SCSI RAID Family

Quick Start Guide

adaptec®

In This Booklet

Read This First

Before you start to install your new Adaptec controller, please take time to read this booklet. It contains an overview of the installation process and the other important information. If you have experience installing RAID subsystems, reading this can save you time and make the installation easier.

Errata & Release Notes

Before beginning your installation, review the errata and release notes associated with Adaptec SCSI RAID controllers, software and documentation. To read this information, select **Release Notes** from the View Documentation list or open the read.me file in the root directory of the CD with a text editor.

If you need more detailed information, the complete product manuals are on the Adaptec CD-ROM. The table on page 8 is a guide to help you match what you want to know with the product manual that has the information you need.

This booklet describes:

- How to view the documentation on CD-ROM
- Installing and configuring your hardware
- Installing Adaptec software
- How to access Storage Manager on ROM (SMOR)
- Contacting Adaptec Technical Support

Using the Adaptec CD

The Adaptec SCSI RAID CD is a bootable media. You can use this CD to configure disk arrays in a host system that does not yet have an operating system installed. The CD-ROM drive must be attached to a controller and host system that recognizes bootable CDs. Some systems might require you to change the system BIOS configuration so that the CD-ROM drive is used as a boot device.

When the CD is used as a boot source, an operating system is loaded and then the Adaptec SCSI RAID installation utility starts. You will be able to read the product documentation, install I_2O drivers, run Storage Manager, and create disks to use for driver installation when the operating system being installed cannot use the CD-ROM as a source for the files.

When the Adaptec SCSI RAID Family install utility appears, you have the following choices:

- Create driver disks

  This selection will display a dialog that lists the operating systems for which disks can be created. This lets you create disks for operating system driver installation procedures that cannot read directly from the CD-ROM.

- Launch RAID configuration utility

  This selection starts the Storage Manager application so that you can configure your RAID subsystem and build disk arrays.

- View documentation

  This selection displays a list of the available product manuals and the read.me file with the latest release notes. Select a document name and click on OK to view the information.

- Start a command shell

  This selection starts a Linux command shell. This lets you mount additional device or enter other system commands that might be required during the installation.

- Reboot

     This selection will restart the computer system. As soon as the
     system begins to restart, remove the CD from the CD-ROM
     drive if you do not want to use it for the boot device.

If you are using a Microsoft Windows operating system, put the CD
into your CD-ROM drive. If you have Autorun turned on, the Adaptec
setup utility will automatically start and display the Adaptec
installation menu with four options:

- Install Adaptec Storage Manager Pro

     Installs the Storage Manager Pro software and Java
     environment for Microsoft Windows. You must install Storage
     Manager using the Typical option to enable configuration
     management.

- Install Adaptec Storage Manager

     Installs the Storage Manager software, I_2O driver for
     Microsoft Windows.

- View Latest Information

     Displays the *Release Notes* which contain the latest information
     for Adaptec SCSI RAID products and software.

■ Create Floppy Disks

Lets you create disks for driver installation on systems that require them to install the software or drivers.

■ Install Adobe Acrobat Reader

Installs Adobe Acrobat Reader for Windows to let you view the Adaptec documentation in PDF format. Versions of Acrobat Reader for other platforms are also included, see *Installing Adobe Acrobat Reader* on page 8.

If the Autorun menu does not appear automatically:

1 Click the **Start** button.

2 Select **Run**.

3 Type *d:*\autorun.exe

where *d:* is the drive letter assigned to your CD-ROM drive.

4 Click **OK** to run the program.

Follow the prompts to complete the installation.

Adaptec Product Documentation

Detailed product documentation is supplied in Adobe Acrobat PDF format. A list of supplied documents is given in the table on page 8.

Both Adobe Acrobat Reader and Adobe Acrobat Viewer are provided on the Adaptec CD-ROM. If you need to know specific information about your controller or the software, you need to use one of these PDF reader programs. You can also use a different computer with Acrobat Reader already installed.

Adobe Acrobat Viewer can be used on any host system that has a Java Virtual Machine (JVM) installed. You must have Java Runtime Environment 1.1.8 installed to use Acrobat Viewer.

The installation utility lets you choose whether or not you want to install Adobe Acrobat Reader.

When you find the manual you need, open the document by double clicking the file name or icon. You can use the Table of Contents or the bookmark list to navigate the document.

You can also visit our web site at http://www.adaptec.com and download the product manuals. The manuals available on the Adaptec web site may be more recent versions than those on the CD.

Subject	Location on CD
Storage Management Software User's Guide	\docs\do1011_1.pdf
Storage Manager Pro User's Guide	\docs\do1012_1.pdf
2100S SCSI RAID Installation Guide *3000S Series SCSI RAID Installation Guide*	\docs\do1013_1.pdf \docs\do1014_1.pdf

Installing Adobe Acrobat Reader

The following sections describe where to find the Acrobat Reader which you need to view the product documentation on the CD. Acrobat Reader is available from Adobe Systems as a free download. Go to http://www.adobe.com for more information.

Windows 95/98, Windows NT, Windows 2000

Acrobat Reader for Windows installs automatically within the Adaptec installation utility. If you select the **Custom** option during the install, you can choose whether or not to install Acrobat Reader on your system.

Linux

Acrobat Reader for Linux is located on the CD in the \packages\linux\redhat_6.2_or_6\apps\adobe\ subdirectory.

Novell NetWare

Adobe Acrobat Reader and Viewer are not available for this operating system or a DOS environment. You will need to use a host system where Acrobat Reader or Acrobat Viewer is supported.

UNIX

Adobe Acrobat Viewer is included on the Adaptec CD to let you view Portable Document Format (PDF) files on a UNIX platform that has Java Runtime Environment 1.1.8 installed. This version is for UNIX operating systems where Acrobat Reader is not available. This package is located in the \acrobat_java subdirectory on the CD.

Installing and Configuring Hardware

Installation Overview

The process of installing an Adaptec controller consists of the following steps:

1 If you are using a RAIDstation enclosure, configure it as described in the Adaptec *RAIDstation User's Manual.*

2 Configure device IDs, cables and termination for SCSI devices in the host system.

3 If you are expanding your cache memory, plug the appropriate modules into the controller.

> **Note:** Adaptec SCSI RAID controllers must have at least one 32MB memory module installed.

4 Install the controller and storage devices in the appropriate enclosures. Attach all cables between the controller and the storage devices.

5 Run Storage Manager on ROM (SMOR) by pressing **Ctrl+A** during system boot. SMOR lets you configure the controller and verify proper hardware configuration. You can also use SMOR to configure your storage subsystem and disk arrays before installing the operating system.

6 Install the I₂O driver for your operating system. You can also install Storage Manager Pro or Storage Manager on operating systems that support these applications.

Storage Manager Pro and Storage Manager are included on the Adaptec CD. If you are using a Microsoft Windows operating system, they can be installed automatically by the Adaptec Autorun install utility. A version of Storage Manager Pro for NetWare and versions of Storage Manager for SCO UNIX and Linux are also included on the installation CD-ROM. Refer to *Installing Adaptec Storage Management Software* on page 32 for specific information.

Configuring SCSI Termination

The physical ends of each SCSI bus must be terminated. Depending upon how you configure your system, you will either terminate two SCSI devices, or the SCSI controller and one peripheral SCSI device or the last connector on the cable. Ultra2 and Ultra160 devices typically do not provide built-in termination.
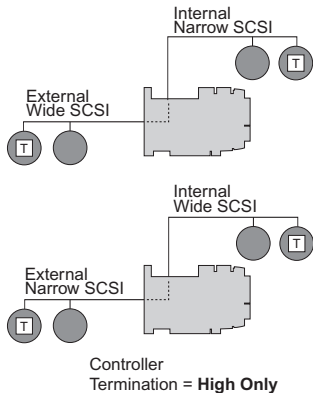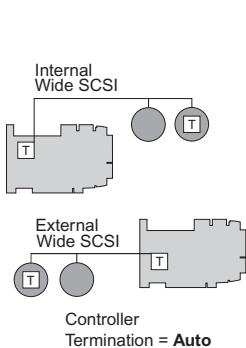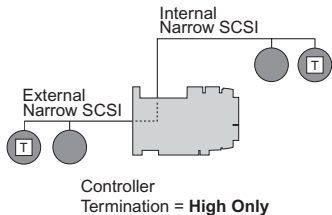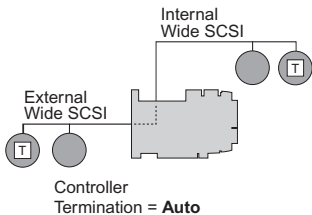
> ✓ **Note:** If you are using multiple SCSI busses on a single controller, each separate bus must be terminated.

SCSI termination for SCSI RAID controllers is configured through the SMOR utility or from the Configure Host Bus Adapter dialog in Storage Manager. The controller has four possible termination settings. These are listed in the following table.

Auto	The default setting. This setting can be used for all cabling conditions, except where two Narrow (8-bit) cables are attached or both a Narrow and Wide cable are used. For this case, use High Only.
Disabled	Turns off controller termination unconditionally.
Enabled	Turns on controller termination unconditionally.
High Only	Terminates only the additional signals that are used on Wide SCSI devices. This allows a Narrow cable or a Wide and Narrow cable to be simultaneously attached to the controller.

High Only termination is available only for devices on Bus 0. Devices on the second bus (Bus 1) must use 16-bit termination. By using a 68-pin to 50-pin SCSI cable adapter, an 8-bit SCSI device can be attached to a Wide SCSI cable along with Wide SCSI devices. However, the device at the end of the cable must be a Wide SCSI device so that all SCSI signals are terminated. For internal and external cables where one cable is an 8-bit (Narrow) SCSI cable, set the controller termination to **High Only**.

The following illustration shows various SCSI cabling examples. Terminate your SCSI devices as shown in the following examples, ensuring that only the devices at the ends of the cables are terminated.

Internal
Wide SCSI

External
Wide SCSI

Controller
Termination = **Auto**

Internal
Narrow SCSI

External
Narrow SCSI

Controller
Termination = **High Only**

Internal
Wide SCSI

External
Wide SCSI

Controller
Termination = **Auto**

Internal
Narrow SCSI

External
Wide SCSI

Internal
Wide SCSI

External
Narrow SCSI

Controller
Termination = **High Only**

T = Terminated

Configuring Device IDs

The SCSI specification allows up to seven SCSI devices (and a controller) to be connected to a single 8-bit SCSI bus. A Wide SCSI bus can support up to 15 devices and the controller.

All SCSI devices, including the controller, must be assigned a unique SCSI ID. SCSI IDs, which are typically set using jumpers or switches on peripheral devices, can be assigned any number from 0 to 7 for 8-bit SCSI devices or 0 to 15 for Wide SCSI devices.

Set the SCSI ID of each SCSI device attached to the controller to a unique ID number between 0 and 15 (0 – 6 for 8-bit devices). SCSI RAID controllers are set to ID 7 by default. SCSI IDs can be duplicated on the same controller if the devices using the same ID are not attached to the same bus.

If necessary, the SCSI RAID controller ID can be changed to any ID: 0-7. You can use SMOR or the Configure Host Bus Adapter dialog in Storage Manager to change the controller SCSI ID.

> **Note:** Changing the controller ID is not recommended. You should leave the Adaptec controller at SCSI ID 7 unless your configuration requires unique controller IDs.

Ultra2 and Ultra160 SCSI

SCSI RAID Ultra2 or Ultra160 SCSI buses support both LVD and single-ended devices, which can be mixed on the SCSI bus. However, connecting a single-ended device to an Ultra2 or Ultra160 bus forces the entire bus to run in single-ended mode with a maximum speed of 20 MHz.

Do not connect older High Voltage Differential SCSI devices to a Low Voltage Differential SCSI bus. They can damage the LVD hardware.

Installing the Controller

1 Connect the computer's disk activity LED cable to connector P6 on the controller. See the appropriate *SCSI RAID Installation Guide* for the location of this connector.

2 Pins 1 and 3 of P6 are connected to +5 V and Pins 2 and 4 are connected to GND. Ensure that the positive lead of the LED cable (usually a red wire or marked with a red stripe) is attached to Pin 1 or 3 and the negative lead (usually a black wire) is attached to Pin 2 or 4.

3 If you are using an internal SCSI cable, connect this cable to the controller.

4 Install the controller in an available 32- or 64-bit PCI bus slot and secure the controller bracket to the host system cabinet with the screw provided. In a system with multiple controllers, the

controller that has the lowest BIOS ROM address (typically, the lowest numbered PCI slot) will become the booting controller.

5 Connect any external cables to the controller.

Determining the Booting Controller

Adaptec SCSI RAID controllers are shipped with an Adaptec I_2O BIOS ROM enabled for PCI assignment. This ROM BIOS intercepts and processes INT13 BIOS calls with an embedded DOS driver.

The Adaptec I_2O BIOS ROM can be disabled or the address changed automatically by the system's Plug-and-Play BIOS. In systems with multiple Adaptec controllers, the first Adaptec I_2O controller found during boot loads its BIOS and installs all of the Adaptec hardware on the system. Any additional Adaptec I_2O controllers that are found automatically detect the presence of the first controller and disable their BIOS code. The disk controller that has the lowest BIOS ROM address (typically, the lowest PCI slot number) will become the booting controller.

Ensure that the Adaptec ROM occupies the lowest address if you want the Adaptec controller to be the booting controller in a system with controllers from multiple manufacturers.

Some system BIOS manufacturers select the smallest add-in BIOS as the first candidate, therefore slot selection has no effect on which adapter BIOS loads first. In this case, you need to disable the BIOS on

selected adapters to control which adapter is the boot controller. This procedure can also be helpful in situations where it is physically difficult to manage the slot order.

If your system contains multiple Adaptec controllers, you can confirm which controller has been chosen as the booting controller by running SMOR. This utility will display a list of all Adaptec controllers, starting with the booting controller.

Installing Memory Modules

> ⚠️ **Caution:** Adaptec controllers with expandable cache must have at least one memory module installed. If more than one is installed, they must be the same type and capacity.

Adaptec SCSI RAID controllers support up to 128 MB of cache using a onboard DIMM sockets. Adaptec recommends that all SCSI RAID controllers have at least 32 MB of cache installed. To confirm that the memory modules are properly installed, start SMOR and select the SCSI RAID controller to display the amount of cache memory reported.

Adaptec controllers will report 16 MB less cache than is actually installed because the first 16 MB of memory is used for the onboard processor. The total installed memory is reported correctly.

Note: ECC-protected cache is available only when using ECC memory modules. The ECC-enabled LED on the controller is lit when ECC memory is installed.

LED Indicators

All Adaptec controllers provide nine LEDs that let you visually monitor controller activity. Two additional LEDs (ECC EN and ECC ERR) indicate the status of the cache memory on the controller. For additional information about LEDs on SCSI RAID controllers, see the *Installation Guide* for your controller.

Power Up LED Status

During its power-up sequence, the controller passes through the following states in sequence, as indicated by the LEDs:

■ **Memory Mapped I/O** LEDs 6 and 7 and LEDs 5 and 8 flash alternately while the controller waits for the host computer to initialize the Address Translation Unit (ATU) on the PCI bus.

■ **Bridge** LEDs 5 and 7 and LEDs 6 and 8 flash alternately while the controller waits for the host computer to initialize its PCI-to-PCI bridge.

- **Fast Idle** The controller enters a fast idle pattern while waiting for the I$_2$O initialization commands after the ATU and PCI bridge have been enabled.

> **Note:** The ATU, PCI bridge and cache modules (if installed) must be configured and enabled before the I$_2$O initialization can be completed. If any one of these components are not configured or become disabled during the Fast Idle phase, the pattern will return to the respective wait pattern for the affected component.

Controller Idle Indication

When no commands are in progress and all bus activity has ceased, the controller enters the Idle state. This is indicated by a rotating pattern in LEDs 1 through 8.

Bus Status LEDs

Adaptec 3000S series SCSI RAID controllers include status LEDs to indicate the following SCSI bus operating conditions. Channel A normally is referred to as Bus 0 and Channel B is normally referred to as Bus 1.

The following table describes the Bus Status LEDs for 3000S SCSI RAID controllers.

TERMPWR-A TERMPWR-B	These LEDs are lit when termination power is supplied by the controller for the respective channels.
TRMEN-A TRMEN-B	These LEDs are lit when termination is enabled on the controller for the respective channels.
TRMENHD-A	This indicates the upper 8 bits of the A channel (Bus 0) are terminated to support an 8-bit bus segment. This LED is lit when the High-Only option is selected for bus termination.

Installing I$_2$O Drivers

Your new Adaptec controller uses I$_2$O drivers supplied by Adaptec or your operating system vendor. This section discusses driver and operating system installation when using Adaptec controllers. After you install the operating system, you can install Storage Manager or Storage Manager Pro. These applications are available for the platforms listed in *Installing Adaptec Storage Management Software* on page 32.

 Note: If a driver for your operating system is not supplied on the Adaptec CD, contact the manufacturer of your operating system to obtain an I_2O OSM.

Linux

Disk images are available on the CD-ROM. These disks provide drivers that support Linux kernel versions 2.2.12-20 and 2.2.14-5.0. Storage Manager for Linux is also included. Select **Linux** from the SCSI RAID Family **Create diskette** menu to create a disk for your version of Linux. Alternatively, Linux driver package files and disk images are located in the \packages\linux\redhat_6.2_or_6\apps subdirectory on the CD.

NetWare 4.x and 5.x

 Note: NetWare 4.2 requires the following command when you mount the CD-ROM: cdmount *volname* /x=usr where *volname* is the volume name for the CD-ROM.

Disk images are available on the CD-ROM. Disk images for NetWare are located in the \packages\netware subdirectory on the CD-ROM.

To create a disk for your version of NetWare, select **NetWare** from the SCSI RAID Family **Create diskette** menu.

SCO UNIX 3.2V4.2 and OpenServer 5

A SCO BTLD disk image is supplied on the Adaptec CD. You can create floppy disks by using the Adaptec install utility which starts when the CD is used as a boot media. You can install the driver under either SCO UNIX 3.2V4.2 or OpenServer 5.

SCO UnixWare 7

An I_2O OSM for UnixWare 7 is available from SCO. Contact SCO Technical Support for additional information.

Microsoft Windows

Drivers for all Windows operating systems can be installed automatically from the CD-ROM. In the case of a new system installation, refer to the driver software installation procedures in the *Installation Guide* for your controller.

The Adaptec driver for Windows provides support for both disk drives and other devices, such as CD-ROMs and scanners.

There are several driver installation scenarios under Windows:

- Installing a SCSI RAID controller into a new system, then installing Windows

- Upgrading an existing Windows system to a newer version

- Adding a SCSI RAID controller to an existing Windows system

Each of these cases requires a slightly different procedure. Most of the details are handled automatically by the Adaptec installation utility for Windows. You can indicate which options you want to use when prompted by the install program. For more specific information on the installation process, refer to the *Installation Guide* for your controller; see the table on page 8.

Windows 2000

The following sections describe procedures for installing Adaptec SCSI RAID controllers under Windows 2000. There are three installation scenarios:

- Upgrading Windows NT to Windows 2000

- Adding SCSI RAID to an Existing Windows 2000 System

- Installing Windows 2000 on a New System.

> **Note:** The Adaptec driver for Windows 2000 does not include a digital signature. You may receive one or more warning messages about this condition. Bypass the warnings, and continue. The driver will function normally.

For specific procedures, see the *Installation Guide* for your controller. You only have five seconds to press **F6** during the install startup. A prompt appears at the bottom of the screen when the **F6** key is active. If you do not press **F6** at this time, you must restart the Windows 2000 install process to complete the procedure correctly.

Upgrading Windows NT to Windows 2000

Install the Adaptec controllers and storage devices according to the instructions in *Installing and Configuring Hardware* on page 9. For specific information, see the *Installation Guide* for your controller.

Adding to an Existing Windows 2000 System

1 Install the Adaptec controller and storage devices according to instructions in *Installing the Controller* on page 15. For more information, see the *Installation Guide* for your controller.

2 Install the Storage Manager software and I$_2$O driver from the Adaptec CD-ROM Autorun installation utility.

   If the Setup utility does not start automatically, select **Start–Run** and enter d:\autorun.exe, where *d* is the letter assigned to your CD-ROM drive.

3 If necessary, the Windows New Hardware Wizard will guide you through the rest of the process. Follow the instructions displayed.

4 When the PCI Memory controller installation is complete, another Found New Hardware wizard may start for a SCSI/RAID Controller. Insert the Adaptec CD into the CD-ROM drive. Select the your CD-ROM drive, then click **Next**.

Upgrading a Windows NT System

> **Note:** If you have already installed an Adaptec controller into your system and want to change drivers, refer to the *Installation Guide* for your controller.

To upgrade an existing Windows NT 4.0 system and also add a SCSI RAID controller, see the *Installation Guide* for your controller.

Novell NetWare

> **Note:** The most recent NetWare Support Pack will have the Novell I_2O drivers. These drivers might be newer than the ones from Adaptec but have not been fully tested for compatibility with Adaptec controllers.

Adaptec drivers for NetWare are included on the CD-ROM. The drivers are located in the \packages\netware subdirectory. Copy the appropriate files to a floppy disk and follow the NetWare installation procedure. The NetWare package also includes a utility that installs Storage Manger Pro for NetWare or the modules which allow you to

monitor and configure a NetWare server using Storage Manager on a remote client workstation.

> **Note:** To install an Adaptec SCSI RAID controller, as either the booting or secondary controller, and remote communication services for NetWare 4.11, 4.2 and 5.x servers please follow the procedures in the *Installation Guide* for your controller. See the readme.txt file on the CD for current information about NetWare support.

After you have installed the I₂O drivers you can now use the normal NetWare procedures for modifying disk partitions, hot fixes, or volume maintenance. You can use SMOR, the Command Line Interface (CLI), or Storage Manager Pro to create or modify disk arrays or add hot spare drives locally. If you install remote communication support for Storage Manager, you can use Storage Manager from a client workstation to manage the storage subsystem.

Linux

Adaptec drivers for Red Hat Linux 6.1, 6.2 are included on the CD. These files are in the \packages\linux subdirectory. The Linux version of Storage Manager is included in the \packages\linux\apps\sm subdirectory. The driver files are available in compressed format and as disk images. Expand the files or create a disk from the disk images.

Note: The Adaptec drivers are for Linux kernel versions 2.2.12-20 and 2.2.14-5.0. If your kernel has been updated by a patch, the drivers might not function. In this case, contact your technical support representative for assistance.

Adaptec controller and RAID management for Linux is available through the Adaptec SMOR utility, CLI, and Storage Manager.

1 Install the Adaptec controllers and storage devices according to the instructions in Controller Installation. For more information, see the *Installation Guide* for your controller.

2 If you want to install Linux on a disk array, use the bootable CD installation utility, SMOR or CLI to configure any disk arrays before beginning the operating system installation.

Note: Any partitions created on disks that are not part of an array will be unavailable if you subsequently use the disk in an RAID configuration.

3 Boot the system from the Adaptec Linux boot disk and continue with the Linux installation according to the instructions in the *Installation Guide*.

Installing SCO UNIX 3.2V4.2 or OpenServer 5

Drivers for SCO UNIX 3.2V4.2 and SCO OpenServer 5 are included on the CD. The CD also contains a Motif version of Adaptec Storage Manager for each version of SCO UNIX. You can create floppy disks by using the Adaptec install utility which starts when the CD is used as a boot media.

> **Note:** When assigning numbers to controllers, SCO starts with 0. Storage Manager numbers controllers starting with 1.
>
> Storage Manager for Motif will not display colors correctly if your video display adapter is set to display more than 256 colors.

This section describes the steps to install SCO UNIX 3.2V4.2, ODT 3.x, and SCO OpenServer 5 on a single drive or array group. If you are installing from tape or CD-ROM, SCO UNIX 3.2V4.2 expects to find the tape at Controller 0, SCSI ID 2, LUN 0 and the CD-ROM at Controller 0, SCSI ID 5, LUN 0. SCO OpenServer 5 will locate a tape drive or CD-ROM at any valid SCSI address.

To install SCO, use the following steps:

1 If installing SCO UNIX 3.2V4.2 or ODT 3.0, boot the system with disk 1. Enter the following string at the boot prompt:

```
defbootstr link=dpti4
```

If you are installing SCO UNIX 3.2V5.0.x, boot the system with the Boot Disk. Enter the following string at the boot prompt:

```
defbootstr ahslink=dpti5
```

For SCO UNIX 3.2V5.04 or later the command is:

```
defbootstr link=dpti5
```

2 When prompted for the SCO BTLD disk (Adaptec volume), insert disk 1 into the floppy drive.

3 Insert the N1 or Boot disk again when prompted.

4 If installing SCO 3.2V4.2 or ODT3.0, insert the N2 disk when prompted. During the Hardware Roster, the following line should appear:

```
% adapter type=dpti ha=0 id=7 channel=0, PCI
```

If you are installing SCO UNIX 3.2V5.0.x., during the Hardware Roster, the following line should appear:

```
% adapter type=dpti ha=0 id=7, PCI
```

5 Continue the installation according to the SCO documentation.

Adding to SCO UNIX 3.2V4.2 or OpenServer 5

When adding an Adaptec controller to an existing SCO UNIX configuration, perform the following steps.

1 Install the Adaptec controller.

2 Boot SCO UNIX.

3 After SCO UNIX has booted, place the Adaptec SCO driver disk in the floppy drive.

4 Run the installpkg utility.

5 SCO UNIX will read the disk and prompt you to enter the package name to be installed. Enter dpti4 for SCO UNIX 3.2V4.2 or ODT 3.0, and dpti5 for SCO OpenServer 5.

6 Rebuild the kernel after the package is installed.

7 Shutdown and reboot the system to install the new kernel and add devices on the controller.

SCO UNIX Ware 7

1 Install the Adaptec controllers and storage devices. For more information, see the *Installation Guide* for your controller.

2 Obtain the latest I$_2$O supplement for UnixWare 7 from SCO (it should be PTF7067E or higher).

3 Copy or download the ptf file to the /tmp directory. Use the pkgadd utility to install the I$_2$O supplement by entering the command:

```
pkgadd -d /tmp/ptf7067e.s
```

4 Follow the on-screen prompts to install the SCO UnixWare I$_2$O supplement.

5 Shutdown and reboot the system.

> **Note:** When you reboot several warning messages may appear and scroll off the screen quickly. These will not occur after diskadd is run and can be ignored.

6 Use the diskadd utility to add drives or arrays that are attached to a SmartRAID V or SCSI RAID controller.

Run the sdiconfig –l utility in a terminal window. This will list all controllers recognized by the operating system and any attached devices. Use this listing to determine the proper ID to use for the diskadd utility.

The diskadd command to add devices on a secondary controller is:

```
diskadd cCbBtTdD
```

To install Storage Manager for UnixWare 7

1 Mount the CD-ROM

`mount -r -F cdfs /dev/cdrom/cdrom1/mnt`

2 Install the package from the CD using the following command

`pkgadd -d /mnt/packages/UnixWare/apps/sm/DPTSM.PKG`

3 Follow the prompts to complete the installation.

Installing Adaptec Storage Management Software

Note: If you have DPT Storage Manager software on your system, uninstall the DPT software before you install Adaptec Storage Manager.

Adaptec SCSI RAID controllers include four software tools to manage your storage subsystem.

Storage Manager Pro is a Java application that provides configuration and array management functions with security features that protect your array configurations from unauthorized changes.

Storage Manager is a multi platform tool that can configure the controller and disk subsystem. Both applications can operate on a local host or from a remote client and provide broadcast event notification.

CLI is a command line utility that provides the same functions as Storage Manager Pro and Storage Manager in an environment where a GUI is not available.

Storage Manager on ROM (SMOR) is a built-in utility that is part of the BIOS code on the controller. You can start SMOR by pressing **Ctrl+A** during the I_2O BIOS startup.

Storage Manager Pro Platform Compatibility

You need a system with the following minimum hardware:

- Pentium or equivalent CPU (200 MHz or faster).

- 64 MB RAM (128MB for NetWare)

- 20 MB of available disk space for the software plus 40 MB of available space for temp files during installation process.)

- CD-ROM drive

- TCP/IP stack

- Remote management features require a network card with configured to use the TCP/IP protocol

- Graphics card and monitor capable of 800x600 resolution and 256 colors

- Mouse or other pointing device

Storage Manager Pro requires one of the following operating systems:

- ■ Windows 2000, NT 4, or 95/98
- ■ NetWare 4.2 and 5.x

NetWare 4.2 requires Support Pack 8a and Java Virtual Machine (JVM) 1.1.7 (dated April 11, 2000 or later). This Java package is available from http://developer.novell.com. Install the Support Pack before installing the JVM.

Storage Manager Platform Compatibility

- ■ Microsoft Windows 2000
- ■ SCO UNIX 3.2v4.2 and OpenServer 5
- ■ Microsoft Windows NT 4.0
- ■ SCO UnixWare 7.x
- ■ Microsoft Windows 95/98
- ■ Red Hat Linux 6.x
- ■ NetWare* 4.x and 5.0

*Remote communication client only.

The Adaptec Storage Manager for Windows install utility has three options:

- ■ Typical
- ■ Compact
- ■ Custom

Select **Typical** if you only need the to install the driver and supporting modules for Storage Manager Pro. Otherwise, select **Custom** to install additional components including the Storage Manager application.

> **Note:** Removing Storage Manager will disable support for Storage Manager Pro. You will have to uninstall both packages and reinstall them to use Storage Manager Pro.

To remove Adaptec Storage Manager

1 Select **Install Adaptec Storage Manager** from the Storage Manager group on the Start menu.

2 Select **Remove** when the dialog appears.

3 Click on **Next** to continue.

4 Confirm file deletion by clicking **OK**.

The Shared File Detection message may be displayed. If this message appears, select **No** (**Yes** may cause your system to hang at restart.)

5 The Maintenance Complete window will appear when the operation is complete. Click **Finish** to exit.

Using Storage Manager on ROM (SMOR)

To configure your hardware and create disk arrays when Storage Manager is not available, run Storage Manager on ROM (SMOR) during the system boot. This is especially useful for a new system where you need to create disk arrays before you install the operating system.

After configuration of your storage subsystem, install your operating system according to the procedures in the *SCSI RAID Installation Guide* for your controller. For access to all of the advanced features of your controller, install the version of Storage Manager Pro or Storage Manager supplied for your operating system.

Follow these steps to run SMOR and configure a new system:

1 Press **Ctrl+A** when the Adaptec I$_2$O BIOS message appears during boot to start SMOR.

2 Inspect the hardware configuration as shown by SMOR.

   a Verify that all peripheral devices and controllers are shown. If any devices are missing from the display, exit SMOR and check your hardware connections.

   b View the Information window for each controller to verify that all installed expansion and memory modules are shown. Note the IRQ and Address displayed in the Configuration tab. The

IRQ and Address values may be required during installation of your operating system.

3 Create disk arrays.

Array Groups can be created or modified at any time after system installation. However, if the boot device will be an array, that array must be created and built before the operating system is installed.

4 Exit SMOR when you are finished with the configuration tasks.

Arrays that were created or modified start building at this time. For large arrays, this process may take several hours. You can perform other activities on the system while the build operation continues.

The array groups being built can be accessed while the build is in progress. However, access time will be slower until the build is complete.

If you exit SMOR and you want to monitor the progress of the build operation, you can use Storage Manger Pro or Storage Manager to monitor the progress of the build. For additional information see the *Storage Management Software User's Guide*.

The CD-ROM boot utility can create a bootable floppy disk that will run SMOR. This disk boots DOS and automatically starts SMOR. This lets you perform configuration tasks if you are unable to start SMOR from the SCSI RAID controller using **Ctrl+A**.