INSTALLATION AND HARDWARE GUIDE

AAA-UDMA
ULTRA DMA/66 RAID CARD

AAA-UDMA

Ultra DMA/66 RAID Card

Installation and Hardware Guide

adaptec®

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Regulatory Compliance Statements

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.

Adaptec, Inc.	AAA-UDMA
FC	Tested to Comply With FCC Standards
FOR HOME OR OFFICE USE	

European Union Compliance Statement

This Information Technology Equipment has been tested and found to comply with the following European directives:

EMC Directive 89/336/EEC

EN 50081-1 (1992):
EN55022 (1994) Class B

EN 50082-1 (1992):
EN61000-4-2 (1998)
EN61000-4-3 (1998)
EN61000-4-4 (1995)

Australian/New Zealand Compliance Statement

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Spectrum Management Agency.

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.

Japanese Compliance

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1

Introduction

In this Chapter

The Adaptec® AAA™-UDMA RAID card provides powerful disk
array support in systems that have a PCI bus. The AAA-UDMA is a
full-size PCI UDMA RAID card with four, 40-pin internal UDMA
connectors. A single UDMA drive can be connected to each of the
four internal UDMA connectors on the AAA-UDMA (four UDMA
drives total).

> **Note:** The AAA-UDMA supports UDMA (UDMA 33 or 66)
> hard disk drives only. Any combination of UDMA 33 or 66
> hard disk drives can be connected to the AAA-UDMA.
> Throughout the industry, these drives are also often referred
> to as *ATA*, *EIDE*, *IDE*, or *Ultra DMA*. The AAA-UDMA does
> not support CD-ROM, tape drives, or other non-hard disk
> drive devices.

This *Installation and Hardware Guide* explains how to install the AAA-UDMA, connect UDMA drives to it, run the **ARRAYCONFIG™ UDMA** Utility to create the first array for a bootable array configuration, and then install the software device driver for your operating system.

Use the Adaptec CI/O Management Software™, which is included with the AAA-UDMA, to create additional arrays (CI/O™ is required for array management in order to provide the proper level of fault tolerance and event notification). Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

System Requirements

The minimum system requirements for the AAA-UDMA are:

- PCI-based 266-MHz Pentium II or equivalent motherboard that is PCI 2.1 compliant

- An available full-length, unobstructed PCI slot that supports Bus Mastering

- A minimum of one UDMA drive (UDMA 33 or 66)

- A standard non-buffered 60 ns (or faster), 3.3V, ECC, 168-pin EDO DIMM installed on the adapter. (A 2 MB DIMM is typically pre-installed.) See the Adaptec Web Site at *http://www.adaptec.com/tools/compatibility/u2dimm.html* for a list of approved DIMMs and vendors

- 5 MB of free hard disk space for the AAA-UDMA software (5 MB of free hard disk space on the Windows system disk are also required for the temporary files created during installation of the software)

- Windows NT™ 4.0 Server, Windows 2000™, or Novell NetWare 4.11, 4.2, or 5.0

- A 3.5-inch 1.44-MB primary (boot) floppy disk drive

- 64 MB or more of system memory.

Caution: An Uninterruptable Power Supply (UPS) is a key feature for system fault tolerance. It is possible to lose data due to power failure or power brown outs. In order to prevent errors or data loss due to power failure, Adaptec strongly recommends that a UPS be installed to support your system.

Installation Overview

To install AAA-UDMA hardware and software, follow these steps:

- Install the AAA-UDMA in the system. (Chapter 2)

- Connect UDMA drives to the AAA-UDMA. (Chapter 2)

- Create the first bootable array using the **ARRAYCONFIG UDMA** utility. (Chapter 3)

- Install the appropriate Array1000UDMA software driver for your operating system. (Chapter 4, Chapter 5, and Chapter 6)

- Install the Adaptec CI/O Management Software. (See the *Adaptec CI/O Management Software User's Guide* for more information)

Note: Before proceeding with installation, review the *readcio.txt* file found in the Adaptec CI/O Management Software CD-ROM and the *relnote.txt* file found in the root directory of the Array1000UDMA driver diskette.

2

Installing the Hardware

In this Chapter

This chapter explains how to install the AAA-UDMA and connect UDMA drives to it.

Note: The AAA-UDMA supports UDMA (UDMA 33 or 66) hard disk drives only. Any combination of UDMA 33 or 66 hard disk drives can be connected to the AAA-UDMA. Throughout the industry, these drives are also often referred to as *ATA*, *EIDE*, *IDE*, or *Ultra DMA*. The AAA-UDMA does not support CD-ROM, tape drives, or other non-hard disk drive devices.

Note: The AAA-UDMA does not support the hot-swap functionality on the UDMA drives.

WARNING: Before handling the AAA-UDMA and any other electronic component, ground yourself by touching an unpainted metal surface on your computer chassis.

AAA-UDMA RAID Card Layout

Figure 2-1 identifies the major components on the AAA-UDMA. You may find it helpful to refer to this figure while installing the AAA-UDMA and attaching UDMA drives to it.
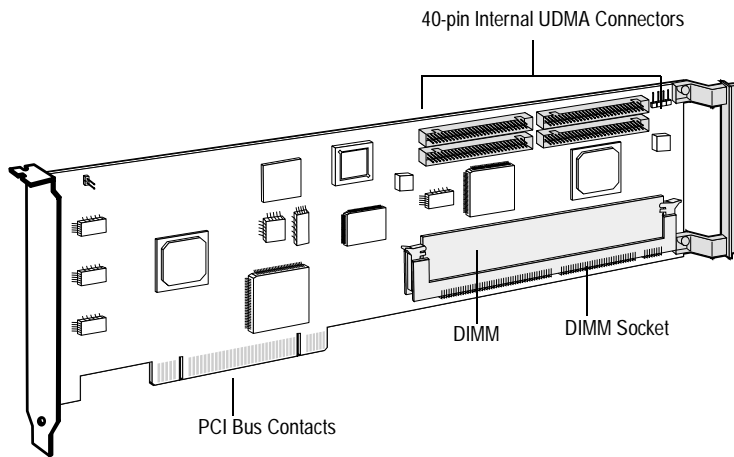
Figure 2-1. AAA-UDMA Major Components

Installing DIMM Memory

Before you can use the AAA-UDMA, the DIMM memory socket must be populated with a DIMM, as shown in Figure 2-2. In most cases, the AAA-UDMA comes pre-installed with a DIMM. If a DIMM is not pre-installed, a non-buffered 60 ns (or faster), 3.3V, ECC, 168-pin EDO DIMM can be used. A DIMM of up to 64 MB is supported. (See the Adaptec Web Site at *http://www.adaptec.com/tools/compatibility/u2dimm.html* for a list of approved DIMMs and vendors.)

168-pin DIMM
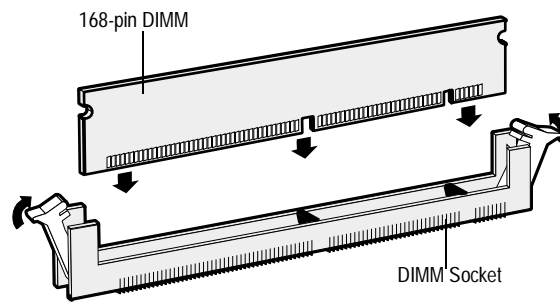
DIMM Socket

Figure 2-2. Installing DIMM in the DIMM Socket

Installing the AAA-UDMA

Follow these steps to install the AAA-UDMA:

> **Note:** If you are installing the AAA-UDMA in an existing system, back up all data before continuing with installation.

1 Turn OFF power to the computer and disconnect the power cord.

2 Remove the cover from the computer case.

3 Locate an unused, unobstructed, PCI expansion slot and remove the expansion slot cover. (The expansion slot must be PCI 2.1 or higher and must support Bus Mastering.) Save the slot cover screw for use in Step 4.

4 Insert the AAA-UDMA in the PCI expansion slot; press down firmly until it clicks into place, then replace the slot cover screw.

AAA-UDMA Installed in PCI Expansion Slot
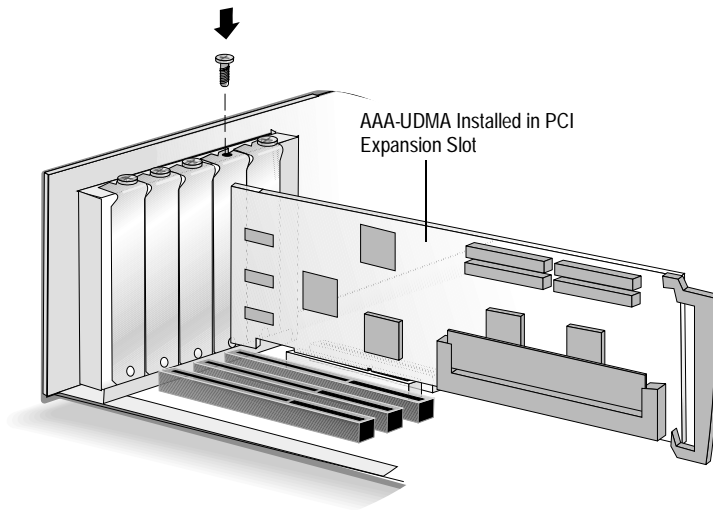
Figure 2-3. Installing an AAA-UDMA in PCI Expansion Slot

Connecting the LED Activity Indicator

(Optional) An LED on the front panel of most computers lights to indicate activity on your hard disks. If you want the LED to light whenever there is activity on hard disks connected to the AAA-UDMA, you must disconnect the LED cable from the mother-board and connect it to the LED connector on the AAA-UDMA. If the LED has a 2-pin cable, connect the cable to pins 1 and 2 of the LED connector.

Note: If you connect the LED cable to the AAA-UDMA, the LED lights whenever there is activity on hard disks connected to the AAA-UDMA only. The LED will no longer light whenever there is activity on hard disks not connected to the AAA-UDMA.
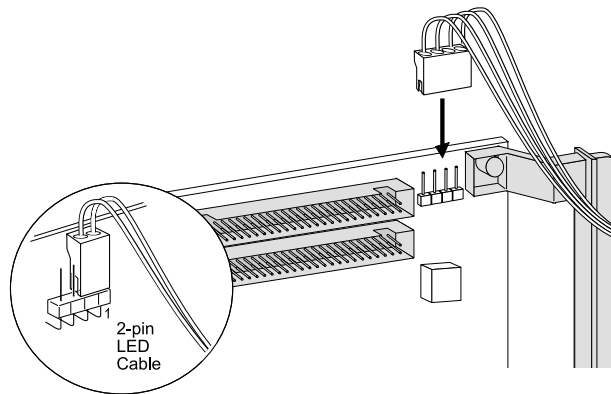
Figure 2-4. Connecting the LED Activity Indicator

Setting Up UDMA Drives

Setting up UDMA drives before connecting them to the AAA-UDMA typically involves setting jumpers, mounting UDMA drives inside your computer, and connecting power cables to each device.

Since setup can vary from device to device or computer to computer, always refer to the UDMA drive's or computer's documentation for specific instructions. Below are some guidelines for setting up UDMA drives. Additional installation hints for UDMA drives are also provided.

Note: If you refer to the UDMA drive's documentation for installation instructions, be sure to return to this document to continue with installation of the software included in the package.

Setting Jumpers on UDMA Drives to the Master Setting

Each UDMA drive you are connecting to the AAA-UDMA must be set to the *Master* setting. If your UDMA drive is set to the *Slave* setting, you must change it to the *Master* setting. This is typically done by changing jumper settings on the drive. The *Master* setting is the factory default setting on most UDMA drives. Refer to your drive's documentation for appropriate jumper settings.

Mounting UDMA Drives and Connecting Power Cables

Each UDMA drive must be mounted in an available drive bay inside your computer (as shown in Figure 2-5) and connected to a power cable from your computer's power supply. Refer to your computer and device documentation for instructions on installing devices inside your computer.
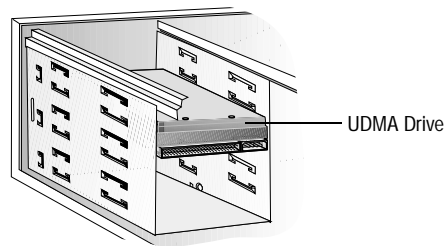
Figure 2-5. UDMA Drive Mounted in Drive Bay

Additional Hints for UDMA Drives

All UDMA Drives

■ If you are booting your system from a single UDMA drive or bootable array, the boot order (or *virtual device order*) of the drive or array must be set to 0. (See *Making the Array Bootable* on page 3-8.)

Cable Lengths

■ To connect a UDMA drive to the AAA-UDMA, a UDMA/66 cable is required. Each UDMA/66 cable should not exceed 18-inches in length. Adaptec strongly recommends that you use only the two-connector UDMA/66 cables provided by Adaptec.

Connecting UDMA Drives

The AAA-UDMA supports up to four UDMA drives. Before connecting drives to the AAA-UDMA, be sure to also review *Setting Up UDMA Drives* on page 2-6.

Connecting UDMA Drives to the UDMA Connectors

Using the four 40-pin UDMA/66 cables included in your kit, you can connect a single UDMA drive to each of the four internal UDMA connectors on the AAA-UDMA.

✔ **Note:** Retail vendors usually supply UDMA/66 cables equipped with three connectors, allowing for up to two UDMA drives. When connecting UDMA drives to the AAA-UDMA, connect only one UDMA drive to each UDMA/66 cable used. If you connect more than one drive to a cable, the AAA-UDMA will not function properly. Adaptec strongly recommends that you use only the two-connector UDMA/66 cables provided by Adaptec.

Follow these steps to connect your UDMA drives:

1 Locate the 40-pin, UDMA/66 cable. The UDMA cable has a blue and a black connector. The blue connector is marked *TO CARD* and should always be connected to the AAA-UDMA card. The black connector is marked *TO DRIVE* and should always be connected to the drive. Reversing the connection degrades the performance.

Blue Connector
Connect to
AAA-UDMA

Black Connector
Connect to UDMA Drive
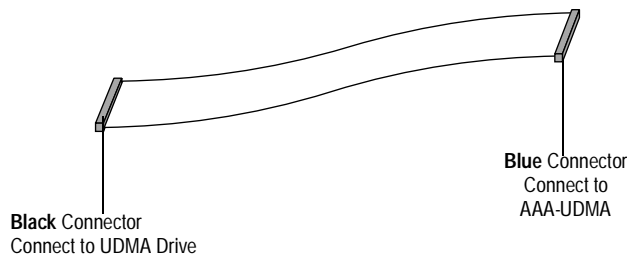
Figure 2-6. 40-pin UDMA/66 Cable

2   Plug the *TO CARD* (Blue) end of the cable to one of the four
UDMA connectors on the AAA-UDMA.

UDMA Connector   40-pin UDMA/66 Cable
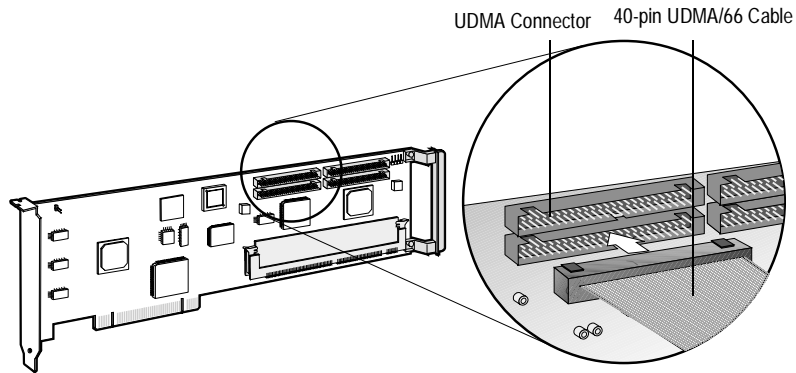
Figure 2-7. Connecting Cable to UDMA Connector

3   Plug the *TO DRIVE* (Black) end of the cable to your UDMA
drive.
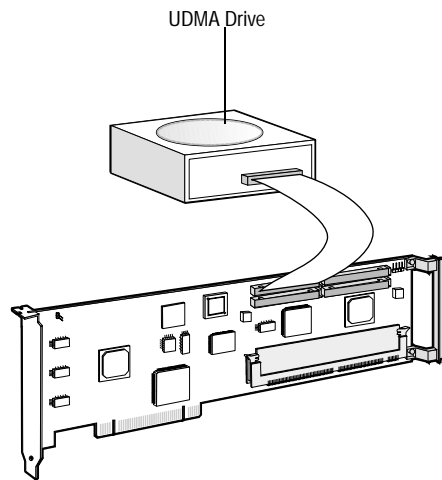
UDMA Drive

Figure 2-8. Connecting an UDMA drive

4 To connect additional UDMA drives, repeat steps 1 through 3.
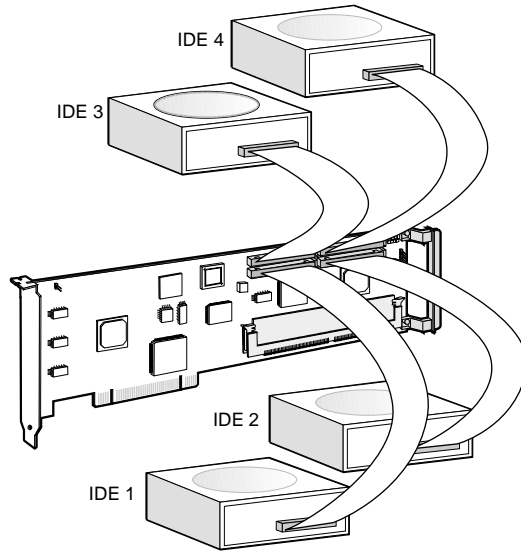
Figure 2-9. Connecting Additional UDMA drives

Configuring the AAA-UDMA

After connecting all devices, reinstall the computer cover and connect all power cables. Turn on the computer. During BIOS initialization, the AAA-UDMA BIOS banner should appear on the screen, and each device connected to the card should be listed. If the BIOS banner does not appear, see Appendix B, *Troubleshooting*.

Before installing the drivers and software for the AAA-UDMA RAID card, you may want to configure card options (e.g., ID and Parity Checking) for the card and the UDMA drives connected to it by running the onboard BIOS*Select* utility. To do this press **F6** when the following prompt appears during BIOS initialization:

> Press <F6> for BIOSSelect Utility!

In most cases, it is not necessary to run the BIOS*Select* utility. Should you need to configure card options, see Appendix A, *Using BIOSSelect and Disk Utilities* for additional information.

3

Creating an Array With the ARRAYCONFIG UDMA Utility

In this Chapter

This chapter explains how to use the **ARRAYCONFIG UDMA** Utility to create a bootable or non-bootable array on your system. If you want a bootable array on your system, you must use the **ARRAYCONFIG UDMA** utility to create the bootable array.

> **Note: ARRAYCONFIG UDMA** runs from a self-booting diskette. If you are changing the configuration of a system that is already in use on a network, log all users off the system and shut it down in an orderly manner before you start **ARRAYCONFIG UDMA**.

Once the array is created, use Adaptec CI/O Management Software, which is included with the AAA-UDMA, to create additional arrays (CI/O is required for array management in order to provide the proper level of fault tolerance and event notification). Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

> **Caution:** It is strongly recommended that you consistently and regularly backup your data to a backup media so you may recover your data due to failure events not protected by a fault-tolerant array.

Creating an Array

Before creating the array, make sure the disks for the array are connected and installed in your system. You can use **ARRAYCONFIG UDMA** in two ways:

- Select **Express Setup** if you want to create an array quickly and easily. **ARRAYCONFIG UDMA** asks you a few simple questions and uses your answers to create the kind of array that best meets your needs.

- Select **Custom Setup** if you want to perform advanced operations, such as creating an array with specified disks or adding spare disks to an array being created.

Creating an Array with Express Setup

Follow these steps to create an array with Express Setup. (You can probably complete the Express Setup process simply by following the instructions that appear on the screen.)

> **Note:** To select **ARRAYCONFIG UDMA** menu options, type the *hot key*—the letter that appears in a different color. (The hot key letters are underlined in the following instructions). You can also press the ↑ and ↓ keys until the option is highlighted and then press **Enter**.

1 Insert the **ARRAYCONFIG UDMA** diskette into drive *A* and reboot the system. Wait for **ARRAYCONFIG UDMA** to start automatically.

2 Read the text that appears on the initial screens. Press any key to view the next screen, or press **Esc** to return to the previous screen.

3 Select **Express Setup** from the Setup Type Selection menu.

4 When the next screen appears, select the type of array you want to create:

– Select **Optimized for Performance (RAID 0)** if you want the fastest possible data input and output from the new array. This kind of array does not have data protection features, however. When prompted, type the number of disks you want in this array.

– Select **Optimized for Data Protection (RAID 1)** if your main concern is to protect the files on the array from disk failure. This kind of array safeguards files in the array even if one of the array disks fails. (This kind of array has two disks by definition, so you will *not* be prompted to enter the number of disks you want in the array.)

– Select **Performance and Data Protection with Parity (RAID 5)** if you want fast performance and data protection, and you have three or more disks available for the array. This kind of array contains redundant (parity) data distributed across all disks in the array. If any one disk fails, data can be reconstructed from the parity information. If a second disk fails before the array has been reconstructed, all data is lost. The actual usable data capacity of the array is equal to one less than the total number of disks. (One disk worth of capacity is needed to hold the parity information.)

– Select **Performance and Data Protection with Mirroring (RAID 0/1)** if you want fast performance and data protection, and have an even number of disks available for the array. This kind of array stripes and mirrors data on two or more pairs of disks. If one disk in a pair fails, data is available. The actual data capacity of the array equals half the total available disk space.

5 When the next menu appears, select the type of applications that you will run on your system. (Select **Others** if you are not sure what type of applications you will use.) **ARRAYCONFIG UDMA** will use your answer to create the best array configuration for your applications.

6 When the next menu appears, select a boot order for the new array:

– Select **Disk Array will be Boot Drive** if you want your system to boot from the new array. If you selected **Optimized for Data Protection** in Step 4, booting from an array safeguards the information on your boot drive. (To boot from an array, you must also install the operating system software on the array, as described in later chapters.)

– Select **Disk Array will not be a Boot Drive** if you do not want your system to boot from the new array.

7 When you have finished all these menu selections, wait while **ARRAYCONFIG UDMA** creates the array. This may take a long time, especially if the drives are large in capacity.

A message appears when the array has been created. An error message appears if **ARRAYCONFIG UDMA** encounters a problem. If this happens, run **ARRAYCONFIG UDMA** again and select the **Custom Setup** option.

8 When the array is created, exit **ARRAYCONFIG UDMA**, remove the **ARRAYCONFIG UDMA** diskette, and reboot the system. After you reboot you can write data to the array.

Creating an Array with Custom Setup

Follow these instructions to create an array with **Custom Setup**:

1 Insert the **ARRAYCONFIG UDMA** diskette in drive *A* and reboot the system. Wait for **ARRAYCONFIG UDMA** to start automatically.

2 Read the text that appears on the initial screens. Press any key to view the next screen, or press **Esc** to return to the previous screen.

3 Select **Custom Setup** from the Setup Type Selection menu.

4 Select **Disk Array <u>O</u>perations** from the Main menu.

5 Select **Create <u>N</u>ew Array** from the Disk Array Operations menu.

6 Type an array name and press **Enter**. The name can be up to 15 characters long and can include spaces and any other printable characters.

7 Select an array type. Your options are:

– **RAID <u>0</u>**: Data is striped across the disks in a RAID 0 array, allowing for faster I/O performance than a single disk. RAID 0 arrays do not store redundant data; if any disk in the array fails, all data is lost.

– **RAID <u>1</u>**: Data is mirrored on one pair of disks. If one disk fails, data is available. The actual data capacity of the array equals half the available disk space.

– **RAI<u>D</u> 0/1**: Data is striped and mirrored on two or more pairs of disks. If one disk in a pair fails, data is available. The actual data capacity of the array equals half the total available disk space.

– **RAID <u>5</u>:** The array contains redundant (parity) data distributed across all disks in the array. If any one disk fails, data can be reconstructed from the parity information. If a second disk fails before the array has been reconstructed, all data is lost. The actual usable data capacity of the array is equal to one less than the total number of disks. (One disk worth of capacity is needed to hold the parity information.)

See the *Adaptec CI/O Management Software User's Guide* for more information on selecting a RAID level.

8 Select the number of drives you want in the array and press **Enter**. This number should not include *spares* (drives that automatically replace failed array drives). The number of drives available for assignment is listed on the screen.

Note: This step does not apply to RAID 1 arrays, which have only two drives by definition.

9 Select array members. When the next screen appears, select drives for the array by pressing the ↑ and ↓ keys until the drive name is highlighted, and then press **Ins** or **Enter**. The names of selected drives appear in the Adaptec Array # box.

To deselect the drive you most recently added, press **Del**.

Caution: A warning appears if you select a disk that has partitions. *Do not* select a partitioned disk if it contains data you want to keep, because any existing data will be erased when the disk becomes part of an array.

When you have selected the number of drives you specified in Step 8, the next screen appears automatically. If you are creating a RAID 1, RAID 0/1, or RAID 5 array, and if there are any unassigned drives, the screen prompts you to define dedicated spare drives for the array. (We recommend that you use a *spare pool* instead of dedicated spares.)

Caution: A spare must have at least the capacity of the smallest drive in the array.

10 Select spares. If you do not want a spare, type n and continue with Step 12. If you want to select dedicated spares, follow these steps:

   a At the prompt, type y.

   b At the next prompt, type 1 or 2.

   c Select one or two spares, using the same method you used to select disks for the array.

11 Initialize array. When the Initialize Mode menu appears, select **Initialize Array to Zero**. A graph on the screen shows the progress of this operation.

> ⚠️ **Caution:** If the drives contain data, all the data is lost when you initialize the array.

12 Select array block size. When the menu of block sizes appears, select a block size. (This menu does not appear if the array is a mirrored array with only two drives.)

The allowable block sizes are 8, 16, 32, 64 (the default), and 128 KBytes. The default block size gives the best overall performance in most environments.

13 Wait for initialization to complete. When you see the message Initialization of [array name] is complete, press any key to return to the Disk Array Operations menu.

14 Create additional arrays. You may use **ARRAYCONFIG UDMA** to create additional arrays (if disks are available), however we recommend using Adaptec CI/O Management Software to create additional arrays. (CI/O is required for array management in order to provide the proper level of fault tolerance and event notification.) See the *Adaptec CI/O Management Software User's Guide* for more information.

15 When all arrays are created, exit **ARRAYCONFIG UDMA**, remove the **ARRAYCONFIG UDMA** diskette, and reboot the system. After you reboot you can write data to the arrays. At this point, you can make the array bootable as described in the next section.

Making the Array Bootable

You can make the array bootable so that the system boots from the array instead of from a stand-alone (single) disk.

To make the array bootable, the array must be set to Unit 0 in the boot order. Follow these steps if you want the system to boot from the newly created array:

> **Note:** The system will always attempt to boot from a UDMA hard disk connected to an embedded UDMA controller (for example, any IDE hard disk not connected to the AAA-UDMA at drive *C*). You must disable or remove all UDMA hard disks connected to an embedded UDMA controller if you want the system to boot from the AAA-UDMA.

1 Insert the **ARRAYCONFIG UDMA** disk in drive *A* and reboot the system. Wait for **ARRAYCONFIG UDMA** to start automatically.

2 Read the text that appears on the initial screens. Press any key to view the next screen, or press **Esc** to return to the previous screen.

3 Select **Custom Setup** from the Setup Type Selection menu.

4 Select **Display Boot Order** from the Main menu. The Boot Order for Singles and Arrays window appears.

5 If the newly created array is at the top of the list, preceded by the words Unit 0, no changes are necessary; if it has some other unit number, highlight the array name and press **Enter**.

6 Use the arrow keys to move the selected array to the top of the list. Then press **Enter**. If you want to change the boot order of another array, select it, move it with the arrow keys, and press **Enter** again.

7 Press **Esc** to return to the Main menu.

8 Exit **ARRAYCONFIG UDMA**, remove the disk from drive *A*, and reboot the system.

9 Prepare the array as you normally would prepare a boot disk drive for your operating system. See either Chapter 4, *Installing the Software Driver for Windows NT*, Chapter 5, *Installing the Software Driver for Windows 2000*, or Chapter 6, *Installing the Software Driver for Novell NetWare*.

Note: You cannot use this procedure to change the boot order of a UDMA disk that is not part of an array. If you want to do this, create a one-disk RAID 0 array from the disk. (Data is not actually striped on a one-disk array.)

4

Installing the Software Driver for Windows NT

In this Chapter

This chapter explains how to install the Array1000UDMA software driver (*cdaudma.sys*) for Windows NT (Windows NT 4.0 Server). Before installing the driver, make sure you have completed the following:

- Installed the AAA-UDMA RAID card in your system. (See Chapter 2)

- Created the first array using the **ARRAYCONFIG UDMA** utility, if you plan to boot from an array. (See Chapter 3)

Once Windows NT and the driver are installed, install Adaptec CI/O Management Software and use it to add, delete, and manage arrays from the server console (CI/O is required for array management in order to provide the proper level of fault tolerance and event notification). Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Array1000UDMA Driver for Windows NT

To begin driver installation, see either *Installing the Driver When Installing Windows NT* on page 4-2, or *Installing the Driver When Windows NT is Already Installed* on page 4-4.

> ✓ **Note:** We recommend that you install your Windows NT operating system on a fault-tolerant array (RAID 5, 1, or 0/1) to take advantage of the redundancy and performance features of the AAA-UDMA RAID card.

Installing the Driver When Installing Windows NT

To install the *cdaudma.sys* driver when you are installing Windows NT, follow these steps:

> ✓ **Note:** During Windows NT installation, if your system configuration has multiple arrays and/or single drives, Windows NT limits the size of the system partition you can create to 1 GByte. To work around this 1 GByte limitation, see *Windows NT 1 GByte Partition Limitation* on page 4-5.

1 Start your system with the Windows NT Boot disk in the floppy disk drive or the Windows NT Boot CD-ROM in the CD-ROM drive.

> ✓ **Note:** When using a CD-ROM drive to install Windows NT from the bootable CD-ROM, make sure Bootable CD-ROM support is enabled. This is done through the System BIOS Setup utility. It may also be necessary to edit the *config.sys* file to include command lines for your CD-ROM drive. Refer to the documentation for the computer, or for the adapter the CD-ROM is connected to for more information.

2 *Windows NT Boot disk installation*: When prompted, insert disk #2 in your floppy disk drive. After a few moments you will see a blue screen. To setup Windows NT now, press **Enter** and continue with Step 3 below.

Windows NT Boot CD-ROM installation: When the following message appears onscreen, press the **F6** key and skip to Step 4 below.

Setup is inspecting your computer system's hardware…

3 Press **S** to skip autodetection of your SCSI host adapter.

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

5 Press **Enter** to select **Others**; insert the Adaptec Array1000UDMA Family Manager Set driver disk in your floppy disk drive and press **Enter**.

6 The screen displays the adapter drivers supported on the disk. Select the **Adaptec Array1000UDMA Family Adapter** driver and press **Enter**.

7 If you want to add drivers (other than for the AAA-UDMA), press **S** and repeat Step 5 for each additional adapter and insert the appropriate disk provided by the hardware manufacturer.

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

9 When Windows NT installation is complete, install Adaptec CI/O Management Software. Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Driver When Windows NT is Already Installed

To update or install the *cdaudma.sys* driver if Windows NT is already installed, follow these steps:

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 Adaptec Array1000UDMA Family Manager Set driver disk in your floppy disk drive and press **Enter.** Enter the following path to the installation files and then click **OK**.

    a:\

The Adaptec Array1000UDMA Family Adapter driver is high-lighted 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.

10 When driver installation is complete, install Adaptec CI/O Management Software. Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Windows NT Installation and Configuration Notes

Windows NT 1 GByte Partition Limitation
During Windows NT installation, if your system configuration has multiple arrays and/or single drives, Windows NT limits the size of the system partition you can create to 1 GByte. To work around this 1 GByte limitation, try the following:

- During Windows NT installation, create the 1 GByte partition (do not finish setup); reboot the system and then delete the partition. This allows Windows NT Setup to create a system partition larger than 1 GByte, but limited to 4 GBytes or 1024 cylinders of data, whichever is less.

  or

- Using MS-DOS, create a partition using fdisk. During Windows NT installation, delete the partition created with MS-DOS. This allows Windows NT Setup to create a system partition larger than 1 GByte, but limited to 4 GBytes or 1024 cylinders of data, whichever is less.

If Windows NT Setup Hangs
During Windows NT installation, the system may hang while the Windows NT Setup floppy disk is being used to copy the device driver. A workaround is to boot from a DOS boot disk, create a DOS partition on the array using fdisk, and then install Windows NT on the array.

Windows NT Disk Administrator
When creating a new array on a system running under Windows NT, the array is not listed as *usable* in the NT Disk Administrator until it is initialized. This is normal Windows NT functionality.

Boot Order In Windows NT vs. ARRAYCONFIG UDMA

During Windows NT installation, Windows NT does not show the devices in the boot order. Instead, it shows the arrays with the lower ID first. To minimize confusion during Windows NT installation, try one of the following:

- Disconnect all devices other than members of the boot array, so that only one logical device is present in the Windows NT installation. Reconnect all other devices after Windows NT is successfully installed.

- Configure the boot array in the **ARRAYCONFIG UDMA** utility so that the lowest ID is a member of the boot array.

Microsoft BackOffice Small Business Server

Microsoft BackOffice Small Business Server features a non-bootable installation CD and setup boot disks which do not ask for a third-party driver disk. (Manufacturer-supplied hardware support disks.) To have the installation program prompt you for the third-party driver disk, do the following:

1 Copy the *winnt.sif* file from the *I386* directory on the BackOffice Small Business Server CD to Disk 2 of the setup boot disks (overwrite existing file).

2 Boot the system using the setup boot disks. Press **F6** while the message "Setup is inspecting your computer system's hardware..." is displayed.

3 You will be prompted for the driver disk during the installation process.

5

Installing the Software Driver for Windows 2000

In this Chapter

This chapter explains how to install the Array1000UDMA software driver (*cdaudma.sys*) for Windows 2000. Before installing the driver, make sure you have completed the following:

- Installed the AAA-UDMA RAID card in your system. (See Chapter 2)

- Created the first array using the **ARRAYCONFIG UDMA** utility, if you plan to boot from an array. (See Chapter 3)

Once Windows 2000 and the driver are installed, install Adaptec CI/O Management Software and use it to add, delete, and manage arrays from the server console (CI/O is required for array management in order to provide the proper level of fault tolerance and event notification). Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Array1000UDMA Driver for Windows 2000

To begin driver installation, see either *Installing the Driver For a Fresh Installation of Windows 2000* on page 5-4, or *Installing the Driver When Windows 2000 is Already Installed* on page 5-5.

Note: We recommend that you install your Windows 2000 operating system on a fault-tolerant array (RAID 5, 1, or 0/1) to take advantage of the redundancy and performance features of the AAA-UDMA RAID card.

Upgrading Windows NT to Windows 2000

Note: We recommend that you backup your system before you begin upgrading. The following steps assume that the **Adaptec Array1000UDMA RAID Host Adapter** is the boot adapter for the Windows NT setup that you may have.

1 Startup Windows 4.0 completely.

2 Insert the Windows 2000 CD into the CD-ROM drive. The Windows 2000 setup will prompt you with two choices:

Upgrade to Windows 2000 (Recommended)

Install a new copy of Windows

Selecting **Upgrade** will replace the existing operating system, but existing settings and installed programs are not changed. This is the recommended choice.

Selecting **Install a new copy** will require you to specify new settings and will require you to reinstall all your programs.

For both choices, "upgrade" or "new", the installation steps to install the UDMA driver for Windows 2000 are the same.

3 Select the Windows 2000 setup choice:

Upgrade to Windows 2000

4 Follow the setup until the setup displays a warning message about **Adaptec Array1000UDMA RAID Host Adapters**:

> The following items are not compatible with Windows 2000. If you continue, you may not be able to use these items even after setup is complete.

5 Ignore the warning message and continue with the setup. The system will reboot at the end of this phase of setup.

6 After the system reboots and the Windows 2000 setup is resumed, press **F6** when this message is displayed:

> Press F6 if you need to install third-party SCSI drivers

7 Insert the Windows 2000 Driver disk for AAA-UDMA when the setup prompts you to insert the manufacturer supplied disk into drive *A*, and then continue.

8 Adaptec Array1000UDMA Family Manager Set for Windows 2000 driver will be displayed. Select this driver and continue with the rest of the Windows 2000 installation.

9 Your system will reboot once more to finish setting up Windows 2000.

Installing the Driver For a Fresh Installation of Windows 2000

To install the *cdaudma.sys* driver when you are installing Windows 2000, follow these steps:

1 Start your system with the Windows 2000 Boot CD-ROM in the CD-ROM drive.

> **Note:** When using a CD-ROM drive to install Windows 2000 from the bootable CD-ROM, make sure Bootable CD-ROM support is enabled. This is done through the System BIOS Setup utility.

2 Press **F6** when this message is displayed:

    Press F6 if you need to install third-party SCSI drivers

3 Insert the Windows 2000 Driver disk for AAA-UDMA when the setup prompts you to insert the manufacturer supplied disk into drive *A*, and then continue.

4 Adaptec Array1000UDMA Family Manager Set for Windows 2000 driver will be displayed. Select this driver and continue with the rest of the Windows 2000 installation.

5 Your system will reboot once more to finish setting up Windows 2000.

6 When the Windows 2000 installation is complete, install Adaptec CI/O Management Software. Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Driver When Windows 2000 is Already Installed

To update or install the *cdaudma.sys* driver if Windows 2000 is already installed, follow these steps:

1 Start Windows 2000.

2 Click the **Start** button on the Windows 2000 task bar, and then point to **Settings**.

3 Click the **Control Panel**.

4 Double-click the **Add/Remove Hardware** icon.

5 Click on the **Next** button on the Welcome to Add/Remove Hardware screen.

6 Select **Add/Troubleshoot a device**, and then click on the **Next** button.

7 This screen has a list of devices which are already installed. Select **Add a new device**, and click on the **Next** button.

8 Next, select **NO, I want to select the hardware from a list**, and click on the **Next** button.

9 This screen has a list of hardware device types. Select **SCSI and RAID controllers**, and click on the **Next** button.

10 This screen has a list of manufacturers and their hardware device models. Select the **Have Disk** button. You will be prompted to insert the manufacturer supplied disk. Insert the Windows 2000 Driver Disk for AAA-UDMA in your floppy disk drive, and click on the **OK** button.

11 Select the Adaptec Array1000UDMA Family Manager Set for Windows 2000 driver from the list, and click on the **Next** button.

12 Click on the **Next** button again to confirm the installation of the driver. You may be prompted with a warning message that "The software you are about to install does not contain a Microsoft Digital Signature ...". Ignore the warning and click on the **Yes** button to continue the installation.

13   When the driver is copied on the hard drive, click on the
Finish button.

14   You will be prompted to restart the computer. Select **Yes**.

15   After rebooting the system, install the Adaptec CI/O
Management Software. Refer to the *Adaptec CI/O Management
Software User's Guide* for instructions on installing and using
the software.

Windows 2000 Installation and Configuration Notes

Windows 2000 Disk Management
When creating a new array on a system running under Windows
2000, the array is not listed in Windows 2000 Disk Management until
the array is initialized. This is normal Windows 2000 functionality.

Boot Order In Windows 2000 vs. ARRAYCONFIG UDMA
During Windows 2000 installation, Windows 2000 does not show
the devices in the boot order. Instead, it shows the arrays with the
lower ID first. To minimize confusion during Windows 2000 instal-
lation, try one of the following:

- Disconnect all devices other than members of the boot array, so
  that only one logical device is present in the Windows 2000
  installation. Reconnect all other devices after Windows 2000 is
  successfully installed.

- Configure the boot array in the **ARRAYCONFIG UDMA**
  utility so that the lowest ID is a member of the boot array.

6

Installing the Software Driver for Novell NetWare

In this Chapter

This chapter explains how to install the Array1000UDMA software driver (*cdaudmah.ham*) for Novell NetWare (NetWare 4.11, 4.2, and 5.0). Before installing the driver, make sure you have completed the following:

- Installed the AAA-UDMA RAID card in your system. (See Chapter 2)

- Created the first array using the **ARRAYCONFIG UDMA** utility, if you plan to boot from an array. (See Chapter 3)

Once NetWare and the driver are installed, install Adaptec CI/O Management Software from the server console (CI/O is required for array management in order to provide the proper level of fault tolerance and event notification). Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Array1000UDMA Driver for Novell NetWare

To begin driver installation, see either *Installing the Driver When Installing NetWare* on page 6-2, or *Installing the Driver When NetWare is Already Installed* on page 6-6.

> **Note:** We recommend that you install your Novell NetWare operating system on a fault-tolerant array (RAID 1, 0/1, or 5) to take advantage of the redundancy and performance features of the array.

Installing the Driver When Installing NetWare

To install the *cdaudmah.ham* driver when you are installing NetWare, follow the instructions below for the version of NetWare you are installing.

NetWare 4.11

Follow these instructions only if you are installing NetWare 4.11 for the first time:

1   Create a DOS partition and install DOS on your system.

2   Edit the *autoexec.bat* file to include a command line for *mscdex.exe* (the *mscdex.exe* file is included with MS-DOS 6.x and above). The following sample command lines for the *autoexec.bat* file are appropriate for most systems:

       c:\dos\mscdex.exe /M:12

   (This assigns the CD-ROM the next available drive letter, typically *D* if there is only one DOS drive.)

3   Reboot the system to the DOS partition.

4   Insert the NetWare CD in your CD-ROM drive.

5   Go to the CD-ROM drive.

6   Type Install and press **Enter**.

7   Follow the procedures in your NetWare documentation for installing a new server.

8 If prompted to load an SMP Module, select **No**. (The SMP Module can be installed once NetWare is up and running.)

9 When a screen appears that asks you to select a disk driver, press **Enter**.

10 Press **Insert** to install an unlisted driver.

11 Insert the Adaptec Array1000UDMA Family Manager Set driver disk into your floppy disk drive.

12 Press **F3** and specify the path to the *cdaudmah.ham* driver. For NetWare 4.11, the driver is located in *a:\v4_1x*.

13 Select *cdaudmah.ham* and press **Enter**.

14 When prompted to save existing file *c:\nwserver\nbi.nlm*, select **No**.

15 When prompted to save existing file *c:\nwserver\nwpaload.nlm*, select **No**.

16 When prompted to save existing file *c:\nwserver\nwpa.nlm*, select **No**.

17 When prompted, select **Select/Modify driver parameters**.

18 Enter a valid slot number, then press **Enter** to save field data.

19 Press **F10** to save parameter settings.

20 When prompted, select **Save parameters and continue**.

21 Select **No** when prompted to select an additional disk driver.

22 Select **Continue Installation**.

23 When NetWare installation is complete, install Adaptec CI/O Management Software from the server console. Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

> ✔ **Note:** To load the driver automatically at server bootup, make sure the *startup.ncf* file includes the load command line for the *cdaudmah.ham* driver. (If you also have an Adaptec host adapter that uses the Adaptec *aic78xx.dsk* driver, make sure the driver loads after the *cdaudmah.ham* driver.)

> ✔ **Note:** Older versions of the *aic78xx.dsk* driver (before v1.30) are compatible with *cdaudmah.ham* as long as the AAA-UDMA PCI slot is not specified on the command line (e.g., load aic7870.dsk slot=z). If there is an AIC-78xx based card (e.g., AHA™-2940) in the system, z must point to that card's slot number and not to the AAA-UDMA slot number. If loaded without command line parameters, NetWare lists valid slot numbers. The AAA-UDMA will be listed in the parameter list; however, *do not* select it.

NetWare 4.2 and 5.0

Follow these instructions only if you are installing NetWare 4.2 and 5.0 for the first time:

1   Create a DOS partition and install DOS on your hard disk drive.

2   Edit the *autoexec.bat* file to include a command line for *mscdex.exe* (the *mscdex.exe* file is included with MS-DOS 6.x and above). The following sample command lines for the *autoexec.bat* file are appropriate for most systems:

    c:\dos\mscdex.exe /M:12

(This assigns the CD-ROM the next available drive letter, typically *D* if there is only one DOS drive.)

3   Reboot the system to the DOS partition.

4   Insert the NetWare 5.0 CD in your CD-ROM drive.

5   Go to the CD-ROM drive.

6   Type Install and press **Enter**.

7   Follow the procedures in your NetWare documentation for installing a new server.

8   From the Welcome to the NetWare server installation screen, press **F2** for Advanced Settings; change Load server at reboot: from Yes to No and continue with the installation.

9   When NetWare detects device drivers for the server, you are prompted to Add, Change, or Delete drivers as needed:

–   Delete any Multiple Processor Support module that is detected (for example, MPS14).

–   Delete the Storage Adapters drivers for adapters that are not present in your system.

10   Insert the Adaptec Array1000UDMA Family Manager Set driver disk in your floppy disk drive.

11   Select **Storage Adapters** and press **Enter**.

12   To add Storage Adapter driver, press **Insert**.

13   Press **Insert** again to add an unlisted driver.

14   Press **F3** to specify a different path. Enter the following path:

a:\

15   Select **Return to Driver Summary** and press **Enter**. CDAUDMA is listed as your storage adapter.

16   Remove the disk from your floppy disk drive.

17   Select **Continue**.

18   Follow the procedures in your NetWare documentation to complete the installation.

19   When installation is complete, restart the system.

20   At the DOS prompt (*c:*), change to the *c:\nwserver* directory and enter:

server

21 When the server starts, type down in the NetWare console. Change the *autoexec.bat* file and the *config.bat* file to recognize the CD drive. NetWare would have changed these files during installation. The old files are saved as *autoexec.000* and *config.000.* Reboot the system.

22 Change to the *c:\nwserver* directory and enter:

    server

23 At this point, install Adaptec CI/O Management Software from the server console. Refer to the *Adaptec CI/O Management Software User's Guide* for instructions on installing and using the software.

Installing the Driver When NetWare is Already Installed

To update or install the *cdaudmah.ham* driver if NetWare is already installed, follow the instructions below for the version of NetWare you have installed.

NetWare 4.11

1 Copy the *cdaudmah.ham* file from the Adaptec Array1000UDMA Family Manager Set driver disk into the server's startup directory (e.g., *c:\nwserver*) on your hard disk.

Note: For NetWare 4.1, the *cdaudmah.ham* file is in *a:\v4_1x*.

2 If necessary, modify the load command line in the *startup.ncf* so that the proper path to the driver is specified. The correct syntax to load the *cdaudmah.ham* driver is

    load [*pathname*]cdaudma

NetWare 4.2 and 5.0

1 Copy the *cdaudmah.ham* file from the Adaptec Array1000UDMA Family Manager Set driver disk into the server's startup directory (e.g., *c:\nwserver*) on your hard disk.

> **Note:** For NetWare 4.2 and 5.0, the *cdaudmah.ham* file is in
> *a:*

2 If necessary, modify the load command line in the *startup.ncf*
so that the proper path to the driver is specified. The correct
syntax to load the *cdaudmah.ham* driver is:

    load [*pathname*]cdaudma

Netware Installation and Configuration Notes

Larger Than 4 GByte Arrays
When installing NetWare on an array 4 GBytes or larger, the Install
program erroneously reports that the DOS partition is too small. It,
however, does allow you to continue installation. Ignore this error
message.

Unloading cdaudmah.ham
When running Adaptec CI/O Management Software, *do not* unload
cdaudmah.ham while *iomgr.nlm* is still loaded. Unstable behavior
may result.

A

Using BIOS*Select* and Disk Utilities

In this Appendix

The AAA-UDMA has the onboard BIOS*Select* configuration utility, which allows you to change AAA-UDMA options without opening the computer chassis or handling the card. This appendix describes the default settings, explains when you should change them, and gives instructions for doing so.

BIOS*Select* also includes disk utilities to list the IDs of devices connected to the AAA-UDMA and to format disk drives. Instructions for using these utilities are included.

BIOS*Select* Default Settings

The BIOS*Select* default settings for the AAA-UDMA, listed in the table below, are appropriate for most systems. If you want to view and/or change the current settings, or if you would like to format a disk, see *Starting the BIOSSelect Utility* on page A-3. Detailed descriptions of each setting begin on page A-5.

BIOS*Select* Option	Available Settings	Default Settings
Bus Interface Definitions		
Host Adapter ID	0-15	7
Parity Checking	Enabled/Disabled	Enabled
Device Configuration		
Enable Disconnection	Yes/No	Yes (Enabled)
Initiate Wide Negotiation	Yes/No	Yes (Enabled)
Send Start Unit Command	Yes/No	Yes (Enabled)
Include In BIOS Scan	Yes/No	Yes (Enabled)
Additional Options		
Array1000 BIOS	Enabled/Disabled	Enabled

Starting the BIOS*Select* Utility

To start BIOS*Select*, press the **F6** key when the following prompt appears when you turn on or reboot your system:

Press <F6> for BIOSSelect Utility!

The menu that appears displays the options Configure/View Host Adapter Settings and Disk Utilities, as shown in Figure A-1.
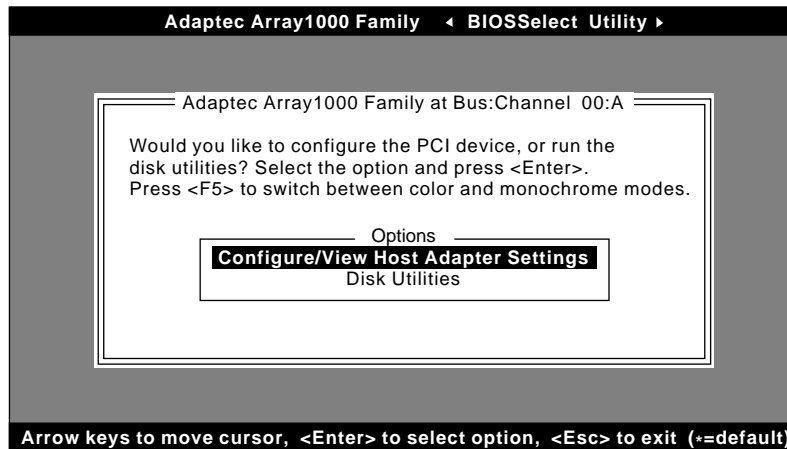
```
   Adaptec Array1000 Family    ◄  BIOSSelect  Utility  ►


        ═══ Adaptec Array1000 Family at Bus:Channel  00:A ═══

        Would you like to configure the PCI device, or run the
        disk utilities? Select the option and press <Enter>.
        Press <F5> to switch between color and monochrome modes.


                        ══════ Options ══════
               Configure/View Host Adapter Settings
                          Disk Utilities




   Arrow keys to move cursor,  <Enter> to select option,  <Esc> to exit  (∗=default)
```

Figure A-1. BIOS*Select* Menu

Using BIOS*Select* Menus

To select a BIOS*Select* menu option, move the cursor to the option with the ↑ and ↓ keys, then press **Enter**. In some cases, selecting an option displays another menu. You can return to the previous menu at any time by pressing **Esc**.

To restore the original BIOS*Select* default values, press **F6** from the Configure/View Host Adapter Settings screen. To toggle the display between color and monochrome modes, press **F5** from the main BIOS*Select* screen (this feature does not work on some monitors).

Exiting BIOS*Select*

To exit BIOS*Select*, press **Esc** until a message prompts you to exit (if you changed any host adapter settings, you are prompted to save the changes before you exit). Select **Yes** to exit, then press any key to reboot the system. Any changes you made in BIOS*Select* take effect after the system boots.

Using the Disk Utilities

To access the disk utilities, select the **Disk Utilities** option from the menu that appears after starting BIOS*Select.* Once the option is selected, BIOS*Select* immediately scans the bus (to determine the devices installed) and displays a list of all IDs and the devices assigned to each ID.

When you select a specific ID and device, a small menu appears that displays the following option:

■ **Format Disk**—This utility allows you to perform a low-level format on a hard disk. Each hard disk must be low-level formatted before you can use your operating system's partitioning and file preparation utilities, such as MS-DOS Fdisk and Format.

Note: Low-level formatting takes a long time for large capacity disk drives.

The Adaptec Format Disk utility is compatible with the vast majority of disk drives.

Caution: A low-level format destroys all data on the drive. Be sure to back up your data before performing this operation. You *cannot* abort a low-level format once it is started.

BIOS*Select* Settings

Bus Interface Definitions

The following settings are the BIOS*Select* settings most likely to require any modification:

- **Host Adapter ID**— Sets the ID for the AAA-UDMA. The AAA-UDMA is set to ID 7, which gives it the highest priority on the bus. We recommend you do not change this setting.

- **Parity Checking**—When set to **Enabled**, verifies the accuracy of data transfer on the bus. Leave this setting Enabled unless any device connected to the AAA-UDMA does not support parity.

Device Configuration

To configure settings for a specific device, you must know the ID assigned to that device (see *Using the Disk Utilities* on page A-4.)

- **Enable Disconnection**—When set to **Yes**, allows the device to disconnect from the bus (sometimes called Disconnect/Reconnect). Leave the setting at Yes if two or more devices are connected to the AAA-UDMA. If only one device is connected, changing the setting to No results in slightly better performance.

- **Initiate Wide Negotiation**—When set to **Yes**, the AAA-UDMA attempts 16-bit data transfer (wide negotiation). When set to **No**, the AAA-UDMA uses 8-bit data transfer unless the device requests wide negotiation.

Note: Set Initiate Wide Negotiation to **No** if you have an 8-bit device that hangs or exhibits other performance problems.

- **Send Start Unit Command**—When set to **Yes**, sends the Start Unit Command to the device at bootup.

- **Include in BIOS Scan**—When set to **Yes**, the AAA-UDMA BIOS includes the device as part of its BIOS scan at bootup. Leave this setting at Yes for all hard disks that are part of an array.

A-5

Additional Options

■ **Array1000 BIOS**—When set to **Enabled**, the AAA-UDMA
  BIOS is installed and all Int13 (except bootable CD-ROM)
  devices are supported at boot time. When set to **Disabled**, the
  AAA-UDMA BIOS is not installed. The default is **Enabled**.

B

Troubleshooting

In this Appendix

Troubleshooting Checklist

Check the following if you have problems installing or using the AAA-UDMA and UDMA drives:

- Does the AAA-UDMA BIOS sign-on message appear during bootup? If not, check the following items:

  – Is the AAA-UDMA properly seated in a PCI expansion slot? Refer to your computer documentation for the slot location.

  – Does your computer CMOS setup require you to enable PCI bus parameters (see your computer documentation)? If so, run the CMOS Setup program and assign the parameters—usually IRQ, Enable PCI Slot, and Enable Master.

- Are all UDMA cables and power cables connected?

- If you are having trouble booting from an UDMA drive or array, verify that the drive or array has been selected as the boot-first (boot) device and that the boot partition is active.

Windows NT Troubleshooting

Error Messages While Setting Up Windows NT

"Setup is unable to locate the hard drive partition prepared by the MS-DOS portion of setup"
or
"xxxx MB disk y at Id z on bus 0 on cdaudma.sys does not contain a partition suitable for starting Window NT"
If these messages appear during Windows NT setup, do the following:

1 Reboot the system using the **ARRAYCONFIG UDMA** disk.

2 Run the **ARRAYCONFIG UDMA** utility to ensure that the boot array includes the drive with the lowest SCSI target ID.

"Boot: Couldn't find NTLDR"
If this message appears when attempting to boot from the Windows NT installation CD, boot from the Windows NT installation floppy disks instead, and proceed to load Windows NT from the CD-ROM.

"No Accessible Boot Device"
When attempting to boot from the Windows NT installation CD, this message indicates that the NT CD-ROM does not contain Array1000UDMA drivers. To avoid this failure, try the following:

1 Reboot the Windows NT installation CD.

2 When the prompt "Setup is inspecting your computer system's hardware" appears, press the **F6** key repeatedly.

3 Windows NT will later prompt you for the Array1000UDMA driver disk and the installation should continue as normal.

"Partition Size Too Large"
When installing Windows NT, this message appears if attempting to create a system partition larger than 4 GBytes. Windows NT has a maximum system partition size of 4096 MBytes. Create a partition that is smaller than 4 GBytes and continue the Windows NT installation. When Windows NT is completely installed, use the Windows NT Disk Administrator to partition the remaining available space of the array.

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