on an HP-PA system, ignore the warning messages that are initially displayed.

Incompatibility between HP-PA and Sun workstations.

You cannot run the Install program with the DISPLAY set to a Sun workstation that is running OpenWindows because of an incompatibility between X11R5 used by the HP-PA machine and the Sun OpenWindows XServer. This incompatibility causes the Sun Window Manager and the X server to crash. Normally, any processes running in the windows of that display are killed.

Server start-up problems.

Check the license manager activity by using the xlmlog program to report server startup messages. Start this program before starting the license server. To use this program, enter the following:

>   **xlmlog⏎**

Xlmasu failed.

If xlmasu fails, the following messages are displayed:

```
xlmasu@zeppo: Xilinx License Manager Autostartup Version #V#

xlmasu@zeppo: License file: /home/venus/xact/license/
license.dat

xlmasu@zeppo: License manager servers will be started on
zeppo

xlmasu@zeppo: Server initialization waiting period started

xlmasu@zeppo: License manager servers could not be started on
zeppo

xlmasu@zeppo: Confirming the status of the servers

xlmasu@zeppo: License manager servers could not be started on
zeppo

xlmasu@zeppo: terminated abnormally
```

where zeppo is the name of the license server machine, and /home/venus/xact is the installation directory.

The cause of this error can be any of the following:

- You cannot write into the $XACT/license directory.

- You cannot "rsh" (or "/com/crp" for apollo, or "remsh" for hppa) commands to the license server machine.

- The xlmasu program is being found in your path, somewhere other than $XACT/bin/sparc. The Xilinx license manager programs look for the license file by assuming that they are in $XACT/bin/*cpu_type*, and looking for ../../license/license.dat.

The file $XACT/license/README has more information about the new licensing implementation.

Starting with this release, the licensed programs expect that the license file is $XACT/license/license.dat, and that the programs are in $XACT/bin/*cpu_type*.
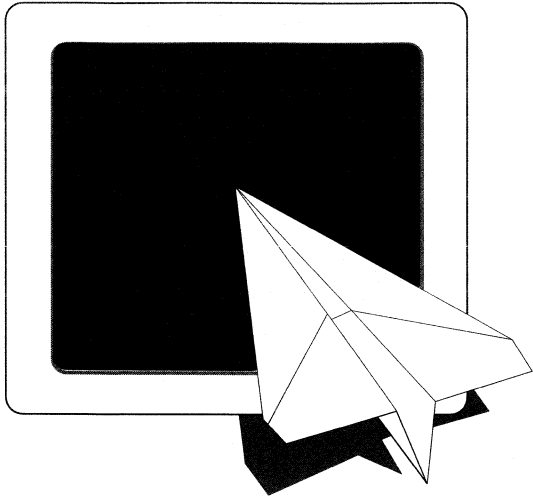
XACT
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Appendix B
Tape Install

Appendix B

Installing from Tape

On a workstation, you can install individual products from a tape. Read the system requirements in Chapter 1 and the general installation information on workstations in Chapter 3, then refer to instructions for your specific platform in this chapter.

Note: After the installation, check the "reminder" file, stored in your installation directory for messages from the Install program.

Installation Requirements

Installation of this package requires a cartridge tape drive. The drive can be on the local machine or on a remote machine on the network.

Remote Tape Operation

To access a remote tape drive, establish a remote session on the machine with the tape drive using the rlogin command.

If you cannot mount your file system on the remote machine, do either of the following:

- Ask your system administrator to mount your file system on the target machine and try to rlogin to that machine again.

- Use a remote shell to connect to the host and execute the specified commands.

  To access a host by means of a remote shell, you must be able to execute commands from the remote shell to the target machine and get no messages; that is, the command

  ```
  rsh remote echo -n ""
  or
  remsh remote echo -n ""  (for HP-PA machines)
  ```

must not print anything at all.

In addition, you must ensure that the remote tape drive is of the same type as the system you are logged in to because of assumptions the Install program makes about tape drive names. For example, a Sun installation must use a Sun tape drive.

Note: For Apollo machines, you must log onto the machine that has a tape drive, then change directories so that you are on the file system and in the directory where you want the software installed. Remote tape operation is not supported.

Choosing an Installation Directory

You should install the programs in a new directory on your system. The installation does not force you to use a specific directory but gives you the choice of where you want the software installed. Typically, you would choose a directory where user programs are installed, such as /usr, /usr/dev, or /usr/local in a UNIX environment, and create a subdirectory for the programs — the directory name xact is commonly used.

Note: If you have existing Xilinx software, Xilinx recommends that you create a new directory for the new software instead of overwriting the old software. This procedure enables you to validate your new installation before removing the old software. Existing Mentor Graphics users should overwrite their existing area.

Pointing to an Existing License File

If you already own a copy of the Highland License Manager, you can point the environment variable to your Xilinx license file.

- If this tape supersedes a previous installation, you should set the environment variable LM_LICENSE_FILE to point to your current Xilinx license file. This allows the Install procedure to make a local copy of your license and add to it any new authorization strings that might be required.

- If you do not have an existing Xilinx installation but use the Highland License Manager for other products, you should set LM_LICENSE_FILE to /dev/null, and use a Xilinx-only license file for Xilinx programs. See the README file in the license subdirectory for more information.

Installing on a Sun UNIX System

1. Log in to the target system. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

   /usr/ucb/rlogin *machine_with_tape_drive*↵

2. Use the UNIX command **/bin/mkdir** *directory_name* to create the installation directory. The installation directory could be /usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, move to the new installation directory:

   cd *full_path*/**xact**↵

   where *full_path* is the user-specified path.

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

   setenv LM_LICENSE_FILE *path_to_file*/**license.dat**↵

   If there is no existing license.dat file, point to the null file:

   setenv LM_LICENSE_FILE /dev/null↵

4. Insert the tape into the drive.

5. Load the install script.

   /bin/mt -f /dev/rst0 rewind↵

   /bin/tar xvf /dev/rst0↵

   The most common name on Sun UNIX systems for a tape drive is /dev/rst0. Check this name with your system administrator.

Note: If you cannot mount your file system on a machine with a tape drive, do not rlogin. Instead, load the install script from your system as follows:

   rsh *remote* **/bin/mt -f /dev/rst0 rewind**↵

   rsh *remote* **/bin/dd if=/dev/rst0 bs=20b \
   | /bin/tar xvf -**↵

   where *remote* is the remote node whose tape drive you will use.

6. Run the install script and follow the instructions on your screen.

   `./install↵`

   Note: The period and slash must be typed as part of the command.

   Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

Installing on an HP-PA System

1. Log in to the target system. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

   `/usr/ucb/rlogin` *machine_with_tape_drive↵*

2. Use the UNIX command `/bin/mkdir` *directory_name* to create the installation directory. The installation directory could be /usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, move to the new installation directory:

   `cd` *full_path/`xact↵`

   where *full_path* is the user-specified path.

   Note: The software must be installed on a disk that is configured for long file names. If you attempt to install onto a disk that does not support long file names, the Install program stops and directs you to move to a different disk.

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

   `setenv LM_LICENSE_FILE` *path_to_file/`license.dat↵`

   If there is no existing license.dat file, point to the null file:

   `setenv LM_LICENSE_FILE /dev/null↵`

4. Insert the tape into the drive.

5. Load the install script.

   `/bin/mt -t /dev/rmt/0m rewind↵`

   `/bin/tar Oxvf /dev/rmt/0m↵`

   The tar options include "O" (capital O) to ensure that the installer owns the files, rather than just a Xilinx userid.

The most common tape device name on HP-PA systems is /dev/rmt/0m for the 4-mm DAT tape drive. (That is a zero in /dev/rmt/0m.) Check this name with your system administrator. The Install program expects to read from a device configured to be low density, no rewind, Berkeley-style close. Such devices often have names such as "/dev/rmt/c201d3lnb." The last three characters are lowercase LNB.

Note: If you cannot mount your file system on a machine with a tape drive, do not rlogin. Instead, load the install script from your system as follows:

remsh *remote* **/bin/mt -t /dev/rmt/0m rewind⏎**

remsh *remote* **/bin/dd if=/dev/rmt/0m bs=20b \ | /bin/tar 0xvf -⏎**

where *remote* is the remote node whose tape drive you will use.

6. Run the install script and follow the instructions on your screen.

./install⏎

Note: The period and slash must be typed as part of the command.

Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

Installing on an Apollo with UNIX

1. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

/usr/apollo/bin/crp -on //*machine_with_tape_drive*⏎

2. Use the UNIX command **/bin/mkdir** *directory_name* to create the installation directory. The installation directory could be /usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, change directories to be on the file system and in the directory where you want the software installed:

cd //*target_node/target_dir*⏎

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

- For Bourne shell (/sys5.3/bin/sh):

  LM_LICENSE_FILE=*path_to_file***/license.dat**↵

  export LM_LICENSE_FILE↵

  If there is no existing license.dat file, point to the null file:

  LM_LICENSE_FILE=/dev/null↵

  export LM_LICENSE_FILE↵

- For C shell (/bsd4.3/bin/sh):

  setenv LM_LICENSE_FILE *path_to_file***/license.dat**↵

  If there is no existing license.dat file, point to the null file:

  setenv LM_LICENSE_FILE /dev/null↵

4. Insert the tape into the drive.

5. Load the install script.

   /usr/apollo/bin/rbak -dev ct -f 1 -pdt -du -ms -all↵

   The most common name for the cartridge tape device is ct. Verify this name with your storage administrator.

6. Run the install script and follow the instructions on your screen.

   ./install↵

Note: The period and slash must be typed as part of the command.

Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

Installing on an Apollo with Aegis

The current Xilinx Install program is a C-shell script. It requires that some node on your ring have the bsd4.3 UNIX environment available.

1. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

   /com/crp -on //*machine_with_tape_drive*↵

2. Use the command **/com/crd** *directory_name* to create the installation directory. The installation directory could be

/usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, change directories to be on the file system and in the directory where you want to install the software.

/com/wd *//target_node/full_path/xact*⏎

where *target_node* is the node where the software is to be installed and *full_path* is the user-specified path.

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

    setvar LM_LICENSE_FILE *path_to_file/***license.dat**⏎

    export LM_LICENSE_FILE⏎

    If there is no existing license.dat file, point to the null file:

    setvar LM_LICENSE_FILE /dev/null⏎

    export LM_LICENSE_FILE⏎

4. Insert the tape into the drive.

5. Load the install script.

    /com/rbak -dev ct -f 1 -pdt -du -ms -all⏎

    The most common name for the cartridge tape device is ct. Check this name with your system administrator.

6. Run the install script and follow the instructions on your screen.

    setvar SYSTYPE bsd4.3; export SYSTYPE⏎

    ./install⏎

    If you are performing the installation on a node that does not have a /bin/csh, you must invoke the Install program as follows:

    *//bsd_node/***bsd4.3/bin/csh ./install**⏎

    where *bsd_node* is any node that has bsd4.3.

Note: The period and slash must be typed as part of the command.

Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

Installing on an IBM/RS6000 AIX System

1. Log in to the target system. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

   /usr/ucb/rlogin *machine_with_tape_drive*↵

2. Use the UNIX command **/bin/mkdir** *directory_name* to create the installation directory. The installation directory could be /usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, move to the new installation directory:

   cd *full_path***/xact**↵

   where *full_path* is the user-specified path.

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

   setenv LM_LICENSE_FILE *path_to_file***/license.dat**↵

   If there is no existing license.dat file, point to the null file:

   setenv LM_LICENSE_FILE /dev/null↵

4. Insert the tape into the drive.

5. Load the install script.

   /bin/mt -f /dev/rmt0 rewind↵

   /bin/tar xvf /dev/rmt0↵

   The most common name for the 8-mm tape device on an RS6000 machine is /dev/rmt0. Check this name with your system administrator.

Note: If you cannot mount your file system on a machine with a tape drive, do not rlogin. Instead, load the install script from your system as follows:

   rsh *remote* **/bin/mt -f /dev/rmt0 rewind**↵

   rsh *remote* **/bin/dd if=/dev/rmt0 bs=20b **
   | /bin/tar xvf -↵

   where *remote* is the remote node whose tape drive you will use.

6. Run the install script and follow the instructions on your screen.

   ./install↵

   Note: The period and slash must be typed as part of the command.

   Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

Installing on a DEC Alpha AXP OSF/1 System

1. Log in to the target system. If you are at a node without a tape drive, you must log onto the machine with the tape drive.

   /usr/bin/rlogin *machine_with_tape_drive*↵

2. Use the UNIX command **/bin/mkdir** *directory_name* to create the installation directory. The installation directory could be /usr/xact or /usr/xact/xact_V if you already have a Xilinx installation. Then, move to the new installation directory:

   cd *full_path/***xact**↵

   where *full_path* is the user-specified path.

3. If you have an existing license.dat file that you wish to continue to use, set the LM_LICENSE_FILE to point to that file:

   setenv LM_LICENSE_FILE *path_to_file/***license.dat**↵

   If there is no existing license.dat file, point to the null file:

   setenv LM_LICENSE_FILE /dev/null↵

4. Insert the tape into the drive.

5. Load the install script.

   /bin/mt -f /dev/rmt01 rewind↵

   /bin/tar xfv /dev/rmt01↵

   The most common name for the tape device on Alpha OSF/1 systems is /dev/rmt01. Check this name with your system administrator. Xilinx tapes are written without compression. Low-density is designated by the "1", lowercase L, at the end of the device name.

Note: If you cannot mount your file system on a machine with a tape drive, do not rlogin. Instead, load the install script from your system as follows:

```
rsh remote /bin/mt -f /dev/rmt01 rewind↵
```

```
rsh remote /bin/dd if=/dev/rmt01 bs=20b \
| /bin/tar xvf -↵
```

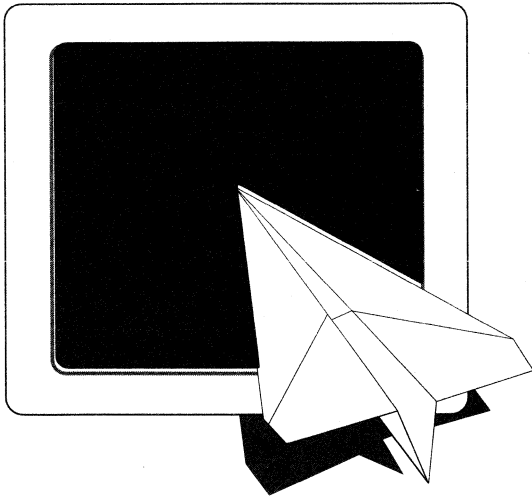where *remote* is the remote node whose tape drive you will use.

6. Run the install script and follow the instructions on your screen.

```
./install↵
```

Note: The period and slash must be typed as part of the command.

Read the text that concludes the installation. The messages displayed by the Install program are stored in the "reminder" file.

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Appendix C
Xilinx Environment

Appendix C

Setting Up the Xilinx Environment

This appendix explains how to manually update your configuration file for your computer. Refer to the appropriate section for your type of computer, personal computer or workstation, below.

Configuring Your Personal Computer

If Install could not update your configuration file, you must update your AUTOEXEC.BAT file manually before running your software. Install appends a list of suggested changes to C:\AUTOEXEC.XLX.

Updating the Environment Variables

Ensure you set the environment variables and installation directory as specified in this section.

When manually modifying the AUTOEXEC.BAT file, do not include any space characters in the definition of the environment variables, either before or after the equal sign, or at the end of the line. Spaces prevent the software from finding the necessary data files.

Novell Network Installations

If you are installing on a Novell network, ensure that your XACT environment variable points to an explicit path:

`SET XACT=n:.`	(Incorrect)
`SET XACT=n:\`*full_path*`\xact`	(Correct)

Development System and OrCAD Installations

To update your AUTOEXEC.BAT file for the Development System software or the OrCAD interface, use the following guidelines.

1. Ensure that in your AUTOEXEC.BAT file, the installation directory (for example, C:\XACT) is included in both the PATH and the XACT environment variable.

   For the example where C:\XACT is used as the installation path, the lines in the AUTOEXEC.BAT file would read as follows:

   PATH=*other_paths*;C:\XACT;*other_paths*
   SET XACT=C:\XACT

   You can set data files for multiple products as follows:

   SET XACT=C:\XACT;D:\XACT

   Only the executable directory needs to be in the PATH statement to satisfy Xilinx software requirements. Only the data directory needs to be included in the XACT environment variable.

2. Reboot the PC after making changes to the AUTOEXEC.BAT file or simply execute the AUTOEXEC.BAT file.

Viewlogic Installation

To update your AUTOEXEC.BAT file for the Viewlogic interface, use the following guidelines.

1. The AUTOEXEC.BAT file must have the installation directory (for example, C:\WORKVIEW) in the PATH.

2. Set the WDIR and SYSPLT environment variables as shown in the following example.

   If C:\WORKVIEW is used as the installation path, the lines in the AUTOEXEC.BAT file would read as follows:

   PATH=*other_paths*;C:\WORKVIEW;*other_paths*

   SET WDIR=C:\WORKVIEW\STANDARD

   SET SYSPLT=C:\WORKVIEW\STANDARD

3. Reboot the PC after making changes to the AUTOEXEC.BAT file or simply execute the AUTOEXEC.BAT file.

Increasing Environment Space

The DOS environment space allocated on your PC might be insufficient to accommodate the new environmental variables.

You can increase your DOS environment space by adding the following statement to your CONFIG.SYS file.

```
SHELL=C:\DOS\COMMAND.COM /P /E:720
```

The number 720 represents the number of bytes reserved for the DOS environment and can be replaced by any number.

The "Out of Environment Space" message is often difficult to see. You can use the DOS SET command to verify that the environment is loaded correctly. Entering SET at the DOS prompt displays all current environment variables and the path. If anything defined in AUTOEXEC.BAT is not listed there, you must increase the DOS environment space.

Setting the Video Mode

As a default, the graphics mode is set to VGA4.

To change the graphics mode, add the GRMODE environment variable to the AUTOEXEC.BAT file, as follows.

SET **GRMODE**=*graphics_mode*

These are the acceptable *graphics_mode* entries:

VGA4	(4 Color VGA 640x480)
VGA8	(8 Color VGA 640x480)
VGA16	(16 Color VGA 640x480)
VGAP4	(4 Color VGA 800x600)
VGAP8	(8 Color VGA 800x600)
VGAP16	(16 Color VGA 800x600)

For a complete list of supported graphics modes, refer to the file gl16mode.xct located in your C:\XACT\DATA directory. You can also refer to the gl16mode.prt file located in the same directory for more information.

To set Workview to the appropriate graphics mode, type "setup" in the \WORKVIEW directory. This command brings up a menu-driven setup program to configure your Workview environment. Refer to the installation section of the Viewlogic Manual.

Configuring Your Workstation

Before using the Xilinx software, you must configure your workstation to run the software. This section explains how to update your configuration file, the .cshrc or .login file if you are using a C shell. The Install program stores suggested changes in a file called "reminder, " which is located in your CD-ROM or tape installation directory.

Development System Software

The following explains how to configure your system to run the Development System software.

1. Add the *full_path*/xact/bin/*cpu_type* directory to your path.

    CPU types include apollo, hppa, alpha, rs6000, mips, or sparc.

2. Define an environment variable "XACT" and set it to the name of the directory into which you installed the software.

3. To use XDM and XDE, you must also run an X-Windows display manager (that is, not a SunView display), and you must include an environment variable "DISPLAY". Define DISPLAY as the name of your display. Normally DISPLAY is "unix:0.0".

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
```

If you are logged on to a remote machine, use this DISPLAY setting:

```
setenv DISPLAY mynode:0.0
```

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

For example, if the software was installed in the /usr/xact directory and you are running on a sparc, the .login or .cshrc file should contain the following:

```
set path = (/usr/xact/bin/sparc $path)

setenv XACT /usr/xact

setenv DISPLAY unix:0.0
```

In an Apollo Aegis environment, you must include the following:

```
csr /usr/xact/bin/apollo old_csr

setvar XACT /usr/xact

export XACT

setvar DISPLAY unix:0.0

export DISPLAY

eon

setvar PATH /usr/xact/bin/apollo:other_paths

export PATH
```

where *old_csr* is your previous command search rule.

Interface-Specific Updates to the Configuration File

To configure your workstation to run the Viewlogic or the Mentor Graphics interface software, continue with this section.

Viewlogic Interface

Update your .cshrc or .login file by adding the XACT and WDIR environment variables.

1. Set the WDIR environment variable to point to the directory where the Viewlogic message (MSG) files will be installed. Xilinx recommends the following directory:

   full_path/xact/workview/standard

2. Add the directory *full_path*/xact/workview to your path:

   set path = (*full_path*/xact/workview $path)

3. Set the XACT environment variable to *full_path*/xact:

   setenv XACT *full_path*/xact

For example, if the software was installed in the /usr directory, update your configuration file by adding the following lines:

   set path = (/usr/xact/bin/sparc $path)

   setenv XACT /usr/xact

Mentor Graphics Interface for UNIX Environments

If you have a Sun, HP, or Apollo workstation with a UNIX environment, configure your .cshrc or .login file by updating them with the XACT, LCA, and other environment variables specific to Mentor Graphics.

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

   setenv LCA *ds344_path*

   where *ds344_path* is the location of your Xilinx Mentor Graphics Interface.

2. Add the following line to set the XACT environment variable:

   setenv XACT *ds344_path***:***full_path***/xact**

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. Set the MGC_WD environment variable to point to the directory where your design is located.

   For example, if your design is in /home/mentor/work/design, set the variable as follows:

   setenv MGC_WD /home/mentor/work/design

   You need to reset this variable every time you change design directories.

5. Set the optional MGC_GENLIB variable, which points to the Mentor generic library.

   setenv MGC_GENLIB *mentor_path*/**gen_lib**

6. Set the MGC_HOME environment variable to point to where you installed the Mentor Graphics software.

   For example, if you installed that software in /tools/mentor/idea8.2_5, set the variable as follows:

   setenv MGC_HOME /tools/mentor/idea8.2_5

7. Set the LD_LIBRARY_PATH as follows:

   setenv LD_LIBRARY_PATH *mentor_path*:*openwin_path*/**lib**

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

8. Set the MGC_LOCATION_MAP environment variable to point to the location of your mgc_location_map file.

   For example, if you placed that file in /home/mentor/work/tools, set the variable as follows:

   **setenv MGC_LOCATION_MAP **
   /home/mentor/work/tools/mgc_location_map

   In your mgc_location_map file, you must reference $LCA; however, do not assign a value to it. The line $LCA must appear in the file, followed by a blank line. You can also add soft prefixes in the mgc_location_map file to point to your other designs.

   For example, you might add the following entry:

   $ourdesigns
   /home/mentor/mygroups/designs

   This entry allows you to move the specified design among directories without changing any references to those designs. Simply change the path to "ourdesigns" in your mgc_location_map file.

9. Add the ${LCA}/com/*cpu_type* and ${LCA}/bin/*cpu_type* directories as well as ${MGC_HOME}/bin to your path definition.

   **set path = (${LCA}/com/*cpu_type* **
   ${LCA}/bin/*cpu_type* ${MGC_HOME}/bin $path)

For example, if you installed Core software in /group/usr/xact and the Mentor Graphics Interface software in /group/usr/ds344, the .login or .cshrc file should contain the following entries:

    setenv LCA /group/usr/ds344

    setenv XACT /group/usr/ds344:/group/usr/xact

    setenv MGC_GENLIB *mentor_path*/gen_lib

    setenv MGC_HOME /tools/mentor/idea8.2_5

    setenv LD_LIBRARY_PATH \
    ${MGC_HOME}:*openwin_path*/lib

    setenv MGLS_LICENSE_FILE \
    mentor_license_path/*mentor_license_file*

    setenv MGC_WD /group/usr/*design*

    setenv MGC_LOCATION_MAP \
    /group/usr/project/mgc_location_map

    set path = (${LCA}/com/*cpu_type* \
    ${LCA}/bin/*cpu_type* ${MGC_HOME}/bin \
    /group/usr/xact/bin $path)

Mentor Graphics Interface for Apollo Aegis Environments

This section explains how to set the XACT, LCA, and Mentor Graphics environment variables on an Apollo Aegis system.

1. Set the LCA environment as follows:

    setvar LCA *ds344_path*

    export LCA

    where *ds344_path* is the location of your Xilinx Mentor Graphics Interface.

2. Set the XACT environment variable as follows:

    setvar XACT *ds344_path*:*full_path*/**xact**

    export XACT

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

   **setvar MGLS_LICENSE_FILE **
   mentor_license_path/mentor_license_file

   export MGLS_LICENSE_FILE

4. Set the MGC_WD environment variable to point to the directory where your design is located.

   For example, if your design is in //group/usr/design, set the variable as follows:

   setvar MGC_WD //group/usr/design

   export MGC_WD

   You need to reset this variable every time you change design directories.

5. Set the optional MGC_GENLIB variable, which points to the Mentor generic library.

   setvar MGC_GENLIB *mentor_path***/gen_lib**

   export MGC_GENLIB

6. Set the MGC_HOME environment variable to point to where you installed the Mentor Graphics software.

   For example, if you installed that software in //tools/mentor/idea8.2_5, set the variable as follows:

   setvar MGC_HOME //tools/mentor/idea8.2_5

   export MGC_HOME

7. Set the LD_LIBRARY_PATH as follows:

   setvar LD_LIBRARY_PATH *mentor_path***:***openwin_path***/lib**

   export LD_LIBRARY_PATH

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

8. Set the MGC_LOCATION_MAP environment variable to point to the location of your mgc_location_map file.

For example, if you placed that file in //group/usr/mgc_location_map, set the variable as follows:

**setvar MGC_LOCATION_MAP **
//group/usr/mgc_location_map

export MGC_LOCATION_MAP

In your mgc_location_map file, you must reference $LCA; however, do not assign a value to it. The line $LCA must appear in the file, followed by a blank line. You can also add soft prefixes in the mgc_location_map file to point to your other designs.

For example, you might add the following entry:

$ourdesigns
//group/usr/design

This entry allows you to move the specified design among directories without changing any references to those designs. Simply change the path to "ourdesigns" in your mgc_location_map file.

9. Add the com and bin directories to your path definition. The com directory must precede the bin directories in the path.

**csr . *ds344_path*/com/apollo **
***ds344_path*/bin/apollo **
***full_path*/xact/bin/apollo **
//tools/mentor/idea8.2_5/bin

For example, if you installed Core software in //group/usr/xact and the Mentor Graphics Interface software in //group/usr/ds344, the startup file should contain the following entries:

```
csr . //group/usr/ds344/com/apollo \
//group/usr/ds344/bin/apollo \
full_path/xact/bin/apollo \
//tools/mentor/idea8.2_5/bin

setvar LCA //group/usr/ds344

export LCA

setvar XACT //group/usr/ds344://group/usr/xact

export XACT
```

```
setvar LM_LICENSE_FILE \
mentor_license_path /mentor_license_file

export LM_LICENSE_FILE

setvar MGC_HOME //tools/mentor/idea8.2_5

export MGC_HOME

setvar MGC_WD //group/usr/design

export MGC_WD

setvar MGC_LOCATION_MAP \
//group/usr/mgc_location_map

export MGC_LOCATION_MAP

setvar MGLS_LICENSE_FILE \
mentor_license_path /mentor_license_file

export MGLS_LICENSE_FILE

setvar MGC_GENLIB mentor_path/gen_lib

export MGC_GENLIB

setenv LD_LIBRARY_PATH mentor_path:openwin_path/lib

export LD_LIBRARY_PATH
```
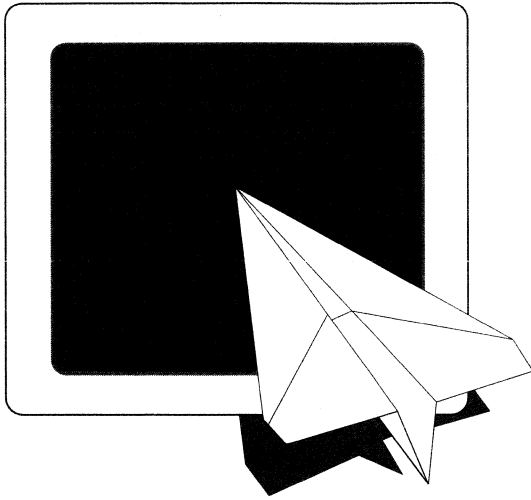
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Appendix D
Using the Keyboard

Appendix D

Using the Keyboard for Installation

Use the following keyboard commands to navigate and select objects on the screen.

Key	Action
Tab	Traverse objects forward and put them into focus
Shift-Tab	Traverse objects backward
Space bar or **Enter**	- Activate selection button or highlighted list item, including menu items - Highlight list item
Arrow keys	Scroll up or down inside selection boxes, including menus
Alt-*Character* (personal computer) **Meta-***Character* (workstation)	Select menu
Esc	-Unselect menu -Exit Help window