Adaptec 1160 Family Manager Set

for Windows NT, Sun Solaris, Novel NetWare, and SCO UnixWare

adaptec®

Ⅽ⯌adaptec®

Adaptec, Inc.
691 South Milpitas Boulevard
Milpitas, CA 95035

▾ ▾ ▾ ▾ Adaptec 1160 Family
Manager Set

User's Guide

⊄adaptec®

Copyright

Trademarks

Changes

Adaptec Technical Support and Services

If you have questions about installing or using your Adaptec product, check this user's guide first—you will find answers to most of your questions here. If you need further assistance, please contact us. We offer the following support and information services:

Electronic Support

Technical information, including product literature, answers to commonly asked questions, information on software upgrades and other topics is available electronically through the following:

■ Adaptec World Wide Web (WWW) site at *http://www.adaptec.com*.

■ File Transfer Protocol (FTP) server at *ftp.adaptec.com*.

■ Adaptec USA Bulletin Board Service (BBS) at 408-945-7727; supports up to 28,800 bps (bits per second), 8 data bits, 1 stop bit, no parity. No product literature is available on the Adaptec BBS.

■ Interactive Fax System at 303-684-3400; available 24 hours a day, 7 days a week.

Technical and Product Support

- For technical support and information about many of Adaptec's electronic support services, call 800-959-7274 or 408-945-2550, 24 hours a day, 7 days a week.

- To use the Adaptec Interactive Support System, call 800-959-7274 or 408-945-2550, 24 hours a day, 7 days a week. The system prompts you with questions regarding your problem and then provides step-by-step troubleshooting instructions.

- To speak with a product support representative, call 408-934-7274, M–F, 6:00 A.M. to 5:00 P.M., Pacific Time. After hours, on weekends, and on holidays, product support is also available for a fee at 800-416-8066.

Sales and Ordering Information

- For sales information, call 800-959-7274 or 408-945-2550, M–F, 6:00 A.M. to 5:00 P.M., Pacific Time.

- To order Adaptec software and cables, call 800-442-7274 or 408-957-7274, M–F, 6:00 A.M. to 5:00 P.M., Pacific Time.

- To request additional documentation for Adaptec products, call 800-934-2766 or 510-732-3829, M–F, 6:00 A.M. to 5:00 P.M., Pacific Time.

Federal Communications Commission Radio Frequency Interference Statement

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. However, if this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Use a shielded and properly grounded I/O cable and power cable to ensure compliance of this unit to the specified limits of the rules.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Compliance Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

▾ ▾ ▾ ▾ Contents

5   SCO UnixWare Installation

6   Open Firmware Utilities

7   X86 BIOS Utility

Index

Introduction

The Adaptec® 1160 Family Manager Set v1.1 is a set of software drivers and other files that enable your Adaptec 1160 Family host adapter to communicate with your computer. The Adaptec 1160 Family Manager Set contains drivers for the following operating systems:

- Microsoft Windows NT®
- Sun Solaris
- Novell NetWare
- SCO UnixWare

The remainder of this chapter includes a table that lists all Adaptec host adapters that make up the Adaptec 1160 Family, as well as the minimum requirements needed to install the software.

The remaining chapters are organized by operating system. Each chapter provides instructions on how to install the driver at the same time you install your operating system. If your operating system is already installed, instructions on updating or installing the driver are also included. If you have problems installing and using the driver, refer to the *Troubleshooting* sections, included at the end of each chapter.

Adaptec 1160 Family Host Adapters

The following Adaptec PCI-to-Fibre Channel host adapters are collectively referred to as the Adaptec 1160 Family host adapters:

Host Adapter	Description
AHA-F940	PCI-to-Fibre Channel (32 bit PCI connector)
AHA-F950	PCI-to-Fibre Channel (64 bit PCI connector)

Requirements

The following are the minimum and recommended requirements needed to install the Adaptec 1160 Family Manager Set:

- A computer, with available PCI slot(s) to install the Adaptec 1160 Family host adapter(s) into.

- An installed primary (boot) 3.5-inch (1.44 MByte) floppy diskette drive or CD-ROM drive. The drive must be able to read your operating system diskettes or CD-ROM.

- The diskettes included with your Adaptec 1160 Family Manager Set.

- *Optional*—an installed and configured CD-ROM drive for installing your operating system from CD-ROM.

- The distribution software and documentation included with your operating system.

- The *Installation Guide* for your host adapter.

....2

Microsoft Windows NT Installation

This chapter explains how to install the Adaptec 1160 Family Manager Set Driver (*aic116x.sys*) for Windows NT—Windows NT 4.0. The driver (*aic116x.sys*) supports the Adaptec 1160 Family host adapters listed on page 1-2.

If you are performing a first time Windows NT installation, see *Completing a Fresh Windows NT 4.0 Installation* on page 2-2. If Windows NT is already installed on your system, see *Installing the Driver When Windows NT Is Already Installed* on page 2-3.

Completing a Fresh Windows NT 4.0 Installation

To complete a *fresh* Windows NT 4.0 installation, and to install the
aic116x.sys driver from the 1160 Family Manager Set diskette for
Windows NT, follow these steps:

> **Note:** You can install Windows NT from a floppy drive or
> from a CD-ROM drive; whichever you choose, make sure
> the hardware installation is completed prior to following
> these steps.

1 Start your system with the Windows NT Boot Diskette in the
floppy drive.

2 When prompted, insert diskette #2 in your floppy drive. After
a few moments you will see a blue screen. To set up Windows
NT now, press **Enter**.

3 Press **S** to skip auto-detection of your SCSI host adapter.

4 Press **S** again to specify an additional device.

5 Press **Enter** to select Others; insert the 1160 Family Manager
Set diskette for Windows NT in your floppy drive.

6 Select the appropriate Adaptec AIC-1160 Family PCI Fibre
Channel Adapters (SCSI) for your hardware platform and
press **Enter**. There are two choices: Windows NT x86 and
Windows NT DEC Alpha platforms.

7 To add other host adapters that are not part of the 1160 Family,
press **S** and repeat step 5 for each additional adapter and insert
the appropriate disk provided by the hardware manufacturer.
The Adaptec 1160 Family host adapters use the same driver for
multiple adapters, so it is not necessary to install the
aic116x.sys driver again.

8 Press **Enter** to continue with the Windows NT operating
system setup. Follow the onscreen instructions and the
Windows NT documentation to complete the installation.

Installing the Driver When Windows NT Is Already Installed

To update or install the *aic116x.sys* driver if Windows NT is already installed, follow the instructions below:

1 Start Windows NT.

2 Click the **Start** button on the Windows NT task bar, and then point to **Settings**.

3 Click the **Control Panel**.

4 Double-click the **SCSI Adapters** icon.

5 Click the **Drivers** tab, and then click the **Add** button.

6 In the Install Driver window, click the **Have Disk** button.

7 Insert the 1160 Family Manager Set diskette for Windows NT into drive A; enter the following path to the installation files and then click **OK**.

  a:\winnt40

The Adaptec AIC-1160 Family PCI Fibre Channel Adapters (SCSI) is highlighted by default.

8 In the Install Driver window, click **OK**.

9 You must restart your computer for the changes to take effect. Click **Yes** to restart your computer.

Installing the Windows NT Driver on DEC Alpha Platforms

To install the *aic116x.sys* driver when Windows NT is already installed on a DEC Alpha system, follow the instructions below:

1 Start Windows NT.

2 Click the **Start** button on the Windows NT task bar, and then point to **Settings**.

3 Click the **Control Panel**.

4 Double-click the **SCSI Adapters** icon.

5 Click the **Drivers** tab, and then click the **Add** button.

6 In the Install Driver window, click the **Have Disk** button.

7 Insert the 1160 Family Manager Set diskette for Windows NT into drive A; enter the following path to the installation files and then click **OK**.

    a:\alpha40

The Adaptec AIC-1160 Family PCI Fibre Channel Adapters (SCSI) is highlighted by default.

8 In the Install Driver window, click **OK**.

9 You must restart your computer for the changes to take effect. Click **Yes** to restart your computer

Using Windows NT and the Host Adapter

This section contains useful information on using Windows NT and your host adapter.

Removing a host adapter can be as simple as physically removing it from the slot when your computer is shut down. Windows NT boots and functions properly in this configuration, but a warning message is generated every time you boot Windows NT.

> **Caution:** If you have removed a host adapter but still have other host adapters of the same type installed in your computer, *do not* use Windows NT Setup to remove the device driver.

To eliminate the warning message, you must update the Windows NT software configuration, as described below:

Removing a Host Adapter

1 From the **Control Panel**, double-click the **SCSI Adapters** icon.

2 Click the **Drivers** tab.

3 Select the driver to remove. The driver appears as follows:

Adaptec AIC-1160 Family PCI Fibre Channel Adapters (SCSI)

4 Click the **Remove** button.

5 If you are sure you are removing the correct host adapter type, click **Yes**.

6 Restart the computer.

> **Note:** Windows NT Setup does not delete the device driver from your system disk; it only updates Windows NT software configuration information so that the device driver is no longer loaded during system bootup.

Swapping a Host Adapter

Swapping an 1160 Family host adapter for a non-1160 Family host adapter is similar to the procedure for adding a host adapter. The

important distinction is that you make all software configuration changes while Windows NT is running and before you make the hardware changes.

To swap adapters, follow these steps:

1 Install the driver for the 1160 Family host adapter by following the steps in *Installing the Driver When Windows NT Is Already Installed* on page 2-3.

It is not essential to remove the device driver for the host adapter you are replacing. Windows NT dynamically detects the absence or presence of host adapter hardware, and no problems should arise if you leave the existing device driver installed. You may remove the device driver later, after you have successfully rebooted Windows NT. However, if you leave the driver installed, the system alerts you with an error message of the extra device driver every time you boot. See *Removing a Host Adapter* on page 2-5.

2 Once the new device driver is installed, shut down Windows NT and replace the existing host adapter with the 1160 Family host adapter.

3 Restart your computer and Windows NT. It is possible that some drive letter assignments may change from the previous configuration.

Troubleshooting

Problems and Solutions

I made changes to the host adapter configuration and Windows NT no longer boots!
The boot manager for Windows NT contains recovery logic to allow you to return to the last known good configuration. If you have changed your host adapter configuration and Windows NT no longer boots, follow these steps to recover:

1 Undo any hardware changes you have made to the computer since it was last operational.

2 Reboot the computer. Watch the display carefully during bootup. If the following message appears, press the **Spacebar** and follow the instructions on the screen to continue booting with the last known good configuration:

Press spacebar NOW to invoke the Last Known Good menu

3 Once your computer is operational again, check all of the hardware and software configuration changes you want to make. Look specifically for conflicts with parts of the existing system configuration that are not being changed.

AIC-1160 Error Codes

Error codes generated by the AIC-1160 can be viewed by opening the Windows NT Event Viewer error logs.

To view events generated by the AIC-1160, follow these steps:

1 Double-click the **Event Viewer** icon in the Administrative Tools program group.

Error codes generated by the AIC-1160 show up as Event ID 11. Error codes generated by the SCSIPort show up as Event ID 9.

2 To view event details, select **System** from the Log menu. Double-click the AIC-1160 event that has an Event ID of 11. (There may be none or multiple AIC-1160 events.)

The top portion of the Event Detail dialog box displays information such as the time that the event was generated, the computer on which the event occurred (in case of remote monitoring) and the description of the event. The Data section of the Event Details dialog box displays the error codes generated.

3 Click the **Words** radio button.

In the Data section of the dialog box, the entry in the second row and second column (to the right of the 0010: entry) lists the error code generated by the AIC-1160. The common error codes for the driver are described below.

> **Note:** The entry in the third row of the last column identifies the ID of the device originating the error.

Error Codes Defined by Number

The following error codes are listed sequentially according to the last three digits of the code. For example, [xxxxx010], [xxxxx011], [xxxxx012], etc.

Note: When reporting problems to Customer Support, be sure to include the complete error code in your problem description.

[xxxxx004] Command completed with error
[xxxxx005] Command completed with error
[xxxxx006] Command completed with error
A request issued to a target device completed with an indication that there is an error. In most cases, the error is recovered and normal operations continue.

[xxxxx010] Error issuing command

An error occurred while the driver was setting up its internal data structures.

[xxxxx011] Error issuing command

The requested command is not supported by this driver.

[xxxxx012] Error issuing command

The driver does not recognize the target device.

[xxxxx021] Device protocol error

An unexpected event occurred during data transfer between the adapter and target device. Normally, this indicates a faulty or noncompliant target device.

[xxxxx022] Adapter or target device protocol error.

The adapter or target device has broken the communication protocol. A badly behaving device could cause this message to appear. Normally this is not a serious problem. If you get this message frequently over a short period of time, it could indicate that the device or system is malfunctioning. Unplug or power down unused devices to see if the problem persists.

[xxxxx023] Target device parity error

The driver detected a parity error by the target device.

[xxxxx024] Data overrun or underrun

The adapter was given more or less than the expected amount of data.

[xxxxx031] Target device queue full

The target device internal buffer is full.

[xxxxx032] Target device busy

The target device reports a busy status. Another program may already be using this device.

[xxxxx050] Host adapter failure

Your host adapter may not be properly installed or is defective. Try re-seating the adapter in the PCI slot, or try installing it in a different PCI slot.

[xxxxx081] Adapter initialization failure

An error occurred while the driver was setting up its internal data structures. Verify that your adapter is supported by this version of the driver.

[xxxxx089] Unable to allocate memory

This indicates that there may be a problem with the amount of memory installed in your system. Verify that your system has at least the minimum amount of memory required by your operating system.

[xxxxx096] Adapter hardware initialization failure—possible resource conflict.
The driver has attempted to initialize the adapter hardware but failed. This might suggest that the adapter resources (for example, IRQ) conflict with another board installed in your system.

[xxxxx097] Unable to allocate memory

This indicates that there may be a problem with the amount of memory installed in your system. Verify that your system has at

least the minimum amount of memory required by your operating system.

[xxxxx0af] Unable to deallocate memory that was allocated for a target device
Normally, this is not a serious problem, unless you get this message frequently over a short period of time. The memory can be reclaimed by rebooting the system.

[xxxxx0ce] Scatter Gather Limit exceeded

An I/O request packet from the system contained a Scatter Gather element list that contained more elements than are supported by the miniport. Scatter Gather is a list of data segments that define the entire data transfer. Scatter Gather is a means to improve total data throughput. This error might be caused by a component external to the miniport driver, such as the operating system or an ASPI application.

[xxxxxd4] Adapter hardware failure - adapter reset

The host adapter hardware failed and the miniport has to reset the hardware.

[xxxxx0d6] Internal driver error

An error has occurred while the driver was setting up its internal data structures. Try installing the most up-to-date version of the driver available from the Adaptec Web site or BBS.

❐

▼▼▼▼3

Solaris/SPARC Installation

Follow the procedures below to install the Adaptec 1160 Family
Manager Set device driver for Solaris:

1   Insert the *Adaptec Fibre Channel Manager Set AIC1160*
    installation diskette into the floppy drive.

2   Log on to the Solaris operating system as root.

3   At the superuser prompt (#), type the following command and
    press **Enter**:

    /etc/init.d/volmgt stop   (stop the volume management)

4   Type the following and press **Enter**:

    pkgadd -d /dev/fd0

    The following is displayed:

    1 ADFadpfc   Adaptec AIC-116x PCI-FC (SCSI)
                         Host Adapter Driver

5   Select the package by typing 1 or all and pressing **Enter** to
    install the device driver.

6   Press **Y** to answer yes to each question that follows.

7   When the following message is displayed, type q to quit the installation:

Installation of <ADFadpfc> was successful.

8   Reboot the system to enable the new device driver to take effect.

❒

▼ ▼ ▼ ▼ **4**

Novell NetWare Installation

This chapter explains how to install the Adaptec 1160 Family Manager Driver (*aic116x.ham*) for Novell NetWare— v4.0 and v4.1x. The *aic116x.ham* driver supports the Adaptec 1160 Family host adapters listed on page 1-2.

If you are performing a first time NetWare installation, see *Installing the Driver when Installing NetWare* below. If NetWare is already installed on your system, see *Installing the Driver When NetWare is Already Installed* on page 4-3.

Installing the Driver When Installing NetWare

Follow the procedures below to install Drivers to NetWare 4.0 or 4.1x for the first time.

1 Install NetWare v4.1x on your server as instructed in your NetWare documentation.

2 If a screen appears requesting you to enter a disk driver, go directly to step 6, otherwise continue with step 3.

3 If a screen appears requesting you to enter a network driver, select the appropriate LAN driver for your network card, or press **F10** to continue without selection. If this screen does not appear, continue with step 4.

4 When the Choose the Server Drivers - Summary screen appears, highlight Disk and CD-ROM Drivers and press **Enter**.

5 Highlight Select additional drivers, and press **Enter**.

6 The screen will prompt you to select a disk driver from a list of available drivers. To install the driver from the list, highlight the *AIC116X.HAM* driver and press **Enter.**

To install the driver from the Adaptec 1160 Family Manager Set diskette:

a Press the **Insert** key**.**

b Insert the diskette into the floppy drive and press **F3**.

c Specify a path to the *aic116x.ham* driver for NetWare (for example: *a:\netware\v4_11*).

7 After all files are copied to the server, enter the required parameters (such as slot of the adapter) and select Save Parameters and Load Driver. This sets up to load the driver automatically when the server boots up.

8 If you have multiple adapters installed on your system, you will see a screen asking the following: do you want to select an additional driver? Select **Yes**, then select the *AIC116X.HAM* driver again. Do this for each additional adapter you install. When no more additional drivers are required, select **No** to continue.

9 If you do not want the driver to be loaded automatically at this time, press **ESC** to go to the previous screen and press **F10** to continue without selecting the driver.

10 Complete the installation by selecting Continue the Installation.

Installing the Driver When NetWare is Already Installed

1 At the server console screen prompt, type load install.

2 Select Configure disk and storage device drivers and press **Enter**.

3 Highlight Select an additional driver and press **Enter**.

4 When a screen appear that asks you to select a device driver, Press the **Insert** key.

5 Press **F3** and specify the path to the aic116x.ham driver for NetWare on the diskette or CD ROM(for example: *a:\netware\v4_11*).

6 Select *AIC116X.HAM* and press **Enter**.

7 After the files are copied to the server, enter the required parameters and select Save Parameters and Load Driver. This sets up to load the driver automatically at server bootup.

8 If you have multiple adapters installed on your system, you will see a screen asking the following: do you want to select an additional driver? Select **Yes**, then select the *AIC116X.HAM* driver again. Do this for each additional adapter you install. When no more additional drivers are required, select **No** to continue.

9 If you do not want the driver to be loaded automatically at this time, press **ESC** to go to the previous screen and press **F10** to continue without selecting the driver.

10 Press **ESC** to return to the previous screens.

Loading the Driver at Server Bootup

To automatically load the *aic116x.ham* driver at server bootup, the *startup.ncf* file (usually located in your server's startup directory) must contain a load command line that specifies the location of the driver and any appropriate command line options (see *Using the Load Command Line Option* on page 4-5). If you have already followed the steps described in the sections *Installing the Driver When Installing NetWare* on page 4-1 or *Installing the Driver When NetWare is Already Installed* on page 4-3, and have saved the parameters and loaded the driver, the *startup.ncf* file has already been modified and updated automatically. For additional information on the *startup.ncf* file, refer to your NetWare documentation.

> **Note:** To load the driver from your hard disk, the *aic116x.ham* module must be copied from the 1160 Family Manager Set diskette for NetWare to a directory on your hard disk [usually the server's startup directory (for example, *c:\nwserver*)].

The correct syntax to load the driver is

    load [*pathname*]aic116x [*options*]

For example, the command line to load the driver from the *c:\nwserver* directory, with the slot option is

    load c:\nwserver\aic116x slot=4

Command line options are *not* case sensitive. Placing commas between command line options is optional. See *Using the Load Command Line Option* on page 4-5 for possible values.

To modify the *startup.ncf* file, follow these steps:

> **Note:** You can also use your DOS text editor to modify the *startup.ncf* file.

1 Type load install at the NetWare prompt and press **Enter**.

2 Select the appropriate menu choice that allows you to edit the *startup.ncf* file.

3 Make the necessary changes. When you finish, press **Esc**.

Using the Load Command Line Option

You can specify the following command line option when the driver is loaded.

Option	Values	Default	Description
slot=	0-xxxx[1]	y[2]	Defines a physicalPCI slot number.

[1] The values can vary and are dependent on the system configuration.
[2] Number entered by user during installation.

Sample Load Commands

Here is an example of the *aic116x.ham* driver being loaded with command line options (this assumes the driver is being loaded from drive A and the adapter is installed in PCI slot number 4):

    a:\netware\v4_11\aic116x slot=4

❏

▼▼▼▼**5**

SCO UnixWare Installation

This chapter explains how to install the Adaptec 1160 Family Managers Set Driver (*adfc*) for SCO UnixWare 2.1.

If you are performing a first time SCO UnixWare installation, see *Installing the Driver When Installing SCO UnixWare* on page 5-2 to begin driver installation. If SCO UnixWare is already installed in your system, see *Installing the Driver When SCO UnixWare is Already Installed* on page 5-3.

Installing the Driver When Installing SCO UnixWare

To install the *adfc* driver at the same time you install SCO UnixWare 2.1, follow the instructions below.

1 Insert the Install diskette of the SCO UnixWare package into the floppy drive. Reboot your computer.

Wait for the first SCO UnixWare installation screen and prompt to appear, then follow the onscreen instructions.

2 When prompted to either Install Host Bus Adapter Drivers or Continue Installation, first remove the Install diskette, then select **Install Host Bus Adapter Driver** and press **Enter**.

3 Insert the 1160 Family Manager Set diskette for UnixWare 2.1 into the primary floppy drive and press **Enter** (you cannot load drivers from a secondary floppy drive).

As the driver loads, a message identifying the installed host adapter briefly appears on screen. The installation process determines which device drivers on the diskettes are needed.

4 If you have additional HBA diskettes, insert the next HBA diskette, select **Install Another HBA Diskette**, and press **Enter**.

If all of your HBA diskettes have been installed, remove the last HBA diskette, select **Continue Installation**, and press **Enter**.

5 If necessary, enter the DCU (Device Configuration Utility) to view/change the SCO UnixWare device driver configuration data.

6 Follow the onscreen instructions to continue with installation. Refer to the SCO UnixWare documentation and onscreen help files for help in choosing options.

> **Note:** If your installation fails, *do not* attempt to use the update installation pkgadd procedure to fix the installation. Follow the instructions in the SCO UnixWare documentation and in this document to retry the installation.

Installing the Driver When SCO UnixWare is Already Installed

To update or install the *adfc* driver if SCO UnixWare 2.1 is already installed, follow the instructions in this section. Procedures that are specific to a SCO UnixWare version are noted when necessary.

Caution: Improper or corrupt driver updates might *destroy* your existing SCO UnixWare file system. Back up all important files before proceeding. Consult your SCO UnixWare documentation for proper backup procedures.

Installing or updating the driver involves the following tasks, which must be completed in the order presented:

- *Backing Up the Computer*—Backs up the old SCO UnixWare kernel and any other important files.

- *Loading the Package*—Uses pkgadd to load the 1160 Family driver package. For computers booting from a device connected to an 1160 Family host adapter, this modifies the new driver that was loaded in the previous procedure. Loading the driver causes the driver to become a permanent part of the new boot kernel on rebuild.

- *Rebuilding the SCO UnixWare Kernel*—Rebuilds the kernel with the new driver.

- *Booting the New Kernel*—Reboots the computer with the new kernel.

Note: Remember that SCO UnixWare commands are *case sensitive*. Enter the commands exactly as shown here.

Backing Up the Computer

If you have not already done so, back up all important files on the computer. See your SCO UnixWare documentation for proper SCO UnixWare file system backup procedures.

1 Login as root at the UnixWare **#** system prompt.

2 To back up the old SCO UnixWare kernel, type the following and press **Enter**:

    cp /stand/unix /stand/unix.work

3 To back up the old configuration file, type the following and press **Enter**:

For SCO UnixWare 2.1:

    cp /etc/conf/sdevice.d/adfc /save/adfc

> **Note:** If the */save* directory does not exist, use the Unix *mkdir* command to create it first.

Loading the Package

To load the driver, follow these steps:

1 At the system prompt, type the following and press **Enter**:

    pkgadd -d diskette1

Follow the instructions onscreen to insert the IHV HBA diskette (or 1160 Family Manager Set diskette for UnixWare 2.1) into the floppy boot drive.

2 Select the *adfc* package from the onscreen menu and press **Enter**. The package is loaded into your SCO UnixWare operating system.

3 When the package has loaded, you may be prompted to install the diskette again.

Do not reinsert the IHV HBA diskette (or Adaptec 1160 Family Manager Set diskette for UnixWare 2.1). Instead, type q (quit) and press **Enter**.

4 Type mail and press **Enter**. The mail messages tell you if the installation was successful.

If a mail message informs you that the installation has failed, turn to *Troubleshooting* on page 5-10.

5 Type pkginfo and press **Enter**.

6 Verify that the *adfc* driver is now listed. The *adfc* driver appears among the other installed packages.

If the *adfc* driver does not appear in the pkginfo listing, turn to *Troubleshooting* on page 5-10.

The listing should be similar to

    system adfc Adaptec AIC-116x Family PCI-FC (SCSI) IHV HBA

Modifying the New System File

If your computer *is not to boot* from the host adapter SCSI bus, and you wish to leave the driver as a loadable module, skip to *Rebuilding the SCO UnixWare Kernel* on page 5-7.

If your computer *is to boot* from a device connected to an 1160 Family host adapter, follow these steps to modify the new driver system file that was loaded in the previous section.

1 Back up the *adfc* SCO UnixWare configuration file. To do this, type the following and press **Enter** after each line:

For SCO UnixWare 2.1:

> cd /etc/conf/sdevice.d
> cp adfc /save/adfc.org

> **Note:** If the */save* directory does not exist, use the Unix *mkdir* command to create it first.

2 To restore the configuration file, type the following and press **Enter**:

For SCO UnixWare 2.1:

> cp /save/adfc /etc/conf/sdevice.d/adfc

3 Display the contents of the *adfc* file by typing the following and pressing **Enter**:

For SCO UnixWare 2.1:

> cat adfc

Verify that the line $static is present immediately below the line $version 2.

Rebuilding the SCO UnixWare Kernel

To rebuild the UnixWare kernel with the new changes, follow these steps:

1 Type the following at the # prompt and press **Enter** after each line:

```
cd  /etc/conf/bin
./idbuild  -B
```

Status messages appear.

2 When the kernel has been built, type the following and press **Enter** after each line (0 in -g0 is zero, not the letter O):

```
cd  /etc/conf/cf.d
cp  unix  /stand/unix
cd  /
shutdown  -g0
```

3 Type y and press **Enter** when the computer asks if you really want to shut down. System Is Down should appear on the screen.

The SCO UnixWare kernel is now ready for host adapter operation.

Booting the New Kernel

To reboot the computer with the new kernel, follow these steps:

1 Follow the onscreen instructions (usually by pressing **Enter**) to reboot your computer.

2 Check the bootup messages to verify that all your installed FC devices are listed.

If some or all of your installed FC devices do not appear at this time, your FC cables may be loose, or the FC device setup may not be complete. If so, go back and correct any problems before proceeding.

3 Wait for SCO UnixWare to complete bootup with the new kernel.

Refer to *Troubleshooting* on page 5-10 if the computer crashes or if panic (SCO UnixWare error) messages appear during bootup.

The updated driver for SCO UnixWare should now be ready to use.

Using SCO UnixWare and the Host Adapter

This section contains useful information on using SCO UnixWare and your host adapter.

Using Tunable Parameters

For SCO UnixWare, some parameters are defined in the following files:

    /etc/conf/pack.d/adfc/space.c

These parameters can be tuned for the *adfc* driver. Please refer to the comments in the appropriate *space.c* file for a description of these parameters. After modifying the *space.c* file, you must rebuild the kernel then reboot the system for the new parameters to take effect. To rebuild the kernel, type the following, and press **Enter** after each line:

    /etc/conf/bin/idbuild -B
    cp /etc/conf/cf.d/unix /stand/unix

> **Note:** The *adfc* driver supports tagged queuing and reinitialization.

Using Multiple Host Adapters

When using multiple host adapters, consider the following:

- The host adapter and computer must be configured for multiple host adapters as explained in the host adapter's *User's Guide.*

- To boot from the 1160 Family host adapter, make sure the host adapter is installed in the lowest PCI slot number. See your host adapter's *User's Guide.*

- SCO UnixWare 2.x supports auto-configuration. When adding multiple host adapters to an existing SCO UnixWare 2.x system, simply install the board and reboot; the system automatically reconfigures and rebuilds the kernel. If you want to choose a host adapter to boot from, simply disable the BIOS on all other host adapters.

Removing the Driver

If you no longer need the *adfc* driver, you can use the following procedure to remove it completely:

1   Back up all important computer files.

2   At the UnixWare root prompt, type the following:

For SCO UnixWare 2.1:

/etc/conf/bin/idinstall -d adfc

The following files will be deleted:

/etc/conf/mdevice.d/adfc
/etc/conf/pack.d/adfc/Driver.o
/etc/conf/pack.d/adfc/space.c
/etc/conf/pack.d/adfc/disk.cfg
/etc/conf/sdevice.d/adfc
/usr/include/sys/adfc.h
/adfc/readme.txt

3   Then, rebuild the kernel (0 in -g0 is zero, not the letter O):

/etc/conf/bin/idbuild -B -K
cp /etc/conf/cf.d/unix /unix
cd /
shutdown -g0

4   Reconfigure your computer for your alternate or replacement drive controller, and reboot the computer.

Troubleshooting

Problems and Solutions

My computer crashes or displays panic messages during the bootup procedure!

You may have to boot from the backup kernel created earlier, and then perform the driver update procedure again.

To boot from the old kernel, follow these steps:

1 Reboot the computer.

2 At the Booting UNIX System… prompt or loading UnixWare graphics, press the **Spacebar**.

3 From the [boot]# prompt, first type KERNEL=old kernel (for example, KERNEL=unix.work) and press **Enter**. Then, type go and press **Enter**. Your computer should now boot from the backup kernel created earlier in *Installing the Driver When SCO UnixWare is Already Installed* on page 5-3.

To repeat the driver update procedure, follow these steps:

1 Follow the instructions in *Removing the Driver* on page 5-9 to delete the driver from your computer.

2 Perform the driver update procedure again. See *Installing the Driver When SCO UnixWare is Already Installed* on page 5-3.

Error Messages

The error messages listed below are the messages associated with the *adfc* driver. Messages are listed sequentially according to the last three digits of the error code. For example, [xxxxx020], [xxxxx021], [xxxxx022], etc.

Note: When reporting problems to Customer Support, be sure to include the complete error code in your problem description.

[xxxxx003] Command completed with error
[xxxxx004] Command completed with error
[xxxxx005] Command completed with error
[xxxxx006] Command completed with error
[xxxxx007] Command completed with error
[xxxxx008] Command completed with error
[xxxxx009] Command completed with error
A request issued to a target device completed with an indication that there is an error. In most cases, the error is recovered and normal operation continues.

[xxxxx010] Error issuing command
An error occurred while the driver was setting up its internal data structures. Try installing the most up-to-date version of the driver available from the Adaptec Web site or BBS.

[xxxxx011] Error issuing command
The requested command is not supported by this driver.

[xxxxx012] Error issuing command
The driver does not recognize the target device.

[xxxxx013] Error issuing command
[xxxxx014] Error issuing command
An error occurred while the driver was setting up its internal data structures. Try installing the most up-to-date version of the driver available from the Adaptec Web site or BBS.

[xxxxx015] Error issuing command
An error occurred with the driver. Try installing the most up-to-date version of the driver available from the Adaptec Web site or BBS.

[xxxxx020] Adapter or target device not responding or not connected
The target device did not respond to the adapter. If the device is present, refer to your host adapter's user's guide for troubleshooting information. If the device is no longer connected to the system, ignore this error.

[xxxxx021] Target device protocol error
An unexpected event occurred during data transfer between the adapter and target device. Normally, this indicates a faulty or non-compliant target device.

[xxxxx022] Adapter or target device protocol error
The adapter or target device has broken the communication protocol. A badly behaving device could cause this message to appear. Normally this is not a serious problem. If you get this message frequently over a short period of time, it could indicate that the device or system is malfunctioning. Unplug or power down unused devices to see if the problem persists.

[xxxxx023] Target device parity error
The driver detected a parity error by the target device. Make sure you are using good-quality SCSI cables.

[xxxxx024] Data overrun or underrun
The adapter was given more or less data than was expected.

[xxxxx030] Target device busy
The target device reports a busy status. Another program might already be using this device.

[xxxxx031] Target device queue full
The target device internal buffer is full.

[xxxxx032] Target device busy
The target device reports a busy status. Another program may already be using this device.

[xxxxx041] Command aborted
[xxxxx042] Command aborted
[xxxxx043] Command aborted
[xxxxx044] Command aborted
[xxxxx045] Command aborted
An internal condition caused the driver to abort the command. In most cases, the command is retried and is recovered, and normal operation continues.

[xxxxx046] Target device did not respond to abort sequence
The target device did not abort the command requested by the driver. Some devices do not support the abort command properly. Normally, this indicates a faulty or noncompliant target device.

[xxxxx047] Command aborted
An internal condition caused the driver to abort the command. In most cases, the command is retried and is recovered, and normal operation continues.

[xxxxx048] Unable to abort command
An error occurred while aborting a command. Possibly, the command has already completed and there is nothing to abort.

[xxxxx049] Command abort in progress
This indicates an abort command has been issued. This is a normal operating condition.

[xxxxx051] Target device did not respond to reset sequence
The target device did not reset correctly as requested by the driver. Normally, this indicates a faulty or noncompliant target device.

[xxxxx081] Adapter initialization failure
An error occurred while the driver was setting up its internal data structures. Verify that your adapter is supported by this version of the driver.

[xxxxx083] Adapter not supported by this version of the driver
Your adapter is not supported by the driver on your system. You may have installed a new adapter and have not updated the driver on your system.

[xxxxx096] Adapter hardware initialization failure - possible resource conflict
The driver has attempted to initialize the adapter hardware but
failed. This might suggest that the adapter resources (for example,
IRQ) conflict with another board installed in your system.

[xxxxx097] Unable to allocate memory
This indicates that there may be a problem with the amount of
memory installed in your system. Verify that your system has at
least the minimum amount of memory required by your operating
system.

[xxxxx098] Exceeded maximum number of host bus adapters
The driver detected more host bus adapters than is supported by
this version of the driver or operating system.

[xxxxx0a4] Bus reset by third party
Hardware such as an array enclosure may have reset the bus. This is
a normal condition unless you receive additional errors.

[xxxxx0a5] Bus reset by host adapter
The host adapter may have reset the bus. This is a normal condition
unless you receive additional errors.

[xxxxx0cf] System configuration error
The driver encountered an error with your hardware. Refer to your
host adapter's user's guide for troubleshooting information.

[xxxxx0d0] Command timeout
The target device is either busy, not ready, malfunctioning, or is not
present. Refer to your host adapter's user's guide for
troubleshooting information.

[xxxxx0d7] Target device scan failed
The driver encountered an error scanning the target device. Refer to
your host adapter's user's guide for troubleshooting information.

❐

▼▼▼▼6

Open Firmware Utilities

This chapter covers maintenance utililities available for systems with Open Firmware. These utilities are used directly from the P1275 User Interface. The following programs are available:

- **EZOK**— is a utility that enables you to perform maintenance operations.

- **FC***Select*— is a utility that enables you to view and monitor configuration settings for fibre-channel devices and perform low level format and disk verification of SCSI drives. FCSelect can be loaded using the EZOK Utilities option, or directly from the P1275 Interface.

Selecting a Single-Chip Host Adapter with the P1275 User Interface

1 Enter the system's Forth evaluator.

2 To display a list of attached devices, type the following command at the OK prompt (also known as the *Forth prompt*, *Forth evaluator*, or *ROM monitor*):

    show-devs

3 From the OK prompt, select the Adaptec single-chip host adapter to be configured. The word *select* is used to establish a device instance for the adapter. For example, to select a single-chip host adapter, type the following command:

    select /pci/fibre-channel@2

Some systems may allow abbreviated forms of the device path name for selection, for example:

    select /pci/@2

4 To verify the selection, type the following command at the OK prompt:

    pwd

5 To view the configuration properties of any selected single-chip host adapter, type the following command at the OK prompt:

    .properties

6 To obtain firmware release and copyright information, type the following at the OK prompt:

    release
    copyright

Using EZOK

The EZOK utility, contained in the *ezok.fth* file, enables you to perform a variety of single-chip host adapter maintenance operations from the P1275 User Interface.

Executing the EZOK Utility

1 Copy the following files to the root partition of an appropriately formatted storage medium:

■ *ezok.fth*

■ *1160.fc*

2 Execute the EZOK utility.

Boot Medium

If your Open Firmware implementation requires you to execute the EZOK utility from a bootable medium, you may have to first halt the system to return control to the ROM monitor. How you boot the EZOK utility depends on the system you are running. For example, to boot the EZOK utility from a diskette at the OK prompt, type the following command:

    boot floppy -F /ezok.fth

User Interface

Some systems provide user interface commands to load files from a diskette into system memory from the OK prompt. The commands provided and their syntax are system-dependent. For example:

■ For Motorola FirePower systems, insert the diskette in the floppy drive and type the following command from the OK prompt:

    fpload ezok.fth

■ Other systems may require you to perform floppy file accesses using the standard Open Firmware interface by entering the following commands:

```
" floppy:,\ezok.fth" open-dev >r
load-base 10000 " read" r@ $call-method
r> close-dev load-base swap evaluate
```

The EZOK utility loads and immediately executes.

If multiple host adapters are installed in the system, EZOK displays them in their relative positions in the device tree, similar to Figure 6-1:

```
                      Adaptec EZOK(TM) Utility
         Copyright (c) 1996-1998 Adaptec, Inc.  All rights reserved
---------------------------------------------------------------------------------------------
    /pci/fibre-channel@2
    /pci/fibre-channel@3
---------------------------------------------------------------------------------------------
    Select Device: [/pci/fibre-channel@2          ]
```
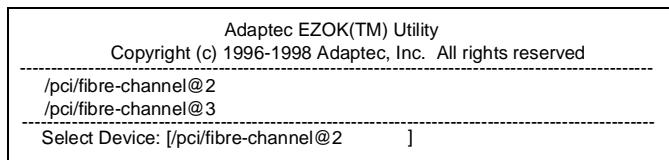
Figure 6-1. EZOK Utility—Multiple Single-Chip Host Adapters

If only one host adapter is installed in the system, EZOK immediately displays the menu shown in the next step.

3 Select a device by pressing ↑, ↓, or **Space** until the single-chip host adapter you want appears at the Select Device prompt, and then press **Enter**. To quit the EZOK utility, press **q** or **Esc**.

The following list of options appears, followed by the Select Option prompt (Figure 6-2).

```
---------------------------------------------------------------------------------------------
    Products                       ... view compatibility list
    Properties                     ... view device properties
    Utilities                      ... execute adapter utilities
    Flash                          ... Load/Erase/Write/Verify
      Load                         ... copy image file to RAM
      Erase                        ... erase programmable ROM
      Write                        ... copy RAM image to ROM
      Verify                       ... compare ROM image to RAM
      View ROM                     ... view programmed ROM image
      View RAM                     ... view loaded RAM image
      Checksum                     ... calculate ROM checksum
    Evaluate                       ... load and execute
---------------------------------------------------------------------------------------------
    Select Option: [Products          ]
```
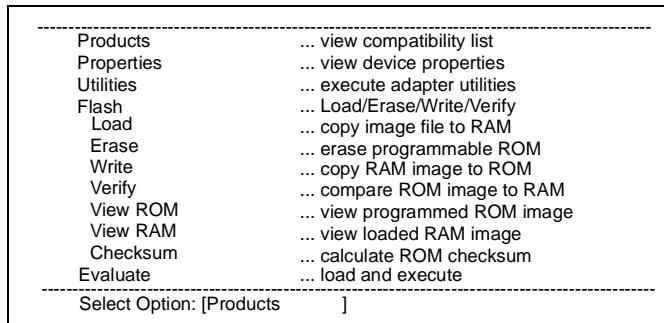
Figure 6-2. EZOK Options

4 Select an option by pressing ↑, ↓, or **Space** until the option you want appears at the Select Option prompt, and then press **Enter**.

5 To go back to the list of devices, press **q** or **Esc**.

EZOK Options

Products

This option lists the contents of the compatible property, which contains all valid Open Firmware name strings for the device. If no compatible property exists, the options list is redisplayed, and you are prompted for another selection.

Properties

This option lists all device properties generated by the system and the FCode driver (if present).

Utilities

This option executes the device's FC*Select* utility. If the FC*Select* utility is not found, the Evaluate option is first executed to load the default FCode driver (*1160.fc*) and initialize the device. Once this is done, FC*Select* is automatically invoked.

> **⚠ Caution:** The Evaluate option overwrites the contents of the system RAM location used for client programs. Therefore, be careful when you use the Write option to flash plug-in devices.

Flash

This option loads the host adapter's flash image into memory, erases the contents of the programmable flash ROM on the plug-in device, writes the flash memory image to its flash ROM, and verifies that the image was successfully flashed. When the Flash option is selected, you are prompted for a filename from which to flash. If you press **Enter**, the utility loads the image from the default filename. The device nodes for which the default filenames are searched, and the order in which they are searched, are shown below:

```
<default-filename>
\<default-filename>
disk:,\<default-filename>
cdrom:,\<default-filename>
floppy:,\<default-filename>
net:,\<default-filename>
```

■ **Load**—The Load option allows you to copy a file from permanent storage to RAM without affecting the contents of the device's flash ROM. You are prompted for a filename to read. If you do not specify a filename, the utility loads the image from the default filename.

■ **Erase**— The Erase option enables you to erase the device's flash ROM. Accepting this option (pressing **Enter** when Erase is displayed at the Select Option prompt) erases the ROM.

■ **Write**— The Write option allows you to write the contents of the file that the Load option last read into system RAM to the device's programmable flash ROM.

■ **Verify**— The Verify option simply verifies that the contents of the flash ROM match the contents of the file last read into system RAM by the Load option.

■ **View ROM**— This option enables you to view the binary contents of the device ROM. You are first prompted for a hexadecimal offset from which to begin viewing. If you press **Enter** without specifying an offset, the utility assumes an offset of 0.

■ **View RAM**— This option allows you to view the binary contents of the image file last read into the system's RAM area by the Load (or Evaluate) option. You are first prompted for a hexadecimal offset from which to begin viewing. If you press

Enter without specifying an offset, the utility assumes an offset of 0.

■ **Checksum**— This option sums the contents of the device's expansion ROM. The algorithm sums the contents in bytes and displays the sum as a 16-bit quantity.

Evaluate

This option prompts you for an FCode image filename to evaluate on the currently selected device. If you do not specify a filename, the utility loads the default FCode image filename, *1160.fc*, from the storage medium into the system RAM area used for client programs and interprets the FCode program tokens loaded there on the currently selected device. The Evaluate option is useful for testing new code, embedded designs, and nonflashable plug-in devices.

Caution: The Evaluate option overwrites the contents of the system RAM location used for client programs. Therefore, be careful when you use the Write option to flash plug-in devices.

Using FC*Select*

The FC*Select* utility enables you to view host adapter configuration settings directly from your computer's desktop. FC*Select* also contains utilities that allow you to low-level format or verify the disk media of your SCSI hard disk drives.

Executing the FC*Select* Utility

1 If you selected a single-chip host adapter from the P1275 User Interface, type the following command at the OK prompt:

   fcselect

A screen similar to Figure 6-3 appears:

```
AHA-F940    NODE 00000020010000d1    PORT 00010020010000d1

Topology:                        Arbitrated Loop
ROM Access Time:                 100 ns
ROM Size:                        512 Kbytes
FC-1:                            10 bit
Fibre Channel Word Rate:         FCLKIN / 4
Buffered Reference Clock Rate:   [disabled]
Transmit Byte Clock Rate:        FCLKIN


AIC Technology:                  FC Host Adapter
Command Channel:                 Supported
PCI Width:                       32 bit
Protocol:                        Storage Initiator
Media:                           Copper w/MIA Current Sense
RAID Support:                    Host Adapter
Media Connection:                Direct Media
Product Family:                  AHA-F9x0
AIC Location:                    Add-in board


Hardware Revision:               C
LUN Support:                     Disabled
Payload Size:                    512 Bytes
Topology:                        Arbitrated Loop
BIOS:                            Enabled
INT13:                           Enabled
Service Class:                   Class-3
Maximum TCB Count:               32
Maximum Unsolicited Count:       3

More [<space>,<cr>,q] ?
```

Figure 6-3. FC*Select* Screen

2 Exit FC*Select* by pressing **q**. To invoke the SCSI Disk Utilities option, press **Enter** or **Space**.

To use the SCSI Disk Utilities option:

FC*Select* immediately scans the active device's SCSI bus for all devices connected to the active single-chip host adapter. FC*Select* displays a list of all attached devices and the SCSI IDs assigned to them. Figure 6-4 shows an example of a SCSI Disk Utilities target selection screen.

```
-------------------------[     SCSI Disk Utilities     ]-------------------------
      SCSI ID:   72 - Disk                        - SEAGATE ST19171F
      SCSI ID:  125 - Host Bus Adapter       - AHA-F940
      Select Target: [ SCSI ID:   72 - SEAGATE ST19171F     ]
```

Figure 6-4. SCSI Disk Utilities

3 Use the appropriate keys as listed below for the various SCSI Disk Utilities selection screens. Alternate keys, where possible, are provided for terminal emulators that do not support certain keyboard inputs. Refer to the table below for keys and their functions (SCSI Disk Utilities)

Key	Function
up/down arrow or **Space**	Scrolls through the list of available devices or options.
Enter	Accepts the selected device or option.
Esc	Terminates FC*Select* or aborts an operation
?	For some fields, displays help text

4 To select a device:

– Use the vertical arrow keys or **Space** key to scroll through the list of devices.

– When the device you want appears at the Select Target prompt, press **Enter**.

If you select an invalid entry, a message appears advising you of the problem.

– Press **Esc** to exit the FC*Select* SCSI Disk Utilities, or

– Press any other key to return to the SCSI Disk Utilities target selection screen.

Once a valid device is selected and accepted, FC*Select* displays the selection and asks if you want to format or verify the device, as shown below.

```
SCSI ID:  72   UNIT:    0 - Disk              - SEAGATE ST19171F
Do you wish to FORMAT or VERIFY the device? [ VERIFY ]
```

Figure 6-5. Select Format or Verify

5   Select VERIFY or FORMAT. These options are explained in the following sections.

Using the VERIFY SCSI Disk Media Utility

1   Select the VERIFY option. A safety prompt appears to verify the selection, as shown in Figure 6-6 below.
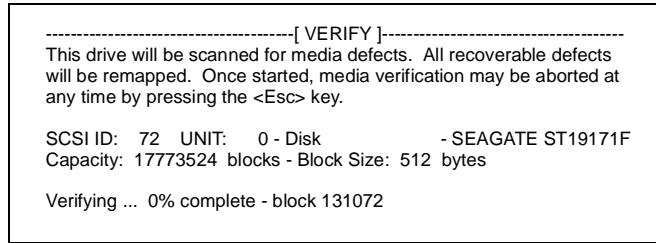
```
----------------------------------[ VERIFY ]----------------------------------
This drive will be scanned for media defects.  All recoverable defects
will be remapped.  Once started, media verification may be aborted at
any time by pressing the <Esc> key.
Press <Enter> to initiate; <Esc> to abort
```

Figure 6-6. Verify Option

2   Execute the utility by pressing **Enter**. To discontinue, press **Esc**.

The VERIFY utility sequentially scans the selected device's media for defects. A screen similar to the one below appears.

```
----------------------------------[ VERIFY ]----------------------------------
This drive will be scanned for media defects.  All recoverable defects
will be remapped.  Once started, media verification may be aborted at
any time by pressing the <Esc> key.

SCSI ID:  72   UNIT:    0 - Disk              - SEAGATE ST19171F
Capacity:  17773524  blocks - Block Size:  512  bytes

Verifying ...  0% complete - block 131072
```

Figure 6-7. Verify Utility

If the VERIFY utility finds a Recovered Error or a Medium Error on the device, a message similar to the following appears:

```
Verifying ... ERROR - sector 131072 has a defect - REASSIGN BLOCK?
```

– Press **Y** to reassign the defective sector and continue media verification, or

– Press **N** to ignore the defective block and continue media verification with the next sector, or

– Press **Esc** to abort the operation.

Using the Format SCSI Disk Utility

Fixed data media must be low-level formatted before an operating system's partitioning and file preparation utilities can be used. (Most SCSI disk drives are low-level formatted at the factory.)

Adaptec's FORMAT utility is compatible with the majority of SCSI disk drives. Use the FORMAT utility to format hard disk drives or removable-media drives that were previously used with non-Adaptec host adapters.

> **Caution:** Low-level formatting destroys all the data on a disk drive. Be sure to back up any data you want to keep before you low-level format your drive. Once started, a low-level disk format cannot be aborted.

1 Select the FORMAT option from the format or verify device screen. A safety prompt that verifies the selection appears, as shown in Figure 6-8 below.
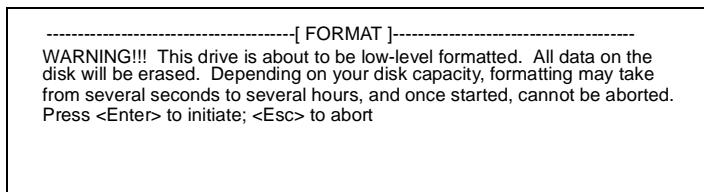
```
----------------------------------------[ FORMAT ]---------------------------------------
WARNING!!!  This drive is about to be low-level formatted.  All data on the
disk will be erased.  Depending on your disk capacity, formatting may take
from several seconds to several hours, and once started, cannot be aborted.
Press <Enter> to initiate; <Esc> to abort
```

Figure 6-8. Format Option

2 To begin formatting, press **Enter**; to discontinue, press **Esc**. The FORMAT utility begins to low-level format the hard disk drive, as shown in Figure 6-9 below.
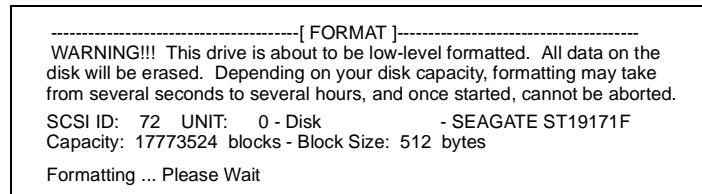
```
----------------------------------------[ FORMAT ]----------------------------------------
 WARNING!!!  This drive is about to be low-level formatted.  All data on the
disk will be erased.  Depending on your disk capacity, formatting may take
from several seconds to several hours, and once started, cannot be aborted.
SCSI ID:   72   UNIT:     0 - Disk                  - SEAGATE ST19171F
Capacity:  17773524  blocks - Block Size:  512  bytes

Formatting ... Please Wait
```

Figure 6-9. Format Utility

3 When formatting is complete, all intermediate keyboard inputs are discarded and a message similar to the following appears in the FORMAT utility message screen:

```
Formatting ... COMPLETE - Elapsed Time: 2 Hrs 13 Mins 16 Secs
```
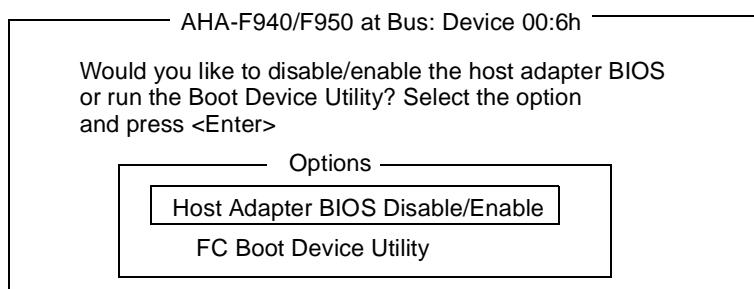
▼▼▼▼7

X86 BIOS Utility

This chapter covers the DOS-based utility available for systems using the X86 BIOS. This utility allows you to enable or disable the BIOS, or access the Fibre-channel boot utility. To run the utility:

1 When the Ctrl-A banner is displayed upon boot-up, press **Ctrl-A**. The Main screen appears, providing two options: **Host Adapter BIOS Disable/Enable**, and **FC Boot Device Utility**. Refer to the figure below.
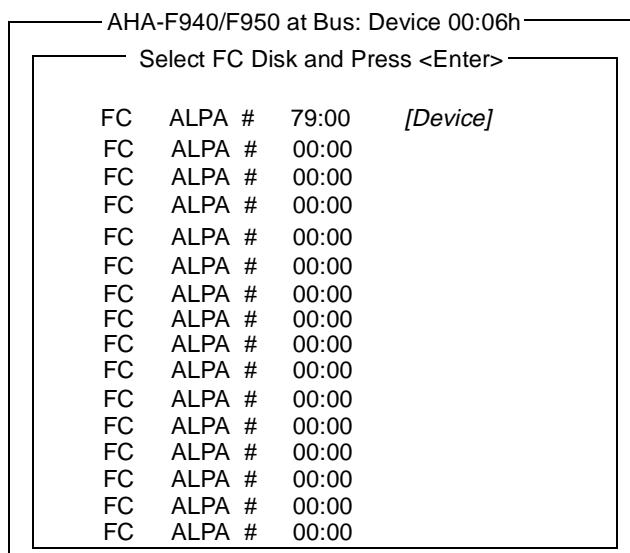
```
┌─────────── AHA-F940/F950 at Bus: Device 00:6h ───────────┐
│                                                          │
│   Would you like to disable/enable the host adapter BIOS │
│   or run the Boot Device Utility? Select the option      │
│   and press <Enter>                                      │
│              ┌──────────── Options ────────────┐         │
│              │  ┌──────────────────────────────┐ │       │
│              │  │ Host Adapter BIOS Disable/Enable │      │
│              │  └──────────────────────────────┘ │       │
│              │     FC Boot Device Utility       │         │
│              └──────────────────────────────────┘         │
│                                                          │
└──────────────────────────────────────────────────────────┘
```

2 Use the **Arrow** keys to select the option and press **Enter**.

Host Adapter BIOS Disable/Enable

This option allows you to enable or disable the AHA-F940/F950 adapter's BIOS. Use the **Arrow** keys select Enable or Disable and press **Enter**.

FC Boot Device Utility

When selecting this option, the system scans for all connected devices and displays them on a screen similar to the one below. From this screen, you can select the device that the BIOS will scan first and assign the next drive letter. Provided in the list is the ALPA # and the LUN number for each device.

```
┌─────────── AHA-F940/F950 at Bus: Device 00:06h ───────────┐
│   ┌────────── Select FC Disk and Press <Enter> ──────────┐ │
│   │                                                      │ │
│   │    FC    ALPA  #    79:00      [Device]              │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   │    FC    ALPA  #    00:00                            │ │
│   └──────────────────────────────────────────────────── │ │
└───────────────────────────────────────────────────────────┘
```

Key	Function
Arrow Keys	Scrolls through the list of devices
Enter	Selects the device
Esc	Exits the screen and returns to the main menu.
F3	Moves to the next page of devices.
F1	Moves to the previous page of devices.

❐

▾▾▾▾ Index