



# PCI Disk Array Controller Drivers

## Installation Guide and User Manual







# **PCI Disk Array Controller Drivers Installation Guide and User Manual**

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## About This Manual

This installation guide covers the steps involved to install and use the software drivers for Mylex PCI Disk Array Controllers.

For information on defining and setting RAID (Redundant Array of Independent Disks) levels as well as configuration of the array, consult the appropriate *Global Array Manager Client* manual or the *RAID EzAssist Configuration Utility User Reference Guide* or *RAID EzAssist Configuration Utility Quick Configuration Guide*.

## Conventions

Throughout the manual, the following conventions are used to describe user interaction with the product:

|                  |  |
|------------------|--|
| <b>bold</b>      | The user must enter the bold text exactly as shown   |
| ↵                | Press the Enter key  |
| <b>Enter</b>     | Press the key labeled “Enter” (or “Delete”, etc.)  |
| <b>File, Run</b> | Select the Run option from the pull-down menu activated when the File menu pad is selected |



### Note

Supplementary information that can have an effect on system performance



### Caution

Notification that a proscribed action has the *potential* to adversely affect equipment operation, system performance, or data integrity



### WARNING

Notification that a proscribed action will *definitely* result in equipment damage, data loss, or personal injury



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**NetWare**

**2**

**Windows NT**

**3**

**Windows 2000**

**4**

**SCO OpenServer**

**5**

**UnixWare**

**6**

**Solaris**

**7**

**Linux**

**8**

---



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# Contents

## Chapter 1

### Introduction

|   |     |
|---|-----|
| Overview .....                              | 1-1 |
| NetWare, Windows NT, and Windows 2000 ..... | 1-1 |
| SCO OpenServer, UnixWare, and Solaris ..... | 1-2 |
| Linux .....                                 | 1-2 |
| Requirements .....                          | 1-2 |

## Chapter 2

### NetWare

|  |     |
|--|-----|
| Overview .....   | 2-1 |
| Mylex Disk Array Controller Driver Files for NetWare ..... | 2-1 |
| Tape, Disk, and CD-ROM Support .....                       | 2-1 |
| Installing the Mylex Disk Array Controller as the Primary  |     |
| NetWare 4.2 Controller .....                               | 2-2 |
| Installing NetWare 4.2 Drivers .....                       | 2-2 |
| Installing Peripherals Under NetWare 4.2 .....             | 2-3 |
| Installing the Mylex Disk Array Controller into an         |     |
| Existing NetWare 4.2 System .....                          | 2-4 |
| Installing the Mylex Disk Array Controller as the Primary  |     |
| NetWare 5.0 Controller .....                               | 2-6 |
| Installing NetWare 5.0 Drivers .....                       | 2-6 |
| NetWare 5.0 Bootable CD-ROM .....                          | 2-7 |
| Installing Peripherals Under NetWare 5.0 .....             | 2-8 |
| Installing the Mylex Disk Array Controller into an         |     |
| Existing NetWare 5.0 System .....                          | 2-9 |

## Chapter 3

### Windows NT

|   |     |
|---|-----|
| Overview .....  | 3-1 |
| Mylex Disk Array Controller Driver Files for Windows NT .....     | 3-1 |
| Installing the Mylex Disk Array Controller as the Primary Windows |     |
| NT 4.0 Controller .....   | 3-3 |
| Installing the Mylex Disk Array Controller into an Existing       |     |
| Windows NT 4.0 System .....                                       | 3-5 |

---

## Chapter 4

### Windows 2000

|  |      |
|--|------|
| Overview .....   | 4-1  |
| Mylex Disk Array Controller Driver Files for Windows 2000 .....  | 4-1  |
| Installing the Mylex Disk Array Controller as the Primary<br>Windows 2000 Controller .....   | 4-3  |
| Installation Procedure 1: Using eXtremeRAID 2000,<br>eXtremeRAID 3000, AcceleRAID 160/170LP,<br>AcceleRAID 170, or AcceleRAID 352 .....    | 4-4  |
| Primary (new) Installation .....   | 4-4  |
| Secondary (new) Installation .....   | 4-4  |
| Secondary (existing) Installation .....  | 4-4  |
| A secondary existing installation is when: .....   | 4-4  |
| Performing a Primary Installation .....  | 4-5  |
| Performing a Secondary Installation .....  | 4-7  |
| Microsoft Windows 2000 Installation Procedure .....  | 4-7  |
| Installation Procedure 2: Using DAC960P Series,<br>eXtremeRAID 1100 (DAC1164P), AcceleRAID 150,<br>AcceleRAID 200, or AcceleRAID 250 ..... | 4-13 |
| Primary (new) Installation .....   | 4-13 |
| Secondary (new) Installation .....   | 4-13 |
| Secondary (existing) Installation .....  | 4-13 |
| Upgrading the Windows 2000 Driver to the Current<br>Mylex Driver .....   | 4-14 |
| Upgrading Windows NT 4.0 to Windows 2000 .....   | 4-14 |
| Windows NT 4.0 with a Mylex controller .....   | 4-14 |
| Windows NT 4.0 with GAM Server/GAM Client<br>Installed .....   | 4-15 |
| Windows NT 4.0 with a Mylex Controller with<br>MACDISK installed .....   | 4-15 |
| Updating the Mylex Controller Driver .....   | 4-16 |

## Chapter 5

### SCO OpenServer

|   |     |
|---|-----|
| Overview .....  | 5-1 |
| Creating a Driver Diskette for SCO UNIX .....                                 | 5-2 |
| Installing the Mylex Disk Array Controller as the Primary<br>Controller ..... | 5-3 |
| Installing Additional Mylex Disk Array Controllers .....                      | 5-5 |
| Adding System Drives .....  | 5-6 |
| Installing Mylex Disk Array Controller Tape Drivers .....                     | 5-7 |
| Mylex Disk Array Controller CD-ROM Drivers .....                              | 5-8 |

---

|   |      |
|---|------|
| Installing the Mylex Disk Array Controller as a<br>Secondary Controller ..... | 5-9  |
| Secondary Controller Installation Procedure .....                             | 5-9  |
| Updating a Previously Installed Driver .....                                  | 5-11 |
| Tuning SCO for Maximum Performance .....                                      | 5-11 |

## **Chapter 6**

### **UnixWare**

|  |      |
|--|------|
| Overview .....   | 6-1  |
| Special Notes .....  | 6-2  |
| Creating a Driver Diskette for UnixWare .....  | 6-3  |
| Installing the Mylex Disk Array Controller as the Primary<br>UnixWare Controller with UnixWare 7.x/2.1.3 .....   | 6-3  |
| Installing the Mylex Disk Array Controller as the Secondary<br>UnixWare Controller with UnixWare 7.x/2.1.3 ..... | 6-5  |
| Installing the Mylex Disk Array Controller as the Primary<br>UnixWare Controller with UnixWare 2.1.2 .....       | 6-6  |
| Installing the Mylex Disk Array Controller as the Secondary<br>UnixWare Controller with UnixWare 2.1.2 .....     | 6-8  |
| Adding System Drives .....   | 6-10 |
| To Primary Controller .....  | 6-10 |
| To Secondary Controller(s) .....   | 6-10 |
| Updating a Previously Installed Driver .....   | 6-10 |
| Changing the Controller Configuration .....  | 6-11 |

## **Chapter 7**

### **Solaris**

|  |     |
|--|-----|
| Overview .....   | 7-1 |
| Creating a Driver Diskette for Solaris .....   | 7-2 |
| How to use the Mylex Supplemental Driver Diskette .....  | 7-2 |
| Installing Solaris Using the Solaris Device Configuration<br>Assistant Diskette for a Primary Installation ..... | 7-2 |
| Installing Solaris Using the Mylex MDAC Supplemental<br>Driver Diskette for a Secondary Installation .....       | 7-4 |

## **Chapter 8**

### **Linux**

|  |     |
|--|-----|
| Overview .....                                     | 8-1 |
| Installing the Disk Array Controller Drivers ..... | 8-1 |

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**Appendix A**

**Creating PCI Driver Installation Diskettes**

Introduction .....A-1  
Creating Operating System Driver Diskettes .....A-2

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# Chapter 1

## Introduction

### Overview

This manual describes how to install and use the Mylex Disk Array Controller operating system drivers for Mylex PCI Disk Array Controllers.

Mylex Disk Array Controller drivers for all supported operating systems (except Linux) are delivered on a CD-ROM. Drivers for NetWare, Windows NT, and Windows 2000 are also delivered on diskettes.

#### Note

This manual assumes that the network administrator will be performing any of the installation procedures described herein.

### NetWare, Windows NT, and Windows 2000

Use one of the following methods to obtain drivers for NetWare 4.2 / 5.x, Windows NT 4.0, or Windows 2000:

- Install drivers directly from the diskettes provided.
- Retrieve the appropriate driver image file from the CD-ROM and create a driver diskette from the DOS image file.
- Insert the CD-ROM into a system running Windows 95 / 98, Windows NT, or Windows 2000, then click on “Create Software Diskettes” from the RAID Management Software Installation menu. See Appendix A for details.

## SCO OpenServer, UnixWare, and Solaris

Use the following method to obtain drivers for SCO OpenServer 5.0.5, UnixWare 7.x, 2.1.2 / 2.1.3, or Solaris 7 for x86:

- Insert the CD-ROM into a system running Windows 95 / 98, Windows NT, or Windows 2000, then click on “Create Software Diskettes” from the RAID Management Software Installation menu. See Appendix A for details.

## Linux

In order to use any of the supported distributions of Linux, you will need to download the driver files from the appropriate web site (see Chapter 8 “Linux”).

## Requirements

It is assumed that the hardware installation, the system configuration, and the disk array controller configuration are properly completed. If they are not, please refer to the appropriate Mylex disk array controller hardware installation guide and to the *RAID EzAssist Configuration Utility User Reference Guide* or *RAID EzAssist Configuration Utility Quick Configuration Guide*. Complete the required procedures described in those manuals before proceeding with installation of drivers discussed herein.

The person who will be performing the installation should have Supervisor or Administrator rights for the system onto which these software drivers will be installed.

It may also be necessary to prepare a DOS bootable floppy disk to be able to perform certain procedures described in this manual. Before starting, be sure to read through all applicable instructions to determine the specific requirements for each operating system to be supported.

## Overview

This chapter describes installation procedures and the functionality of the Mylex Disk Array Controller drivers for Novell NetWare. The software for the drivers is provided on the appropriate Software Kit distribution diskette and CD-ROM.

### Mylex Disk Array Controller Driver Files for NetWare

All hardware installation, system configuration, and disk array controller configuration must be properly completed before proceeding with the NetWare driver installation. These basic installation procedures follow the Novell Installation manual, with only the few minor differences that are described in this section.

The subdirectory *netware* on the DOS-formatted NT4/NW Drivers Software Kit diskette and on the CD-ROM contains the following:

- MDAC.HAM:**           The driver to support Mylex Disk Array Controllers with NetWare.
- MDAC.DDI:**           NetWare installation file for MDAC.HAM.

### Tape, Disk, and CD-ROM Support

Tape drive support is available to the Mylex Disk Array Controller under NetWare by means of the NWTAPE.CDM. Most NetWare applications that communicate through ASPI on the server will work with the controller when the Nwaspi.CDM module is loaded. Disk drive support is provided through the SCSIHD.CDM module.

Similar to tape drive support, the controller also supports CD-ROM for use under NetWare. The SCSICD.CDM provides support to the CD-ROM application running on the server. A CD-ROM driver will also have to be loaded. These are included with the Novell NetWare releases.

## Installing the Mylex Disk Array Controller as the Primary NetWare 4.2 Controller

If the Mylex Disk Array Controller will be the primary (bootable) controller, you must install the controller driver at the time of NetWare 4.2 installation.

### Installing NetWare 4.2 Drivers

NetWare version 4.2 is available on CD-ROM. Drivers provided in the \DOS subdirectory of the NT4/NW Drivers Software Kit diskette (packaged with the Mylex Disk Array Controller) are required to install NetWare 4.2 from a CD-ROM drive connected to a Mylex Disk Array Controller.

The procedure below assumes that the CD-ROM drivers are available.

1. Boot the system from a newly created DOS boot drive, and then create (or edit) the CONFIG.SYS and AUTOEXEC.BAT files to include the drivers required for accessing the CD-ROM as a logical drive under DOS. The following example assigns the CD-ROM as drive D: under MS-DOS 6.00 or above. CONFIG.SYS contains the statements:

```
device = [pathname] \aspidac.sys  
device = [pathname] \btcdrom.sys /D:[devicename]
```

AUTOEXEC.BAT contains the statement:

```
[pathname] \mscdex /v /m:10 /D:[devicename]
```

The device name is that of the specific CD-ROM drive (e.g., MSCD001).

2. Boot the system with the new CONFIG.SYS and AUTOEXEC.BAT, and make sure the NetWare CD-ROM files are accessible under DOS.
3. Follow the standard NetWare 4.2 upgrade or installation procedure, as described in the NetWare 4.2 documentation.
4. Insert the DOS-formatted NT4/NW Drivers Software Kit diskette into the floppy disk drive when the installation program prompts you to

insert the vendor-supplied disk. The installation program will scan the diskette for all available drivers. Select the NetWare 4.2 driver from the list:

**MDAC . HAM**



## Installing Peripherals Under NetWare 4.2

Non-disk peripheral devices, such as tape or CD-ROM drives, can be installed on any channel of the controller. Each disk or non-disk device will require a unique SCSI ID, different from any other device connected to the same channel.

Each device requires a driver module connecting it to the DAC adapter. These modules are best loaded in the STARTUP.NCF file before the MDAC.HAM driver.

The common devices and required modules are:

|   |             |
|---|-------------|
| SCSI disk drives<br>(including Mylex RAID<br>system drives) | SCSIHD.CDM  |
| SCSI CD-ROM   | SCSICD.CDM  |
| SCSI tape drive   | NWTAPE.CDM  |
| Magneto optical drive                                       | SCSIMO.CDM  |
| DLT tape drive  | DLTTAPE.CDM |
| IDE CD-ROM  | IDECD.CDM   |
| IDE disk drive  | IDEHD.CDM   |
| ASPI compliant<br>applications such<br>as GAM               | NWASPI.CDM  |

1. The appropriate drivers should be loaded before trying to access the non-disk devices. For example, to use NetWare's *Sbackup* utility, do the following:

```
: load mdac.ham
: load nwtape.cdm
: load tsa410
: load tapedai
: scan for new devices
: load sbackup
```

Except for the *mdac.ham* driver, .CDM or .NLM files are supplied by Novell. Refer to the Novell documentation for instructions on running *Sbackup*.

2. Load the following drivers to use a CD-ROM under NetWare 4.2 (the NLMs *aspicd* and *cdrom* are supplied by Novell):

```
: load mdac.ham
: load scsicc.cdm
: load cdrom.nlm
: cd mount [volume name]
```

After the CD-ROM is mounted, the volume on the CD-ROM can be mapped from any workstation and accessed.

## Installing the Mylex Disk Array Controller into an Existing NetWare 4.2 System

If NetWare 4.2 is already installed and you wish to add a Mylex Disk Array Controller later, the controller will be a secondary (non-bootable) controller. After installing the controller hardware and configuring a disk array, follow the procedure below to add the necessary controller drivers.

1. With NetWare Server 4.2 loaded and running, load the NetWare program *INSTALL.NLM* by typing the following at the console prompt:  

```
: load install
```

and press <Enter>.
2. Choose "Driver Options" in the Installation Options menu.

3. Choose “Configure disk and storage device drivers” in the Driver Options menu.
4. Choose “Select an additional driver” in the Additional Driver Actions menu.

NetWare scans for controllers that do not have drivers already loaded.

5. At the “Select a driver” box, press **<Ins>** to choose to install an unlisted driver.
6. Insert the DOS-formatted NT4/NW Drivers Software Kit diskette into the diskette drive.
7. Press **<F3>** to specify the path of the NetWare driver you’re about to install.
8. Change the path line to read:

**A: \netware**

and press **<Enter>**. NetWare scans for drivers on the floppy diskette in the specified path.

9. In the “Select a driver to install” box, select the appropriate driver for your controller:  
MDAC.HAM | <Controller model number>
10. Select **Yes** at the confirmation box to install the driver.
11. Press **<Enter>** to select the default server boot path.
12. Select **Yes** to save a backup of the old or existing driver.
13. Press **<Enter>** to continue when you see the message that the old driver will be saved.  
NetWare copies the file.
14. What you just backed up was the old or existing .DSK or .HAM file. Repeat Steps 12 and 13 for the .DDI file.
15. Select **No** to decline selection of an additional driver to install unless you are installing more than one Mylex controller at this time.
16. Exit INSTALL.NLM by pressing **<Esc>** three times, then selecting **Yes** at the “Exit Install?” box.

This concludes installation of the driver files needed to run your Mylex Disk Array Controller under NetWare 4.2.

## Installing the Mylex Disk Array Controller as the Primary NetWare 5.0 Controller

If the Mylex Disk Array Controller will be the primary (bootable) controller, you must install the controller driver at the time of NetWare 5.0 installation.

If you choose to use the NetWare 5.0 bootable CD-ROM, please read the instructions in the section "NetWare 5.0 Bootable CD-ROM" on page 2-7, before continuing.

### Installing NetWare 5.0 Drivers

NetWare version 5.0 is available on CD-ROM. Drivers provided in the \DOS subdirectory of the NT4/NW Drivers Software Kit diskette (packaged with the Mylex Disk Array Controller) are required to install NetWare 5.0 from a CD-ROM drive connected to a Mylex Disk Array Controller.

The procedure below assumes that the CD-ROM drivers are available.

1. Boot the system from a newly created DOS boot drive, and then create (or edit) the CONFIG.SYS and AUTOEXEC.BAT files to include the drivers required for accessing the CD-ROM as a logical drive under DOS. The following example assigns the CD-ROM as drive D: under MS-DOS 6.00 or above. CONFIG.SYS contains the statements:

```
device = [pathname]\aspdac.sys  
device = [pathname]\btcdrom.sys /D:[devicename]
```

AUTOEXEC.BAT contains the statement:

```
[pathname]\mscdex /v /m:10 /D:[devicename]
```

The device name is that of the specific CD-ROM drive (e.g., MSCD001).

2. Boot the system with the new CONFIG.SYS and AUTOEXEC.BAT, and make sure the NetWare CD-ROM files are accessible under DOS.
3. Create a directory C:\NWUPDATE
  - Copy MDAC.HAM and MDAC.DDI from the \NETWARE path.  
Copy A:\Netware\MDAC.\* C:\NWUPDATE

4. Follow the standard NetWare 5.0 upgrade or installation procedure, as described in the NetWare 5.0 documentation.
  - MDAC.HAM will be installed from the C:\NWUPDATE directory.
5. Return to the driver summary by pressing the arrow keys and select the option to continue.
6. NetWare 5.0 will continue the installation.
7. Watch for another status screen that displays the storage devices (i.e., SCSIHD.CDM and SCSICD.CDM) and the network drivers:
  - Select Modify
  - Select Storage Devices
  - Press the <Insert> key
  - Select NWASPI.CDM (this driver is required to load GAM)
  - Press <Enter>
  - Return to the driver summary by using the arrow keys.



## NetWare 5.0 Bootable CD-ROM

In order to boot from the NetWare 5.0 CD-ROM, you must enable CD-ROM Boot Support in the BIOS setup program of the device that controls the CD-ROM drive.

If your bootable CD-ROM drive is connected to a Mylex controller, follow the steps below to enable CD-ROM boot support.

1. Insert the NetWare 5.0 CD-ROM.
2. Power on or reboot the system.

After the Mylex Controller BIOS banner comes up, you will see the following statement:

Press <ALT-M> for BIOS options

3. Press <ALT-M> immediately.  
The BIOS options menu will be displayed.

 **Note**

In order to enable the CD-ROM boot, the controller's BIOS must be enabled.

4. If the controller's BIOS is disabled, press **<Enter>** to enable the BIOS.
5. Use the arrow key to select "CD-ROM boot disabled" and press **<Enter>** to enable the CD-ROM boot.
6. Press **<ESC>**, then press any key. This will restart the system with the new settings.

The system will now boot from the NetWare 5.0 CD-ROM.

7. Return to the section "Installing NetWare 5.0 Drivers" and follow steps 4 through 7 to complete your driver installation.

## Installing Peripherals Under NetWare 5.0

Non-disk peripheral devices, such as tape or CD-ROM drives, can be installed on any channel of the controller. Each disk or non-disk device will require a unique SCSI ID, different from any other device connected to the channel.

Each device requires a driver module connecting it to the DAC adapter. These modules are best loaded in the STARTUP.NCF file before the MDAC.HAM driver.

The common devices and required modules are:

|   |             |
|---|-------------|
| SCSI disk drives<br>(including Mylex<br>RAID system drives) | SCSIHD.CDM  |
| SCSI CD-ROM   | SCSICD.CDM  |
| SCSI tape drive   | NWTAPE.CDM  |
| Magneto optical drive                                       | SCSIMO.CDM  |
| DLT tape drive  | DLTTAPE.CDM |
| IDE CD-ROM  | IDECD.CDM   |
| IDE disk drive  | IDEHD.CDM   |
| ASPI compliant<br>applications such<br>as GAM               | NWASPI.CDM  |

1. The appropriate drivers should be loaded before trying to access the non-disk devices.
2. Load the following drivers to use a CD-ROM under NetWare 5.0 (*cdrom* is supplied by Novell):

 **Note**

*mdac.ham* and *scsicc.cdm* are usually loaded in the *startup.ncf* file.

```
: load mdac.ham
: load scsicc.cdm
: load cdrom
```

After the CD-ROM is mounted, the volume on the CD-ROM can be mapped from any workstation and accessed.

## Installing the Mylex Disk Array Controller into an Existing NetWare 5.0 System

If NetWare 5.0 is already installed and you wish to add a Mylex Disk Array Controller later, the controller will be a secondary (non-bootable) controller. After installing the controller hardware and configuring a disk array, follow the procedure below to add the necessary controller drivers.

1. Copy *NWASPI.CDM* (for GAM support).
  - Copy *C:\NWSERVER\DRIVERS\NWASPI.CDM* to the directory named, *C:\NWSERVER*.
  - In the *C:\NWSERVER\STARTUP.NCF* file add *LOAD NWASPI.CDM* with the other *LOAD XXXX.CDM*
2. With NetWare Server 5.0 loaded and running, load the NetWare program by typing the following at the console prompt:

```
: load nwconfig
```

and press **<Enter>**.
3. Choose “Driver Options” in the Installation Options menu.
4. Choose “Configure disk and storage device drivers” in the Driver Options menu.
5. Choose “Select an additional driver” in the Additional Driver Actions menu.

NetWare scans for controllers that do not have drivers already loaded.

6. At the “Select a driver” box, press **<Ins>** to choose to install an unlisted driver.
7. Insert the NT4/NW Drivers Software Kit diskette into the diskette drive.
8. Press **<F3>** to specify the path of the NetWare driver you’re about to install.
9. Change the path line to read:

**A: \netware**

and press **<Enter>**. NetWare scans for drivers on the floppy diskette in the specified path.

10. In the “Select a driver to install” box, select the appropriate driver for your controller:

MDAC.HAM | Mylex Disk Array Controller <model number>

11. Select **Yes** at the confirmation box to install the driver.
12. Press **<Enter>** to select the default server boot path.
13. Select **No** to save a backup of the old or existing driver.
14. Select **No** to decline selection of an additional driver to install unless you are installing more than one controller at this time.
15. Exit INSTALL.NLM by pressing **<Esc>** three times, then selecting **Yes** at the “Exit Install?” box.

This concludes installation of the driver files needed to run your Mylex Disk Array Controller under NetWare 5.0.

---

# Chapter 3

## Windows NT



### Overview

This chapter describes installation procedures and the functionality of the Mylex Disk Array Controller drivers for Microsoft Windows NT 4.0 with SP4 or SP5. The software is provided on the appropriate Software Kit distribution diskette and CD-ROM.

This chapter assumes that the network administrator for this site will be performing these installation procedures.

### Mylex Disk Array Controller Driver Files for Windows NT

All hardware installation, system configuration, and disk array controller configuration must be properly completed before proceeding with the Windows NT driver installation. These basic installation procedures follow the Windows NT Installation manual, with the differences that are described in this chapter.

The root directory A:\ on the NT4/NW Drivers Software Kit diskette contains the following:

- TXTSETUP.OEM** Setup text file (required in root directory) needed for Windows NT installation.
- DISK1** Diskette identifier file.

The subdirectory *WT4* on the NT4/NW Drivers Software Kit diskette contains the following:

- DAC960NT.SYS** Windows NT controller driver file for DAC960P Series, AcceleRAID 150/200/250, and DAC1164P
- DAC960NT.INF** Setup file for DAC960NT.SYS

|                    |   |
|--------------------|---|
| <b>DAC2NT4.SYS</b> | Windows NT Controller driver file for AcceleRAID 160/170/170LP/352, and eXtremeRAID 2000/3000 |
| <b>DAC2NT4.INF</b> | Setup file for DAC2NT4.SYS  |
| <b>README.NT</b>   | (Optional) Last minute information on Windows NT Installation                                 |

The subdirectory *DISK* on the NT4/NW Drivers Software Kit diskette contains the following:

|                    |   |
|--------------------|---|
| <b>MACDISK.SYS</b> | Mylex Accelerated Driver for Windows NT |
| <b>MACDISK.INF</b> | Setup file for MACDISK.SYS              |

## Installing the Mylex Disk Array Controller as the Primary Windows NT 4.0 Controller

If the Mylex Disk Array Controller will be the primary (bootable) controller, you must install the controller driver at the time of Windows NT 4.0 installation.

Before proceeding you should have already carried out the following steps:

- Installed the Mylex Disk Array Controller hardware, connected the disk drives to the controller and to each other, set drive SCSI IDs, and terminated the SCSI bus following the instructions in your Mylex Disk Array Controller hardware installation guide.
- Used the Mylex RAID EzAssist Configuration Utility to create a drive configuration and initialized the drives for use following the instructions in your Mylex RAID EzAssist Configuration Utility manual.

To install the controller driver during Windows NT 4.0 installation:

1. Boot the system with the Windows NT 4.0 setup diskette #1.
2. Insert setup diskette #2 when prompted and press **<Enter>**.
3. Press **<Enter>** again when prompted.
4. Select **Custom Setup** in the Windows NT Setup screen.
5. Next, choose **S** to skip the automatic detection scan.
6. Choose **S** to specify an additional device.
7. Choose **Other** in the list of supported adapters displayed and press **<Enter>**.
8. When prompted for the Manufacturer's supplied hardware support disk, insert your NT4/NW Drivers Software Kit diskette into the floppy disk drive and press **<Enter>**.

9. Select the appropriate controller from the list of controllers displayed on this screen and press **<Enter>**.
10. If you have drivers to install for other controllers (for example, an on-board SCSI or IDE controller to run other devices such as a CD-ROM drive, etc.), repeat Step 6 and Step 7. Then when prompted, insert the manufacturer's supplied hardware support disk, press **<Enter>**, and select the appropriate driver from the list.

If you have no other drivers to install, or when you have finished installing other drivers, simply press **<Enter>** to continue installation.

11. Insert Windows NT 4.0 setup diskette #3 when prompted.
12. Follow the on-screen instructions to continue Windows NT 4.0 installation, inserting the Windows NT CD-ROM into the CD-ROM drive when prompted. Press **<Enter>** and continue with the next few Windows NT 4.0 installation screens.
13. When prompted again for the "MDAC Software Kit" diskette, insert the NT4/NW Drivers Software Kit diskette into the floppy disk drive and press **<Enter>**.

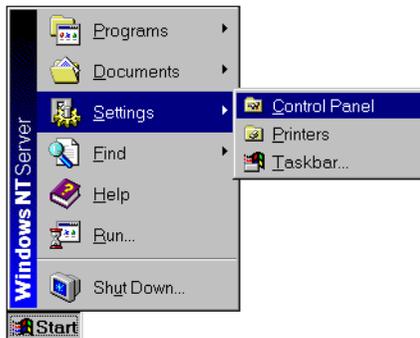
If you installed other drivers from other diskettes, you will be asked to reinsert those diskettes as well.

This concludes Mylex Disk Array Controller driver installation for Windows NT 4.0. Follow the on-screen instructions to complete your installation of the Windows NT 4.0 operating system.

## Installing the Mylex Disk Array Controller into an Existing Windows NT 4.0 System

If Windows NT 4.0 is already installed and you wish to add a Mylex Disk Array Controller later, the controller will be a secondary (non-bootable) controller. After installing the controller hardware and configuring a disk array, follow the procedure below to add the necessary controller drivers.

1. Make sure Windows NT 4.0 is up and running.
2. Click Start, and select Settings->Control Panel within the Start menu (Figure 3-1).



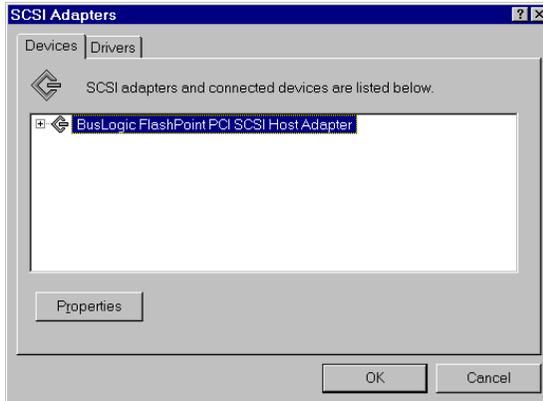
**Figure 3-1. Open the Windows NT 4.0 Control Panel**

3. From the Control Panel window, double-click the SCSI Adapters icon (Figure 3-2).



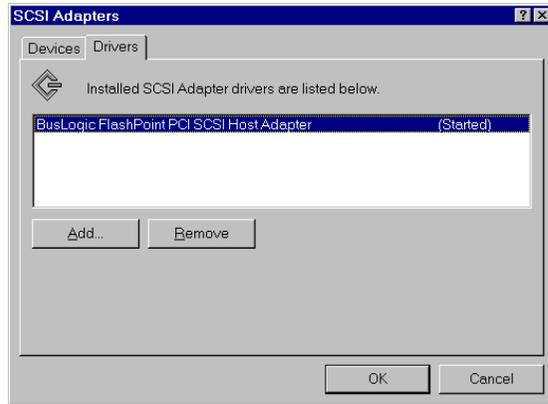
**Figure 3-2. Control Panel - SCSI Adapters**

4. In the SCSI Adapters box, click the Drivers tab to bring the Drivers page to the foreground (Figure 3-3).



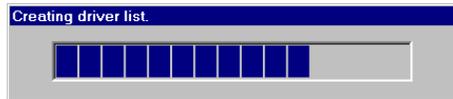
**Figure 3-3. SCSI Adapters**

5. With the Drivers page in the foreground, click Add. (Figure 3-4).

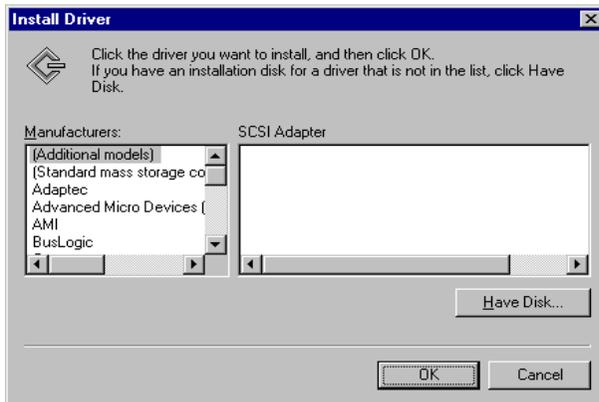


**Figure 3-4. Add a New SCSI Adapter**

6. The Creating driver list progress bar is displayed briefly (Figure 3-5), and then the Install Driver box is displayed (Figure 3-6).

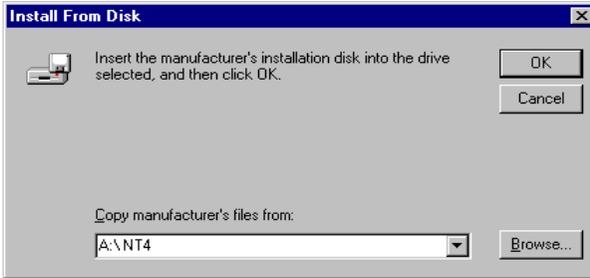


**Figure 3-5. Creating Driver List**



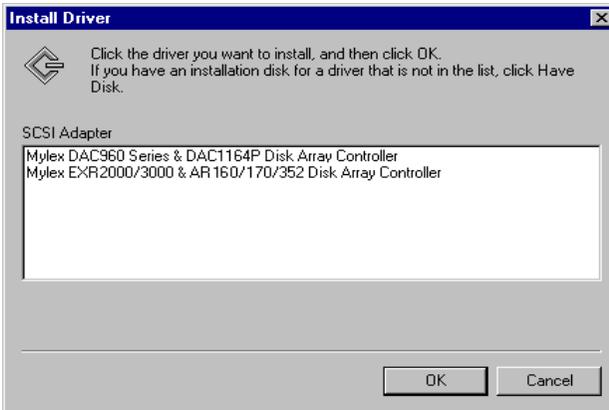
**Figure 3-6. Install Driver**

7. In the Install Driver box, click Have Disk.
8. Insert the NT4/NW Drivers Software Kit diskette into the floppy disk drive.
9. From the Install From Disk box, change the path to A:\NT4 as shown in Figure 3-7 and click OK.



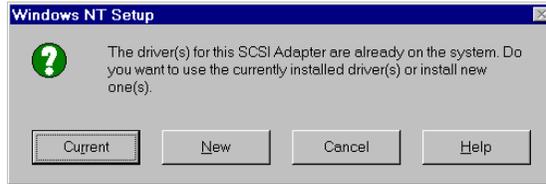
**Figure 3-7. Change Path to A:\NT4**

10. In the Install Driver box, select the appropriate Mylex Disk Array Controller and click OK (Figure 3-8).



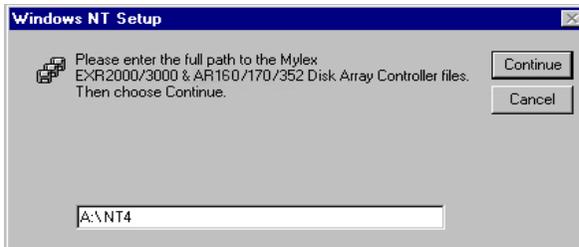
**Figure 3-8. Select Mylex Driver for Windows NT 4.0**

11. If there is an existing Mylex driver in the system you will see the box shown below in Figure 3-9. Click New to install the new driver from the diskette.



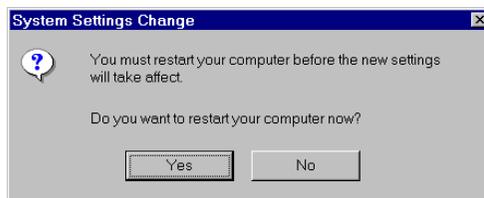
**Figure 3-9. Install the New Driver from Diskette**

12. Again, be sure the path is A:\NT4 as shown in Figure 3-10 and click Continue.



**Figure 3-10. Confirm Diskette Driver Path**

The driver is copied from the diskette. The System Settings Change box is displayed as shown in Figure 3-11.

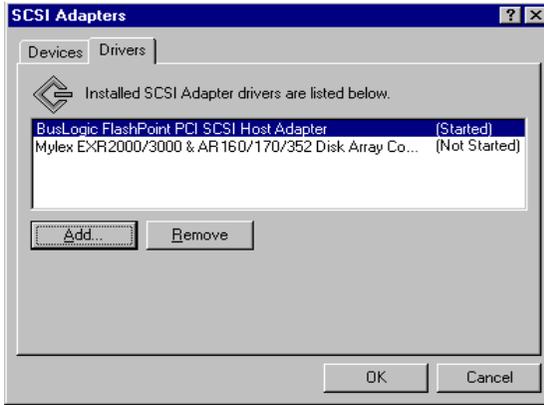


**Figure 3-11. Driver Installation Complete - DO NOT Restart**

13. Click No at this time if you choose to install the Mylex Accelerated Driver before restarting Windows NT 4.0. *Do not install the Accelerated Driver if you will be using Clustering or PCI Hot Plug, or when mixing earlier and current Mylex controller. (Please refer to the README file for details.)* Continue with Step 14.

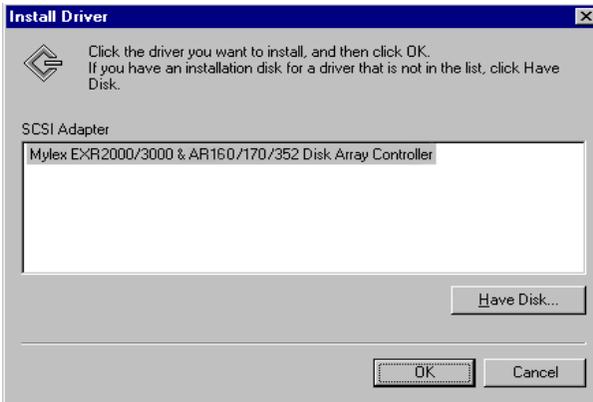
Click Yes to restart without installing the Mylex Accelerated Driver.

14. With the Drivers page in the foreground, click Add. (Figure 3-12).



**Figure 3-12. Add Another SCSI Driver**

15. The Install Driver box is displayed (Figure 3-13).

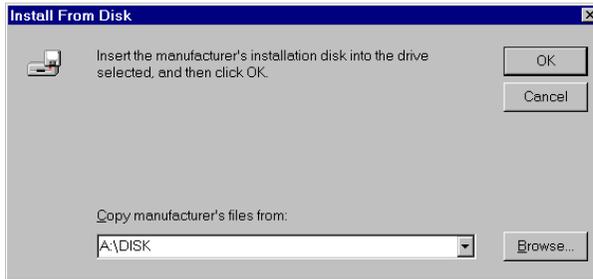


**Figure 3-13. Install Another Driver**

In the Install Driver box, click Have Disk.

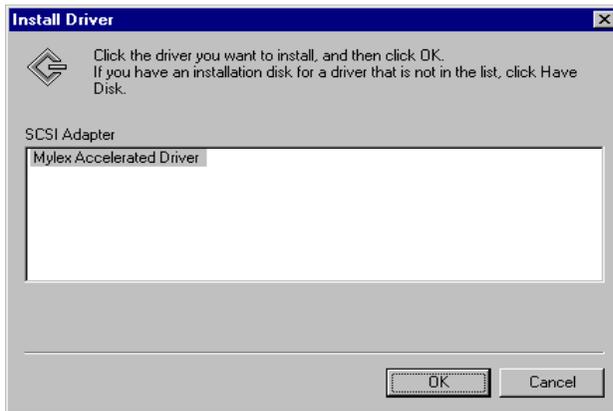
16. Reinsert the DOS-Formatted NT4/NW Drivers Software Kit diskette into the floppy disk drive if requested.

- From the Install From Disk box, change the path to A:\DISK as shown in Figure 3-14 and click OK.



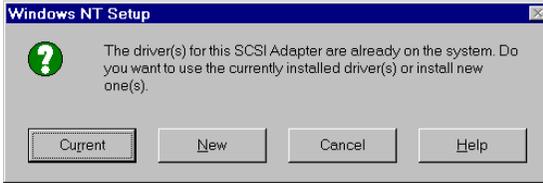
**Figure 3-14. Change Path to A:\DISK**

- From the Install Driver box, be sure the Mylex Accelerated Driver is selected and click OK (Figure 3-15).



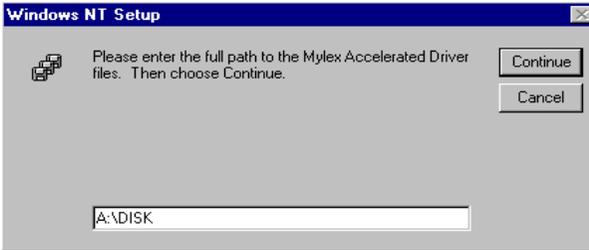
**Figure 3-15. Select Mylex Accelerated Driver**

19. If there is an existing Mylex driver in the system you will see the box shown below in Figure 3-16. Click New to install the new driver from the diskette.



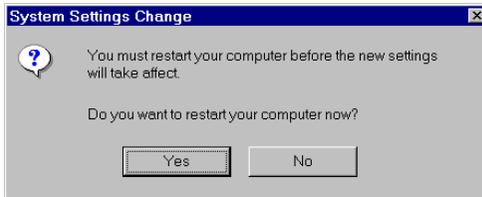
**Figure 3-16. Install the Accelerated Driver from Diskette**

20. Again, be sure the path is A:\DISK as shown in Figure 3-17 and click Continue.



**Figure 3-17. Confirm Diskette Accelerated Driver Path**

The driver is copied from the diskette. The System Settings Change box is displayed as shown in Figure 3-18.



**Figure 3-18. Driver Installation Complete - Restart**

21. Remove the diskette and click Yes to restart Windows NT 4.0 for the new Mylex Disk Array Controller drivers to be available.

---

# Chapter 4

## Windows 2000

### Overview

This chapter describes installation procedures and the functionality of the Mylex Disk Array Controller drivers for Microsoft Windows 2000. The software is provided on the appropriate Software Kit distribution diskette and CD-ROM.

This chapter assumes that the network administrator for this site will be performing these installation procedures.

### Mylex Disk Array Controller Driver Files for Windows 2000

All hardware installation, system configuration, and disk array controller configuration must be properly completed before proceeding with the Windows 2000 driver installation.

The root directory of the Software Kit Windows 2000 driver diskette contains the following:

|                     |   |
|---------------------|---|
| <b>TXTSETUP.OEM</b> | Setup text file (required in root directory) needed for Windows 2000 installation.              |
| <b>AR160.CAT</b>    | Digital signature for the AcceleRAID 160/170LP  |
| <b>AR160.INF</b>    | Setup file required for the AcceleRAID 160/170LP driver   |
| <b>AR170.CAT</b>    | Digital signature for the AcceleRAID 170  |
| <b>AR170.INF</b>    | Setup file required for the AcceleRAID 170 driver   |
| <b>AR352.CAT</b>    | Digital signature for the AcceleRAID 352  |
| <b>AR352.INF</b>    | Setup file required for the AcceleRAID 352 driver   |
| <b>DAC1164P.CAT</b> | Digital signature for the DAC1164P  |
| <b>DAC1164P.INF</b> | Setup file required for the DAC1164P driver   |
| <b>DAC2W2K.SYS</b>  | Windows 2000 controller driver file for AcceleRAID 160/170/170LP/352, and eXtremeRAID 2000/3000 |

|                     |  |
|---------------------|--|
| <b>DAC960NT.SYS</b> | Windows 2000 controller driver file for DAC960P Series, AcceleRAID 150/200/250, and DAC1164P |
| <b>DAC960P.CAT</b>  | Digital signature for the DAC960P Series or AcceleRAID 150/200/250                           |
| <b>DAC960P.INF</b>  | Setup file required for the DAC960P Series or AcceleRAID 150/200/250 driver                  |
| <b>EXR2000.CAT</b>  | Digital signature for the eXtremeRAID 2000   |
| <b>EXR2000.INF</b>  | Setup file required for the eXtremeRAID 2000 driver  |
| <b>EXR3000.CAT</b>  | Digital signature for the eXtremeRAID 3000   |
| <b>EXR3000.INF</b>  | Setup file required for the eXtremeRAID 3000 driver  |



### **WARNING**

**If you are planning to upgrade a SCSI Interrupt Steering Logic (SISL) installation or are planning to install Windows 2000 in a new SISL installation, please contact Mylex Support for this procedure. Do not attempt either procedure until you contact Mylex.**

## Installing the Mylex Disk Array Controller as the Primary Windows 2000 Controller

Before proceeding you should have already carried out the following steps:

- Installed the Mylex Disk Array Controller hardware, connected the disk drives to the controller and to each other, set the drive SCSI IDs, and terminated the SCSI bus following the instructions in your Mylex Disk Array Controller hardware installation guide.
- Used the RAID EzAssist Configuration Utility to create a drive configuration and initialized the drives for use following the instructions in your Mylex Disk Array Controller Configuration Utility manual.

Use the following table to determine the installation procedure to use.

*Table 4-1. Installation Procedure to Use for Each Controller*

| <b>RAID Controller Model</b>   | <b>Installation Procedure No.</b> | <b>Page No.</b> |
|--------------------------------|-----------------------------------|-----------------|
| eXtremeRAID 2000               | Installation Procedure 1          | page 4-4        |
| eXtremeRAID 3000               | Installation Procedure 1          | page 4-4        |
| AcceleRAID 160/170LP           | Installation Procedure 1          | page 4-4        |
| AcceleRAID 170                 | Installation Procedure 1          | page 4-4        |
| AcceleRAID 352                 | Installation Procedure 1          | page 4-4        |
| DAC960P Series                 | Installation Procedure 2          | page 4-13       |
| AcceleRAID 150                 | Installation Procedure 2          | page 4-13       |
| AcceleRAID 200                 | Installation Procedure 2          | page 4-13       |
| AcceleRAID 250                 | Installation Procedure 2          | page 4-13       |
| eXtremeRAID 1100<br>(DAC1164P) | Installation Procedure 2          | page 4-13       |

**Installation Procedure 1:  
Using eXtremeRAID 2000, eXtremeRAID 3000,  
AcceleRAID 160/170LP, AcceleRAID 170, or  
AcceleRAID 352**

If you are about to install the eXtremeRAID 2000, eXtremeRAID 3000, AcceleRAID 160/170LP, AcceleRAID 170, or AcceleRAID 352, you must first determine if you are performing a primary or secondary installation. The differences between these installations are described as follows:

***Primary (new) Installation***

A primary installation is:

- First time installation of Windows 2000 operating system, according to the Microsoft User manual, and
- Mylex PCI RAID controller is the *bootable* device, configured with RAID EzAssist.
- Go to “Performing a Primary Installation” on page 4-5

***Secondary (new) Installation***

A secondary new installation is:

- First time installation of Windows 2000 operating system, according to the Microsoft User manual, and
- Mylex PCI RAID controller is added as a *non-bootable* device.
- You should first install Windows 2000 onto a disk on an embedded SCSI or IDE controller or SCSI host bus adapter. Then go to “Performing a Secondary Installation” on page 4-7

***Secondary (existing) Installation***

A secondary existing installation is when:

- Windows 2000 operating system is already installed, and
- A Mylex PCI RAID controller has been added to your system as a *non-bootable* device.
- Go to “Performing a Secondary Installation” on page 4-7.

## Performing a Primary Installation

To install an eXtremeRAID 2000, eXtremeRAID3000, AcceleRAID 160/170LP, AcceleRAID 170, or AcceleRAID 352 controller driver during Windows 2000 installation:

Insert the Windows 2000 bootable<sup>1</sup> CD-ROM into the CD-ROM drive. Windows 2000 will begin the installation process.

### Note

It is necessary that Mylex's new controller is recognized by the system before Windows 2000 accesses the Windows 2000 bootable CD-ROM.

### Note

Generally, if you have any questions regarding the Windows 2000 installation, please refer to the Windows 2000 User Manual for details.

However, here are some special instructions.

1. As soon as the screen turns blue, **press F6** so that the correct driver will be installed for one of these controllers: eXtremeRAID 2000, eXtremeRAID 3000, AcceleRAID 160/170LP, AcceleRAID 170, or AcceleRAID 352.
2. You will see a screen with two options. Respond to the following option:  
*To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Windows 2000, including those for which you have a device support disk from a mass storage device manufacturer, press S.*
3. Choose **S** to specify an additional device.

- 
1. If the system is unable to boot from the CD-ROM, boot from Disk 1 of the installation disks supplied. The procedure will continue as described in this section, except you will be prompted when you need to insert new diskettes.

4. When prompted for the Manufacturer's supplied hardware support disk, insert your Mylex Windows 2000 Drivers Software Kit diskette into the floppy disk drive and press **<Enter>**.

You will see a screen with the following information:

*You have chosen to configure a SCSI Adapter for use with Windows 2000, using a device support disk provided by an adapter manufacturer.*

*Select the SCSI Adapter you want from the following list, or press ESC to return to the previous screen.*

5. Use the scroll bar (if available) to locate and select one of the following devices:

Mylex AcceleRAID 160 Disk Array Controller<sup>1</sup>  
Mylex AcceleRAID 170 Disk Array Controller  
Mylex AcceleRAID 352 Disk Array Controller  
Mylex eXtremeRAID 2000 Disk Array Controller  
Mylex eXtremeRAID 3000 Disk Array Controller

6. With the Software Kit diskette still in the floppy disk drive, select your controller and press **<Enter>**. The driver will load and the installation program will ask you if you want to install any additional drivers.
7. If you have drivers to install for other controllers (for example, an on-board SCSI controller to run other devices such as a CD-ROM drive, etc.), repeat Step 4 and Step 5. Then when prompted, insert the manufacturer's supplied hardware support disk, press **<Enter>**, and select the appropriate driver from the list.

If you have no other drivers to install, or when you have finished installing other drivers, simply press **<Enter>** to continue installation.

If you installed other drivers from other diskettes, you will be asked to reinsert those diskettes as well.

8. Finally, you will be prompted to remove any diskettes and CD-ROMs, and you will be instructed to press **<Enter>** to reboot the system.

This concludes Mylex Disk Array Controller driver installation for Windows 2000 when using eXtremeRAID 2000, eXtremeRAID 3000, AcceleRAID 160/170LP, AcceleRAID 170, or AcceleRAID 352.

Please continue with the Microsoft Windows 2000 Installation Procedure.

---

1. **Important:** Select this device for the AcceleRAID 170LP also.

## Performing a Secondary Installation

If you have reached this point:

- You already have a system with Windows 2000 installed on it.
- You have added an eXtremeRAID 2000, eXtremeRAID 3000, AcceleRAID 160/170LP, AcceleRAID 170, or AcceleRAID 352 into your system.

### Microsoft Windows 2000 Installation Procedure

After the system reboots, it will detect new hardware. A brief message will be displayed. There will be no action to take at this point.



Figure 4-1. “Found New Hardware” Message

1. When the “Welcome to the Found New Hardware Wizard” dialog box appears, (see Figure 4-2) click the Next button.



Figure 4-2. Welcome to the Found New Hardware Wizard

2. In the next dialog box (see Figure 4-3), select the option to “Search for a suitable driver for my device” and then click Next.



**Figure 4-3. Install Device Drivers**

- The “Locate Driver Files” dialog box will appear (see Figure 4-4). Insert the Mylex Windows 2000 Driver Diskette into Drive A, click on the Floppy Disk Drives check box, and then click Next.



**Figure 4-4. Locate Driver Files**

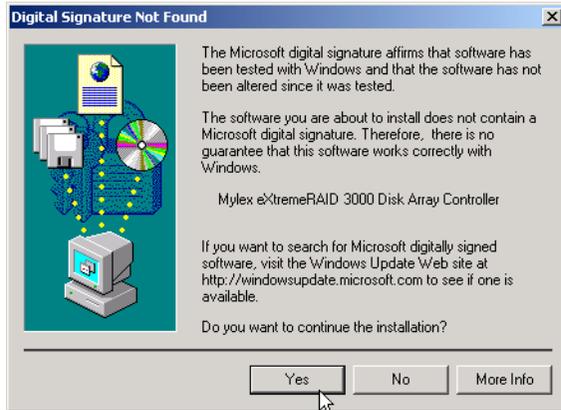
4. The “Driver Files Search Results” dialog box will appear (see Figure 4-5). After verifying that the correct device driver was found, click Next.



**Figure 4-5. Driver Files Search Results**

5. If the current version of the Mylex driver you are about to install is too new to have been tested and approved by Microsoft, the driver will not have a digital signature and the Digital Signature Dialog Box shown in Figure 4-6 will appear. If this dialog box appears, click Yes to continue with the installation.

This dialog box will not appear if the driver contains a digital signature.



**Figure 4-6. Digital Signature Dialog Box**

While the driver files are copied, the dialog box in Figure 4-7 will appear to show the progress of this process. This process will complete by itself.



**Figure 4-7. Copying the Drivers in Progress**

6. Click Finish when the “Completing the Found New Hardware Wizard” screen appears (see Figure 4-8).



**Figure 4-8. Completing the Found New Hardware Wizard**

Verification of the installation of a device supporting GAM installation will briefly appear.

 **Note**

GAM is not installed at this point.



**Figure 4-9. A Device that Supports GAM has been Installed**

## **Installation Procedure 2: Using DAC960P Series, eXtremeRAID 1100 (DAC1164P), AcceleRAID 150, AcceleRAID 200, or AcceleRAID 250**

If the Mylex Disk Array Controller will be the primary (bootable) controller, you must install the controller driver after Windows 2000 installation is completed.

### **Caution**

Do not use the [F6] update key when installing Windows 2000 with any of the above controllers.

After you have performed one of the installation options below, follow the driver update procedures detailed in “Updating the Mylex Controller Driver” on page 4-16 in order to install the latest driver and make it active.

### **Primary (new) Installation**

A primary installation is:

- First time installation of Windows 2000 operating system, according to the Microsoft User manual, and
- Mylex PCI RAID controller is the *bootable* device, configured with RAID EzAssist.

### **Secondary (new) Installation**

A secondary installation is:

- First time installation of Windows 2000 operating system, according to the Microsoft User manual, and
- Mylex PCI RAID controller as a *non-bootable* device.

### **Secondary (existing) Installation**

A secondary existing installation is when:

- Windows 2000 operating system is already installed, and
- An additional Mylex PCI RAID controller has been connected to your system as a *non-bootable* device.

In this case, during the installation, you will see a message that the system has located new hardware. This will function as a Plug and Play process; there is no action required from you. Wait for the installation to finish.

## Upgrading the Windows 2000 Driver to the Current Mylex Driver

### **WARNING**

**In order to avoid a system failure, you must uninstall GAM components before you begin the Windows 2000 upgrade.**

This condition occurs when:

- Windows 2000 operating system is already installed, and
- All hardware has already been installed and configured, and
- You only need to upgrade the embedded Windows 2000 driver.

Go to “Updating the Mylex Controller Driver” on page 4-16.

## Upgrading Windows NT 4.0 to Windows 2000

### **WARNING**

**In order to avoid a system failure, you must uninstall GAM components before you begin the Windows 2000 upgrade.**

This upgrade requires that your Windows NT 4.0 contains Service Pack 4 or higher. Please refer to your Microsoft documentation for additional information

Please study the options below and select the one that meets your upgrade requirements.

### ***Windows NT 4.0 with a Mylex controller***

If you are running a system with only Windows NT 4.0 and a Mylex controller:

- Complete the Windows 2000 upgrade, then
- Go to “Updating the Mylex Controller Driver” on page 4-16 to upgrade the Mylex Windows 2000 driver.

**Windows NT 4.0 with GAM Server/GAM Client Installed**

If you are running a system with Windows NT 4.0 with a Mylex controller and GAM Server and/or GAM Client is already installed, follow the directions below:

1. If GAM Server is installed, open Services, select Mylex Global Array Manager Server, and click the Stop button.
2. Open the Add/Remove Programs utility and uninstall GAM Server and/or GAM Client.
3. Install Microsoft Windows 2000 upgrade.
4. After the Windows 2000 upgrade, go to “Updating the Mylex Controller Driver” on page 4-16 for driver update instructions.

**Windows NT 4.0 with a Mylex Controller with MACDISK installed**

If you are running a system with Windows NT 4.0 and MACDISK already installed, follow the directions below:

1. Open the “SCSI Adapters” Control Panel and remove the Mylex Accelerated Driver.
2. Upgrade your system to Windows 2000.

When Windows 2000 upgrade is finished, go to “Updating the Mylex Controller Driver” on page 4-16.

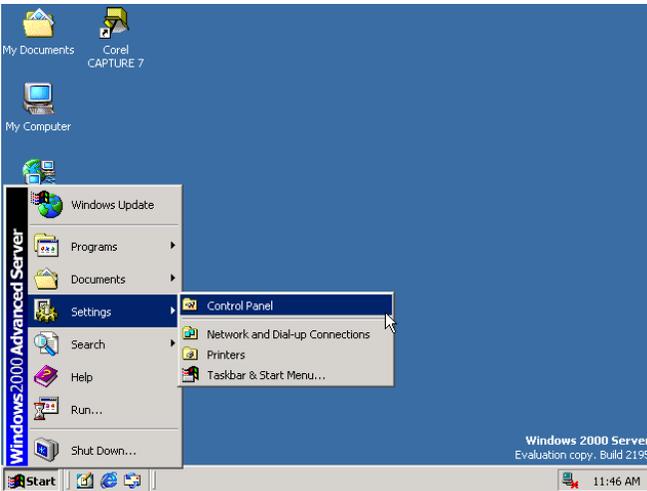
## Updating the Mylex Controller Driver

If you have gotten to this point, Windows 2000 should already be installed.

The Windows 2000 CD-ROM comes with an embedded driver for the following controllers: the DAC960P Series, eXtremeRAID 1100 (DAC1164P), AcceleRAID 150, AcceleRAID 200, and AcceleRAID 250. The Windows 2000 installation routine installed and used this driver during the Windows 2000 installation. This driver now needs to be updated.

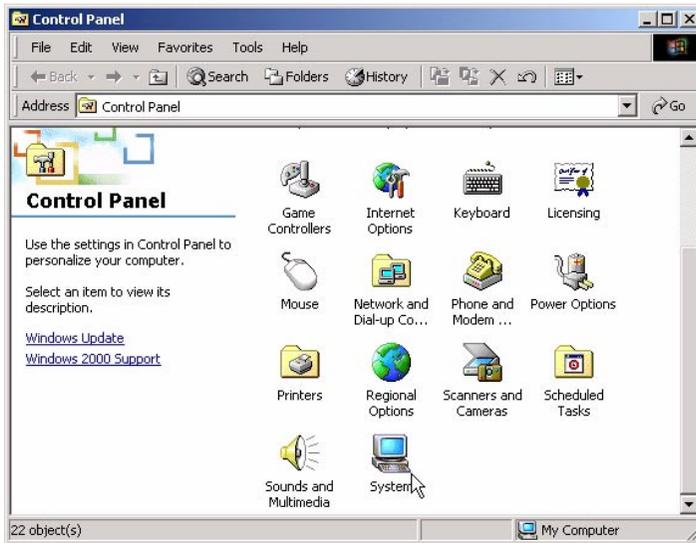
The procedure that follows explains in detail how to update to the new Mylex Windows 2000 Software Kit driver for the controller (mentioned above) that you are installing.

1. Select Start >Settings->Control Panel (Figure 4-10).



**Figure 4-10. Start Menu Screen**

- From the Control Panel screen, double-click the System icon (Figure 4-11).



**Figure 4-11. Control Panel**

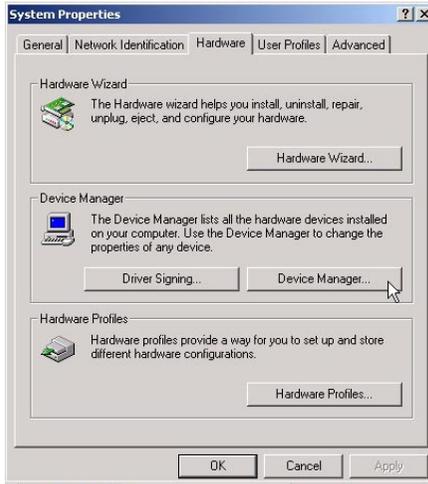
This will give you access to a series of screens that will instruct you how to set up your system to add the correct Mylex driver for the new controller board you installed.

3. From the System Properties screen, click the Hardware tab to bring the hardware selections page to the foreground (Figure 4-12).



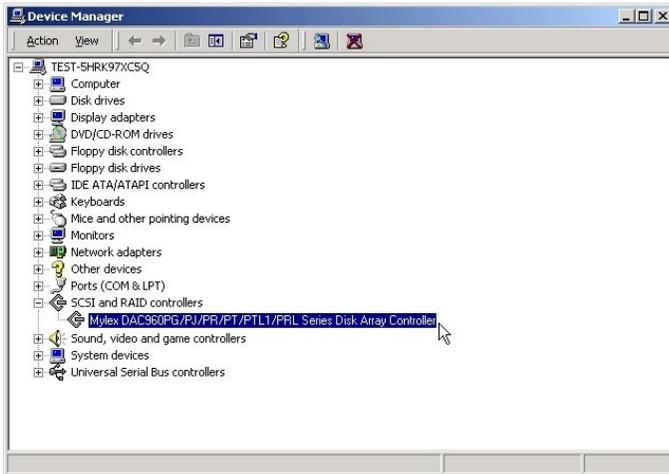
**Figure 4-12. Hardware Tab**

4. With the hardware selections page in the foreground, click the Device Manager button (Figure 4-13) to bring up the Device Manager screen.



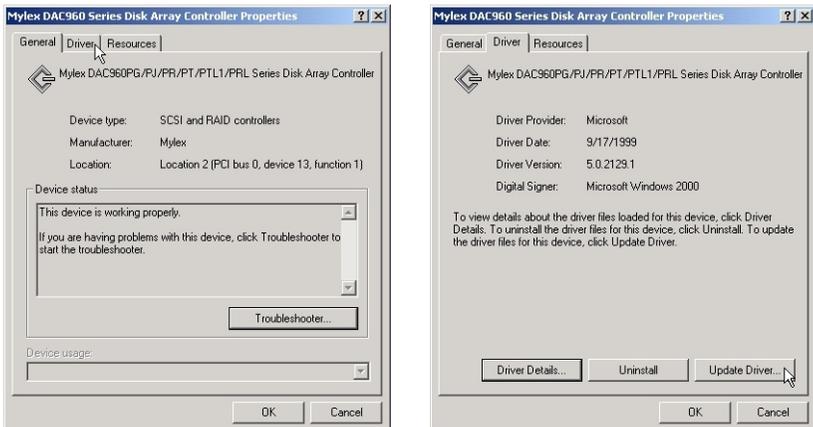
**Figure 4-13. Device Manager Button**

- From the Device Manager Screen, SCSI and RAID controllers, double-click the name of the appropriate controller device (Figure 4-14).



**Figure 4-14. Controller Device**

- At the top of the next screen, select the Driver tab; then click the Update Driver button near the bottom right corner (Figure 4-15).



**Figure 4-15. Driver Tab and Update Driver Button**

7. You will now have access to the upgrade device capabilities. You will see the Welcome to the Upgrade Device Driver Wizard screen. Click Next (Figure 4-16).



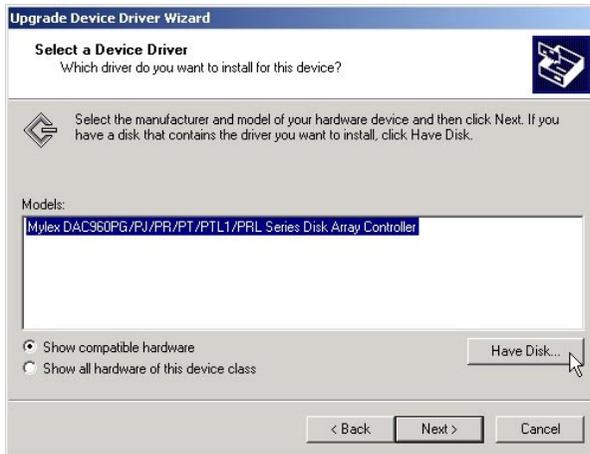
**Figure 4-16. Welcome to Upgrade Device Driver Wizard**

8. When you see the Install Hardware Device Drivers screen, click on the second line item: Display a list of the known drivers for this device so that I can choose a specific driver (Figure 4-17). Click Next.



**Figure 4-17. Install Hardware Device Drivers**

- From the Select a Device Driver, click on Have Disk (Figure 4-18).



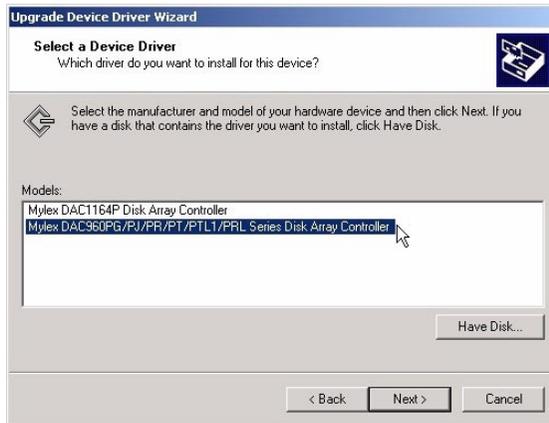
**Figure 4-18. Select a Device Driver**

- When you have reached the Install From Disk screen, insert the Software Kit Windows 2000 driver diskette in drive A, check that you are at the A:\ prompt, and click OK. If you are not using drive A, click on Browse to select the driver's location (Figure 4-19).



**Figure 4-19. Install From Disk**

11. From Select a Device Driver, select the appropriate controller to correspond to the controller you installed (Figure 4-20).



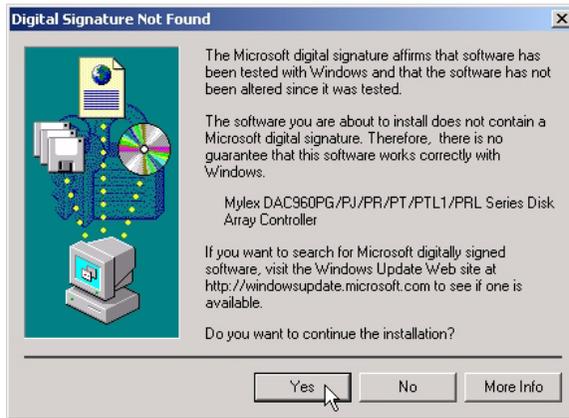
**Figure 4-20. Select Driver**

12. From the Start Device Driver Installation screen, notice that the name of your controller appears in the screen. Click Next (Figure 4-21).



**Figure 4-21. Start Device Install**

13. If a Digital Signature is Not Found for the driver, the following dialog appears (Figure 4-22). Click Yes to continue.



**Figure 4-22. Digital Signature Not Found**

The next screen informs you that the files are being copied to a local directory. Wait for the display to finish (Figure 4-23).



**Figure 4-23. Copying Files**

14. When the screen, Completing the Upgrade Device Driver Wizard appears, Click Finish (Figure 4-24).



**Figure 4-24. Completing the Upgrade Device Driver Wizard**

**Note**

If the system instructs you to reboot, click Yes in order for the newly installed hardware to work properly.

---

# Chapter 5

## SCO OpenServer

### Overview

This chapter describes installation procedures and the functionality of the Mylex Disk Array Controller drivers for SCO OpenServer Release 5.0.x. The software is provided on the appropriate Software Kit distribution CD-ROM with a file to create a diskette.

This chapter assumes that the user has properly completed the hardware installation, PCI configuration, and the Drive Array Configuration. If you have not done so, please refer to the corresponding chapters and complete the configuration before proceeding with the driver installation.

Installing SCO UNIX with the mdac driver follows the standard SCO UNIX installation with the addition that during the installation, you need to insert the appropriate SCO UNIX driver diskette when prompted.

## **Creating a Driver Diskette for SCO UNIX**

Before installing the Mylex Disk Array Controller Drivers for SCO UNIX, a SCO UNIX driver diskette must be created according to the instructions in Appendix A, “Creating PCI Driver Installation Diskettes.”

This diskette will be used in both the primary and secondary installation processes and when updating a previously installed driver wherever instructed to insert the “Software Kit SCO OpenServer Driver diskette.”

## Installing the Mylex Disk Array Controller as the Primary Controller

This section provides guidelines for the system administrator to follow during the installation of SCO UNIX to prepare it for using the Mylex Disk Array Controller (DAC) as the primary controller. The following guidelines will focus mainly on the important steps for installing the SCO UNIX drivers. For detailed information about the operating system installation, consult the SCO UNIX documentation.

If a tape drive connected to the controller is being used for installation, make sure that the tape drive is set to SCSI ID 2, that the configuration utility has been run with the tape drive installed, and that the configuration has been saved. The same is also true when using a CD-ROM, except the CD-ROM needs to be set to SCSI ID 5.

Prepare the system to receive the SCO OpenServer 5.0.x driver by performing the following procedure:

1. Insert the *OpenServer Boot Disk* into the primary floppy and boot the system. The following prompt will be displayed:

```
Boot
:
```

2. Type *ahslink* at the colon(:) and press **<Enter>**.

```
: ahslink ↵
```

When running SCO 5.0.x on a system with an additional SCSI controller, to install the controller at the boot prompt, enter:

```
Boot: defbootstr ahslink=mdac sdsks=mdac(0,0,0,1)
```

If installing onto a system that is SISL capable and using a SISL capable DAC, it is recommended to disable the SCSI chip driver on the system by entering the following at the boot prompt:

```
Boot: defbootstr ahslink=mdac sdsks=mdac(0,0,0,1)
       disable=[scsi chip driver name]
```

3. The system will display the following message

```
What packages do you need linked in the system,
or q to quit?:
```

Type *mdac* and press **<Enter>**.

: **mdac** ↵

4. The system then displays standard UNIX messages, such as loading Kernel *fd(64) UNIX.text, UNIX.data, UNIX.bss, etc.*

The system will then provide the following message prompt:

```
Please insert the fd(60)mdac volume and press
<Return>
or 'q' to quit
```

5. Insert the Software Kit SCO OpenServer Driver diskette into the primary floppy drive and press **<Enter>**:

 **Note**

When installing SCO OpenServer 5.0.x, you will be asked if you would like to try a replacement of the existing *mdac* package. Type **'r'** for try replacement.

6. Follow the standard SCO UNIX installation procedure until you see the following message:

```
Please insert (mdac) package BTLDDisk into the
floppy drive so that it can be extracted onto the
hard disk for incorporation into the link-kit.
```

This is where the driver package diskette is inserted a second time.

7. Insert the Software Kit SCO OpenServer Driver diskette and press **<Enter>**. The system will respond with the following message:

```
Extracting BTLDDistribution for mdac...
```

8. From this point forward, follow the standard procedure for SCO UNIX installation. Make sure the entire Extended Utilities of SCO UNIX are installed. Near the end of the installation, the following description is displayed:

```
The following packages are on this disk:
```

```
NAME      DESCRIPTION
```

```
mdac     <Mylex Controller Description>
```

```
Please enter the names of the packages you wish to
install, or 'q' to quit
```

```
[default: mdac]:
```

9. Press the **<Enter>** key to continue. The system displays several messages. After the system has completed its installation, you will see the following message:

```
NOTICE: Flushing [controller] 0 cache... done
** Safe to Power Off **
- or -
** Press any Key to Reboot **
```

where *[controller]* is the base model of the controller.

10. This concludes the installation of SCO UNIX and the Mylex Disk Array Controller driver. Reboot the operating system from the System Drive that was just installed.

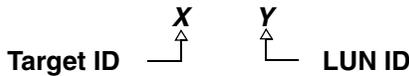
## Installing Additional Mylex Disk Array Controllers

The driver for both the primary controller and any secondary controllers are installed simultaneously as a part of the previous SCO UNIX installation. No further procedures are required in order to use additional Mylex Disk Array Controllers as secondary controllers in the installation.

## Adding System Drives

The recommended method for creating UNIX file systems on System Drives is through the SCO UNIX `mkdev hd` command. Follow the instructions in the SCO UNIX documentation for adding a hard disk.

Mylex Disk Array Controllers are mapped differently under SCO UNIX than under the Mylex Disk Array Controller Configuration Utility. It is necessary to use the target ID and the LUN number to identify each system drive being created for SCO UNIX.



The following table shows the relationships of SCO UNIX target IDs and LUNs to System Drive numbers as defined under the Mylex Disk Array Controller Configuration Utility. For example, for System Drive number 20, enter 4 for the target ID and 3 as the LUN (shaded areas in Table 5-1).

*Table 5-1. System Drive Mapping Addresses*

| SCO Target ID | Mylex Disk Array Controller Configuration Utility System Drive Number |           |           |           |
|---------------|---|-----------|-----------|-----------|
| 0             | 0   | 8         | 16        | 24        |
| 1             | 1   | 9         | 17        | 25        |
| 2             | 2   | 10        | 18        | 26        |
| 3             | 3   | 11        | 19        | 27        |
| 4             | 4   | 12        | 20        | 28        |
| 5             | 5   | 13        | 21        | 29        |
| 6             | 6   | 14        | 22        | 30        |
| 7             | 7   | 15        | 23        | 31        |
|               | SCO LUN 1   | SCO LUN 2 | SCO LUN 3 | SCO LUN 4 |

**Note**

The bus number is always zero.

## Installing Mylex Disk Array Controller Tape Drivers

The driver that provides support for tape drives also gets installed as a part of the standard controller SCO UNIX driver installation. It is recommended that a tape drive installed on any Mylex Disk Array Controller channel be set to SCSI ID 2.

To install UNIX from a tape drive, follow the standard SCO UNIX OpenServer installation for tape as described in the SCO UNIX documentation.

After SCO UNIX 5.0.x is installed, the tape drive is configured as a standard tape device, and can be accessed by using the device `/dev/rStp0`. Also, any tape control operation can be done using the `tape` command. Refer to the SCO UNIX manuals for more details on using a tape drive.

If the installation of UNIX was not done from tape, use the `mkdev tape` command to configure the tape drive. When prompted for the LUN of the device, make sure to specify a LUN of 0.

The tape drive may be placed on any channel. However, if another device with the same SCSI ID is present on a lower channel, the tape may not function properly.

### ***Mylex Disk Array Controller CD-ROM Drivers***

The driver that provides support for CD-ROM devices also gets installed as a part of the standard controller SCO UNIX driver installation. It is recommended that a CD-ROM drive installed on any controller channel be set to SCSI ID 5.

Use the View/Update Configuration option of the Mylex Disk Array Controller Configuration Utility to configure the CD-ROM. Save the new configuration before trying to use the CD-ROM under SCO UNIX.

To install UNIX from a CD-ROM drive, follow the standard SCO UNIX OpenServer installation instructions for CD-ROM. A screen will prompt you for the type of installation being performed. You can choose either TAPE (default), or CD-ROM, etc. From here you can select the SCSI option as described in the SCO UNIX documentation.

If UNIX was not installed from CD-ROM, then a CD-ROM drive may be configured using the `mkdev cdrom` command. The LUN of this device should always be set to 0.

A CD-ROM drive may be placed on any channel. However, if another non-disk device with the same ID is present on a lower channel, only the non-disk device on the lower channel will be accessible.

## Installing the Mylex Disk Array Controller as a Secondary Controller

This section provides guidelines for the system administrator to follow during the installation of SCO UNIX to prepare it for using the Mylex Disk Array Controller as a secondary controller. The following guidelines will focus mainly on the important steps for installing the Mylex Disk Array Controller SCO UNIX drivers. For detailed information about the operating system installation, consult the SCO UNIX documentation.

If a tape drive connected to the controller is being used for installation, make sure that the tape drive is set to SCSI ID 2, that the configuration utility has been run with the tape drive installed, and that the configuration has been saved. The same is also true when using a CD-ROM, except the CD-ROM needs to be set to SCSI ID 5.

### Secondary Controller Installation Procedure

The procedure for installing the Mylex Disk Array Controller as a secondary controller under SCO UNIX using Mylex drivers varies slightly depending on the type of device that is installed as the primary controller:

- If the primary controller is IDE or EIDE, start at Step 1.
  - If the primary controller is SCSI, start at Step 6.
1. Make sure the following SCO SCSI modules are enabled before attempting to install the Mylex controller SCO *mdac* drivers into an existing SCO system.

**Sdsk** : SCSI disk  
**Stp** : SCSI tape  
**Srom** : SCSI CD-ROM

2. Change to the *sdevice.d* subdirectory
 

```
# cd /etc/conf/sdevice.d
```
3. Enable the SCO UNIX SCSI modules by editing the files: *Sdsk*, *Stp*, and *Srom*. Change the second field on all three files from N to Y.

Example of *Sdsk* file before edit (where *x* could be any digit):

```
Sdsk N x x x x x x x x
```

After edit:

```
Sdsk Y x x x x x x x x
```

4. Relink the kernel:

```
#cd /etc/conf/cf.d
# ./link_unix
```

5. Reboot the system.

6. Make sure you are in single-user mode (init 1), then install the Mylex *mdac* drivers by running the *installpkg* utility. Insert the “Software Kit SCO OpenServer Driver diskette.”

```
# init 1
# installpkg
```

7. When the message prompt asks for a package name, type *mdac*.

```
Please enter the names of the packages you
wish to install, or q to quit: mdac
```

8. Rebuild SCO UNIX kernel.

```
# cd /etc/conf/cf.d
# ./link_unix
```

9. Reboot the system to invoke the new kernel.

10. Run *mkdev hd* to configure the hard disks (system drives) on the controller.

- Enter **mdac** for package name
- Select the target IDs and LUN numbers until all controllers and system drives are configured (refer to Table 5-1).
- Select **Y** to relink kernel

11. Reboot the system to invoke the new kernel. Run *mkdev hd* again to prepare storage space for the UNIX filesystem. Be sure to enter the same numbers entered in Step 10 above for each system drive. A partition table will be displayed and you will be prompted to enter the filesystem size in cylinders. For controller drive mapping, 1 cyl = 2MB.

## Updating a Previously Installed Driver

To install the Mylex Disk Array Controller into an existing system to replace an older version of the driver, perform the following procedure:

1. Make sure you are in single-user mode (init 1), then install the Mylex *mdac* drivers by running the *installpkg* utility. Insert the “Software Kit SCO OpenServer Driver diskette.”

```
# init 1
# installpkg
```

2. When the message prompt asks for a package name, type *mdac*.

```
Please enter the names of the packages you
wish to install, or q to quit: mdac
```

3. A message prompt will advise you that a *mdac* is already installed and will ask you to confirm that you want to replace it. Type *y* for yes.

```
There is already a mdac installed.
Do you want to replace it with the version
in madac? (y/n/q): y
```

4. Rebuild SCO UNIX kernel.

```
# cd /etc/conf/cf.d
# ./link_unix
```

5. Reboot the system to invoke the new kernel.

## Tuning SCO for Maximum Performance

Best system performance can be achieved when using the Mylex Disk Array Controller SCO UNIX *mdac* driver by fine-tuning certain UNIX parameters.

To perform this system tune-up, use the *scoadmin* utility. Select *Hardware/Kernel manager*: Under the Kernel option select *Tune Parameters*. The SDSKOUT parameter is located under *Miscellaneous device drives and hardware parameters* and the NMPBUF parameters is located under *Buffers management*. Refer to the SCO UNIX on-line documentation for information on the *scoadmin* utility.

Tune the following parameters:

**SDSKOUT** – Set this value to a number equal to 126 divided by the number of system drives being used. If required, round down the result to the next lower value so that its multiple does not exceed 126.

**NMPBUF** – Set this parameter for controller driver version 4.x or above.

Use the *sar -h* command to find the Scatter/Gather Buffer utilization and the *Out of scatter/Gather buffers* condition to set the buffer parameters.

Since the system configuration and the test suites differ significantly, the best way to tune either of these parameters is to evaluate the system activity report data. Refer to the SCO UNIX documentation for more information on methods and procedures that relate to acquiring and interpreting *sar* data.

### Overview

This chapter provides information about the following installation procedures and the functionality of the Mylex Disk Array Controller drivers for UnixWare 7.x and UnixWare 2.1.2 and 2.1.3. The software is provided on the appropriate Software Kit distribution CD-ROM with a file to create a diskette.

The UnixWare driver for the Mylex Disk Array Controller supports disk drives, tape drives and CD-ROM drives under UnixWare 7.x and UnixWare 2.1.2 and 2.1.3. The driver supports up to four controllers. Also, the driver supports secondary system drives larger than 8GB.

## Special Notes

- In order for UnixWare 2.1.2 and below to detect a Mylex multifunction controller such as a DAC960PG, DAC960PJ, DAC960PR, DAC960PT, etc., UnixWare 2.1.2 and below must have a “multifunction PCI Driver” loaded.
- In order to install a Mylex multifunction controller, a driver diskette must be created from the CD-ROM. See “Creating a Driver Diskette for UnixWare” on page 6-3.
- If using a Mylex multifunction controller as a primary controller<sup>1</sup>, please refer to “Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 7.x/2.1.3” on page 6-3.
- If using a Mylex multifunction controller as a secondary controller<sup>2</sup>, please refer to “Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 7.x/2.1.3” on page 6-5.
- If using a Mylex multifunction controller as a primary controller, please refer to “Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 2.1.2” on page 6-6.
- If using a Mylex multifunction controller as a secondary controller, please refer to “Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 2.1.2” on page 6-8.

- 
1. “Primary” indicates that a controller’s storage device will be the boot device for UnixWare installation.
  2. “Secondary” indicates that the controller is not the bootable device for the UnixWare operating system.

## Creating a Driver Diskette for UnixWare

Before installing the Mylex Disk Array Controller Drivers for UnixWare, a UnixWare driver diskette must be created according to the instructions in Appendix A, “Creating PCI Driver Installation Diskettes.”

This diskette will be used in both the primary and secondary installation processes and when updating a previously installed driver wherever instructed to insert the “Software Kit UnixWare (dak) driver diskette.”

## Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 7.x/2.1.3

If the Mylex Disk Array Controller will be the primary (bootable) controller, follow the instructions below.

### Note

If you are installing UnixWare 2.1.2 as a primary controller, please refer to “Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 2.1.2” on page 6-6.

1. Follow the instructions in the appropriate Mylex Disk Array Controller manuals to set up the hardware, install the controller, connect the disk, tape, and/or CD-ROM drives, and run the Mylex Disk Array Controller Configuration Utility to create Drive Groups and System Drives.

### Note

CD-ROM or tape drives may be connected to any channel on the first controller. Do not set the SCSI ID of either CD-ROM drives or tape drives to ID 0.

2. Initialize all the System drives using the RAID EzAssist Configuration Utility. Make sure the first System drive is less than 2GB.

 **Note**

If installing onto a system that is SISL capable and using a SISL capable DAC it is recommended to disable the SCSI chip driver on the system by entering the *DCU* at the appropriate screen then select *Software Device Drivers* and disable the appropriate driver.

3. Boot the system from the UnixWare Diskette.
4. Follow the instructions provided in the *UnixWare Installation Handbook*. The Mylex Disk Array Controller driver for UnixWare is included on the Software Kit UnixWare (dak) driver diskette which was made from the Software Kit CD-ROM.
  - During the installation, you will be prompted to either *Install Host Bus Adapter Drivers* or *Continue Installation*.
  - Select *Install Host Bus Adapter Drivers*,
  - Insert the Software Kit UnixWare (dak) driver diskette as instructed, and continue with the instructions provided in the *UnixWare Installation Handbook*.
  - The controller should be detected automatically during the install process.
5. After the installation of boot files, the system is automatically shut down.

Use */dev/rct0* and */dev/cdrom/c0b0txl0* (*x* is the CD-ROM SCSI ID number) to access tape and CD-ROM devices after installation.

## Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 7.x/2.1.3

If UnixWare is installed on a Mylex controller, the Mylex Disk Array Controller driver for UnixWare is already installed in the system. Simply install the new Mylex Disk Array Controller hardware.

### Note

If you are installing UnixWare 2.1.2 as a secondary controller, please refer to “Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 2.1.2” on page 6-8.

If UnixWare is installed on a non-Mylex controller, install the Mylex Disk Array Controller driver for UnixWare as follows:

### Note

If installing onto a system that is SISL capable and using a SISL capable DAC it is recommended to disable the SCSI chip driver on the system by entering the *DCU* at the appropriate screen then select *Software Device Drivers* and disable the appropriate driver.

1. Insert the Software Kit UnixWare (dak) driver diskette into the floppy diskette drive, please refer to “Creating a Driver Diskette for UnixWare” on page 6-3.
2. Type the following (match case exactly as shown):

```
pkgadd -d diskette1 dak ↵
```

The new controller driver is installed.

3. Rebuild the Kernel:

```
/etc/conf/bin/idbuild -B ↵
```

4. Reboot the system:

```
shutdown -i0 -g0 -y ↵
```

## Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 2.1.2

Mylex multifunction controllers use firmware 4.x or above. A special patch is required for operation of these controllers with UnixWare 2.1.2 (not required for UnixWare 2.1.3 or 7.x on x86). Follow the steps below to download the patch files and create diskettes.

### Note

If you are installing UnixWare 7.x or UnixWare 2.1.3 as a primary controller, please refer to “Installing the Mylex Disk Array Controller as the Primary UnixWare Controller with UnixWare 7.x/2.1.3” on page 6-3.

1. Download the following files from the Technical Support area of the Mylex web site:

```
ptf3256.boot.dd.exe  
ptf3256.s.exe
```

2. Insert a non-bootable DOS-formatted floppy diskette in the diskette drive and run:

```
ptf3256.boot.dd.exe a: ↵
```

3. Remove the first diskette, then insert a second non-bootable DOS-formatted floppy diskette in the diskette drive and run:

```
ptf3256.s.exe a: ↵
```

Use the two diskettes you’ve just created when requested in the procedure below.

To install the UnixWare driver for the Mylex Disk Array Controller:

1. Follow the instructions in the appropriate Mylex Disk Array Controller manuals to set up the hardware, install the controller, connect the disk, tape, and/or CD-ROM drives, and run the RAID EzAssist Configuration Utility to create Drive Groups and System Drives.

### Note

CD-ROM or tape drives may be connected to any

channel on the first controller. Do not set the SCSI ID of either CD-ROM drives or tape drives to ID 0.

2. Initialize all the System drives using the RAID EzAssist Configuration Utility. Make sure the first System drive is less than 2GB.

 **Note**

If installing onto a system that is SISL capable and using a SISL capable DAC it is recommended to disable the SCSI chip driver on the system by entering the *DCU* at the appropriate screen then select *Software Device Drivers* and disable the appropriate driver.

3. Boot the system from the PTF3256 Boot Diskette.
4. Follow the instructions provided in the *UnixWare 2.1.2 Installation Handbook*. The Mylex Disk Array Controller driver for UnixWare is included on the Software Kit UnixWare (dak) diskette made from the Software Kit CD-ROM.
  - During the installation, you will be prompted to either *Install Host Bus Adapter Drivers* or *Continue Installation*.
  - Select *Install Host Bus Adapter Drivers*,
  - Insert the Software Kit UnixWare (dak) driver diskette as instructed, and continue with the instructions provided in the *UnixWare Installation Handbook*.
  - The controller should be detected automatically during the install process.
5. Insert the PTF3256 Supplemental Diskette when prompted.
6. After the installation of boot files, the system is automatically shut down.

Use */dev/rct0* and */dev/cdrom/c0b0txl0* (*x* is the CD-ROM SCSI ID number) to access tape and CD-ROM devices after installation.

## Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 2.1.2

Mylex multifunction controllers use firmware 4.x or above. A special patch is required for operation of these controllers with UnixWare 2.1.2 (not required for UnixWare 7.x on x86 or UnixWare 2.1.3). UnixWare *must* already be installed on another controller before you may install this special patch. Follow the steps below to download the patch file and create a diskette:

### Note

If you are installing UnixWare 7.x or UnixWare 2.1.3 as a secondary controller, please refer to “Installing the Mylex Disk Array Controller as the Secondary UnixWare Controller with UnixWare 7.x/2.1.3” on page 6-5.

1. Download the following file from the Technical Support area of the Mylex web site:

`pcipatch.exe`

2. Insert a non-bootable DOS-formatted floppy diskette in the diskette drive and run:

`pcipatch.exe a: ↵`

Use the diskette you’ve just created when requested in the procedure below.

To install the UnixWare driver for the Mylex Disk Array Controller:

### Note

If installing onto a system that is SISL capable and using a SISL capable DAC it is recommended to disable the SCSI chip driver on the system by entering the *DCU* at the appropriate screen then select *Software Device Drivers* and disable the appropriate driver.

1. Insert the patch diskette in the file server’s diskette drive.
2. Type the following (match case exactly as shown):

```
pkgadd -d diskette1 ↵
```

3. When asked for the package name, select the appropriate name from the list and press <Enter>.

The patch files are installed.

4. Remove the patch diskette, then insert the Software Kit UnixWare diskette into the floppy diskette drive.

5. Type the following (match case exactly as shown):

```
pkgadd -d diskette1 dak ↵
```

The new controller driver is installed.

6. Rebuild the Kernel:

```
/etc/conf/bin/idbuild -B ↵
```

7. Reboot the system:

```
shutdown -i0 -g0 -y ↵
```

## Adding System Drives

Use the UnixWare *diskadd* command to add System Drives to the primary controller and to any secondary controllers. For more information, refer to the UnixWare documentation on the *diskadd* utility.

### Note

No UnixWare *Slice* (UNIX file system) can be greater than 2GB.

### To Primary Controller

For the second and third System Drive of the primary controller, specify the *diskadd* command as shown below (assuming the Mylex Disk Array Controller is the first or only disk controller):

```
# diskadd c0b0t0d1 ## (for the second System Drive)
```

```
# diskadd c0b0t0d2 ## (for the third System Drive)
```

### To Secondary Controller(s)

For the first and second System Drives of a secondary controller, specify the *diskadd* command as shown below (assuming there is no other disk controller):

```
# diskadd c1b0t0d0 ## (for first System Drive of the  
second controller)
```

```
# diskadd c1b0t0d1 ## (for second System Drive of the  
second controller)
```

### Updating a Previously Installed Driver

To update the controller driver, follow the procedure below:

1. Insert the Software Kit UnixWare (dak) driver diskette in the file server's diskette drive.
2. Type the following (match case exactly as shown):

```
pkgadd -d diskette1 dak ↵
```

The new controller driver is installed.

3. Rebuild the Kernel:

```
/etc/conf/bin/idbuild -B ↵
```

4. Reboot the system:

```
shutdown -i0 -g0 -y ↵
```

## Changing the Controller Configuration

If there is a need to change the IRQ of the controller at any time, refer to the UnixWare manual under *DCU*. If a Mylex Disk Array Controller is the primary controller, and a second, third or fourth Mylex Disk Array Controller is to be added, set the interrupt for the secondary controller, then power-cycle the system (power off, then power on).

When the system restarts, UnixWare identifies the controller and displays the message “New hardware instance mapped to static driver...” The controller should be detected automatically during the start up sequence. Use DCU to verify the interrupts after logging-on the system.



### Overview

This chapter provides information and installation procedures for the device drivers for Solaris 7.0. The software is provided on the appropriate Software Kit distribution CD-ROM with a file to create a diskette.

The Solaris driver for the Mylex Disk Array Controller supports disk drives, tape drives and CD-ROM drives under Solaris 7.0. The driver supports up to 16 controllers. Also, the driver supports secondary system drives larger than 8GB.



## Creating a Driver Diskette for Solaris

Before installing the Mylex Disk Array Controller Drivers for Solaris, a Mylex MDAC Supplemental Driver Diskette (MDAC Supplemental Diskette) must be created according to the instructions in Appendix A, “Creating PCI Driver Installation Diskettes.”

This diskette will be used in both the primary and secondary installation processes and when updating a previously installed driver wherever instructed.

## How to use the Mylex Supplemental Driver Diskette

You can use the *Mylex Supplemental Driver Diskette* you just created in the previous section in one of two ways:

- To use new drivers to install or upgrade the Solaris operating environment on a system with new hardware (primary installation), or
- To add new drivers to support (update) new hardware on an already installed booted system (secondary installation).

## Installing Solaris Using the Solaris Device Configuration Assistant Diskette for a Primary Installation

The steps below describe how to use drivers on the Solaris Device Configuration Assistant Diskette<sup>1</sup> for a Primary Installation to install Solaris (Intel Platform Edition) on a new system.

These instructions assume that you are installing Solaris 7 onto a x86 system using the Mylex MDAC driver.

Use the appropriate Solaris Device Configuration Assistant Diskette as the boot diskette.

1. Insert the Solaris Device Configuration Assistant Diskette into your

- 
1. The Solaris Device Configuration Assistant Diskette is a boot diskette provided by Sun Microsystems.

computer's disk drive. Also, insert the Solaris Installation CD-ROM. If you have a network installation, verify with your system administrator that the Solaris Network Installation image is available on your network.

2. Turn on your computer.
3. When the Solaris Device Configuration Assistant screen is displayed, choose the F4 option (on Solaris 7, this is labeled as, F4\_Add Driver).

You will see the Bus Enumerating screen with the following message:

```
Determining buses...is displayed.
```

4. Follow the directions on the next screen, the Install Supplemental Drivers screen.
5. Now, remove the Solaris Device Configuration Assistant Diskette from the disk drive, then insert the MDAC Supplemental Diskette.
6. Press <F2> to continue. (F2 means "Continue")

The Select Solaris System Version screen is displayed. Press <Enter> to choose the Solaris operating system. It will show up as:

```
[ ] Solaris OS 2.7
```

7. Select the appropriate Solaris Operating System and press <F2>. Two screens will be displayed.
  - The Loading Supplemental Driver Software screen is displayed, along with a progress bar that shows the percentage of drivers that have been extracted from the diskette. Drivers are read into memory and survive long enough for the system to successfully boot to its installation program. The drives loaded are:

```
mlx.itu and mdac.itu
```

- The Continue Supplemental Driver Installation screen is displayed when all the new drivers on the diskette have been processed.

8. Now, remove the MDAC Supplemental Diskette from the disk drive and then insert the Solaris Device Configuration Assistant diskette.
9. Press <F4> to finish the driver installation. You will see the following display:

```
mlx - Device Driver
mdac - Device Driver
```

10. Press <F2> to continue.

 **Caution**

DO NOT REMOVE the Solaris Device Configuration Assistant Diskette from the disk drive until you see the following message displayed in a dialog box:

*Message:* If you want to bypass the device configuration and boot screens when the system reboots, eject the Solaris Device Configuration Assistant/Boot diskette now.

11. Continue with Sun Microsystems' installation instructions and follow the screen prompts.
12. Near the end of the Solaris operating system installation, you will be asked to insert the Mylex Supplemental Driver. Insert the diskette at that time.

The system will automatically reboot when the Solaris operating system has been completely installed.

## Installing Solaris Using the Mylex MDAC Supplemental Driver Diskette for a Secondary Installation

Before you begin to add or update your drivers, check that your newly supported hardware devices are installed and configured according to the instructions in the corresponding Device Reference Page, if any. See Device Reference Manual for Solaris (Intel Platform Edition).

These instructions assume that you are working with a x86 system using either the Mylex MDAC driver.

 **Note**

When the Solaris Intel Platform Edition software is already installed, the simplest way to add new or updated drivers is to install the supplemental driver diskettes as patches on your system.

Follow the steps below for a secondary (existing) installation.

1. Access the root directory. At the # prompt, type

```
cd /
```

2. Type the following command to see if the Volume Management software is running on the computer you are updating:

```
ps -ef | grep vold
```

### Note

For more information about managing diskettes and drives, see the System Administration Guide for Solaris.

3. If Volume Management is running, temporarily stop it by typing the following command line at the system prompt.

```
/etc/init.d/volmgt stop
```

4. Insert the MDAC Supplemental Diskette into the disk drive.
5. Mount the MDAC Supplemental Diskette at the /mnt mount point by typing the following command:

```
mount -F pcfs /dev/diskette /mnt
```

### Note

You must mount the MDAC Supplemental Diskette at this point in the file structure to update your computer successfully.

6. Execute the install script on the diskette, using the appropriate Solaris release directory (sol\_27 for Solaris 7). For example:

```
# /mnt/DU/sol_27/i86pc/Tools/install.sh -i
```

The install.sh script searches for all new or updated drivers on the diskette. When a new or updated driver is found, the following message is displayed:

```
Unconditionally installing ITUs <mlx mdac>  
Installing package <MYLXmlx>
```

7. You will see the following message:

```
Installation of <MYLXmlx> was successful.
```

You will see another message and prompt:

```
Installing package <MYLXmdac>
Do you want to continue with the installation of
<MYLXmdac> ?
```

If the driver is the one you want to install, at the prompt, type **y** for **yes** or press **<Enter>**. If the driver is not the one you want, type **n** for **no**.

 **Note**

Be sure to wait for the following “successful” message to appear. It is somewhat delayed. If the process is interrupted before it appears, the installation will not be completed.

If you select **y** for **yes**, the `install.sh` script installs the driver. You will see the following message:

```
Installation of <MYLXmdac> was successful.
```

8. When you're done and the `install.sh` script exits, unmount the diskette by typing the following command lines:

```
# cd /
# umount /mnt
```

9. Remove the Mylex Supplemental Driver diskette from the disk drive.
10. Reboot your computer, type in the following command lines.

```
# touch /reconfigure
# reboot
```

11. Turn off your computer, add the new hardware, and turn on your computer again.
12. When the autoboot sequence prompt is displayed, quickly press Escape.

The autoboot sequence is interrupted. The Solaris Device Configuration Assistant screen is displayed.

13. Press <F2> to continue.

You will see the Bus Enumerating screen with the following message:

```
"Determining buses..." is displayed.
```

The Scanning Devices screen is then displayed. System devices are scanned. When scanning is complete, the Identified Devices screen is displayed.

14. Press <F2> to continue.

You will see the following message:

```
Message: "Loading driver com.bef..." is displayed.
```

The boot Solaris screen is then displayed.

15. On the Boot Solaris screen, select the device controller attached to the device that contains your install medium, in this case the main system disk.

The following script is displayed when new hardware is found.

```
/etc/bootrc
```

16. At the prompt, type: (reboot)

```
b -r
```

This reboot process concludes the installation of new or updated drivers. When your computer has rebooted, you can use your new hardware.





### Overview

This chapter provides contact information for the Mylex disk array controller drivers needed to support Linux.

### Installing the Disk Array Controller Drivers

Go to the following web site to download the appropriate Mylex Disk Array Controller Drivers:

<http://www.dandelion.com/Linux/DAC960.html>

The MDAC device driver (DAC960.o) version 2.2.4 supports previous Mylex PCI controllers<sup>1</sup>. Version 2.2.6 or higher is required for new PCI controllers<sup>2</sup>.

For instructions on how to install the disk array controller drivers, see the appropriate instructions on the web site and refer to the appropriate Linux OS distribution reference manual.

#### Note

Device driver version 2.2.4 is embedded in Red Hat 6.1/6.2, SuSE 6.3/6.4, Caldera 2.4, and Turbo Linux 6.0.

- 
1. These controllers include DAC960P Series, AcceleRAID 150/200/250, and eXtremeRAID 1100 (DAC1164P).
  2. These controllers include AcceleRAID 160/170/170LP/352 and eXtremeRAID 2000 PCI to Ultra 160 SCSI controllers, and the eXtremeRAID 3000 PCI to Fibre Channel controller.



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# Appendix A

## Creating PCI Driver Installation Diskettes

### Introduction

The Mylex Disk Array Controller Operating System Drivers package allows your operating system to run with your Mylex controller. You can create your own driver diskette from the RAID Management Software Installation menu under Windows.

Mylex provides driver diskettes for Windows 2000, Windows NT 4.0, and Netware 4.2/5.x. If these are damaged or lost, you can recreate another set of diskettes.

Use this procedure to create driver diskettes for Sun Solaris 7 x86, SCO OpenServer 5.0.5, and Unixware 7.1.x, or 2.1.2/2.1.3.



## Creating Operating System Driver Diskettes

For the procedure below, the CD-ROM must be inserted into a system running Windows 95/98, Windows NT 4.0, or Windows 2000.

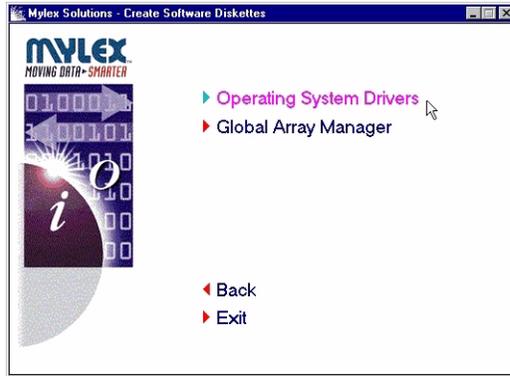
Create a driver diskette in six easy steps:

1. Insert the CD-ROM provided in your Mylex package.
2. From the RAID Management Software Installation menu, click Create Software Diskettes.



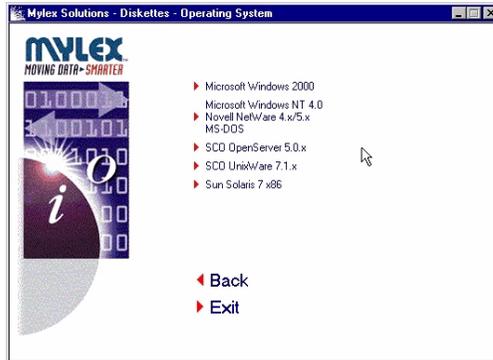
**Figure A-1. RAID Management Software Installation Menu**

3. Click Operating System Drivers.



**Figure A-2. Create Driver Diskette Menu**

4. Click the appropriate operating system corresponding to the PCI driver installation diskette you wish to create.



**Figure A-3. Appropriate Operating System Menu**

5. When the operating system has been selected, you will be prompted with a DOS shell requesting that you insert a blank diskette.



**Figure A-4. DOS Shell**

6. Insert the blank diskette and press Enter to extract the image onto the diskette.

Use your newly created driver diskettes to install your Mylex controller operating system drivers. Refer to the appropriate chapter in this manual.





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