# USER'S GUIDE

## MegaRAID®
## Device Driver
## Installation

**February 2005**

*Version 1.2*

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**http://www.lsilogic.com/contacts/index.html**

# Preface

This manual is the primary reference for the operating system drivers provided with the LSI Logic MegaRAID® devices. It describes the drivers for all supported operating systems and explains how to install them.

**Audience**

This document is intended for people installing an operating system driver for a MegaRAID controller.

**Organization**

This document has the following chapters:

- Chapter 1, **Overview**, describes the MegaRAID controller and lists the operating systems for which drivers are provided.

- Chapter 2, **Windows NT 4.0 Driver Installation** provides installation instructions for Windows NT.

- Chapter 3, **Windows 2000 Driver Installation** provides installation instructions for Windows 2000.

- Chapter 4, **Windows XP Driver Installation** provides installation instructions for Windows XP.

- Chapter 5, **Windows Server 2003 Driver Installation** provides installation instructions for Windows Server 2003.

- Chapter 6, **Novell NetWare Driver Installation** provides installation instructions for Novell NetWare.

- Chapter 7, **Red Hat Linux 3 and 4 Driver Installation** provides installation instructions for Red Hat Linux.

- Chapter 8, **SuSE Linux 8.2 Driver Installation** provides installation instructions for SuSE Linux.

- Chapter 9, **SuSE Linux Enterprise Server (SLES) 9 Driver Installation** provides installation instructions for SLES Linux.

- Chapter 10, **SCO UnixWare 7 Driver Installation** provides installation instructions for UnixWare.

- Chapter 11, **SCO OpenServer Driver Installation** provides installation instructions for SCO.

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## MegaRAID System Installation Sequences and Document Organization

The following table outlines the installation, configuration, and management sequences for a MegaRAID Serial ATA system. Each sequence consists of a series of steps and operations that the reference manual explains. LSI Logic recommends performing the sequences in the order listed when you install and configure your Serial ATA system.

| Sequence | Task | Reference Manual |
|:---:|---|---|
| 1 | Understand RAID system theory and operation. | |
| 2 | Install the MegaRAID Serial ATA storage adapter and the related hardware. | *MegaRAID SATA150 Storage Adapters User's Guide MegaRAID SATA300 Storage Adapters User's Guide* |
| 3 | Configure the physical arrays and logical devices using either the MegaRAID Configuration Utility (CU) or the WebBIOS CU. | *MegaRAID Configuration Software User's Guide* |
| 4 | Install the MegaRAID device drivers. | *MegaRAID Device Driver Installation User's Guide* |
| 5 | Manage, monitor, and reconfigure the RAID array using either the MegaRAID Manager tool or the Power Console Plus™ tool. Each tool runs under an operating system and can manage the RAID array while the system is operating. | *MegaRAID Configuration Software User's Guide* |

**Related Publications**

*MegaRAID 320 Storage Adapters User's Guide,*
Document Number: DB15-000260-05

This document explains how to install your MegaRAID SCSI storage adapter in the host system. In addition, it provides the electrical and physical specifications, jumper definitions, and connector locations for the storage adapter.

*MegaRAID SATA150 Storage Adapters User's Guide,*
Document Number: DB15-000272-04

This document explains how to install your MegaRAID SATA150 storage adapter in the host system. In addition, it provides the electrical and physical specifications, jumper definitions, and connector locations for the storage adapter.

*MegaRAID SATA300 Storage Adapters User's Guide,*
Document Number: DB15-000311-00

This document explains how to install your MegaRAID SATA300 storage adapter in the host system. In addition, it provides the electrical and physical specifications, jumper definitions, and connector locations for the storage adapter.

*MegaRAID Configuration Software User's Guide,*
Document Number: DB15-000269-01

This document explains the various RAID system configuration, monitoring, and management tools that MegaRAID provides. This document provides step-by-step instructions for using the MegaRAID CU and WebBIOS CU BIOS-based utilities, as well as the MegaRAID Manager and Power Console Plus OS-based tools. The information in this document is independent of the back-end bus and applies to both MegaRAID SCSI storage adapters and Serial ATA storage adapters.

## Conventions Used in This Manual

| Notation | Example | Meaning and Use |
|---|---|---|
| → | Start → Programs. | Used to indicate a series of selections in a GUI. |
| < > | <F6><br><N><br><Enter> | Key presses are enclosed in angle brackets. |
| Courier typeface | `.nwk` file | Names of commands, directories, filenames, and on-screen text are shown in Courier typeface. |
| bold typeface | **fd1sp** | In a command line, keywords are shown in bold, non-italic typeface. Enter them exactly as shown. |
| italics | *module* | In command lines and names, italics indicate user variables. Italicized text must be replaced with appropriate user-specified items. Enter items of the type called for, using lower case. |
| italic underscore | *full_pathname* | When an underscore appears in an italicized string, enter a user-supplied item of the type called for with no spaces. |
| initial capital letters | Undo<br>Edit<br>Apply | Names of menu commands, options, check buttons, text buttons, options buttons, text boxes, list boxes, etc., are shown in text with initial capital lettering to avoid misreading. These elements may appear on your screen in all lower case. |
| brackets | [*version*] | You may, but need not, select one item enclosed within brackets. Do not enter the brackets. |
| ellipses | option... | In command formats, elements preceding ellipses may be repeated any number of times. Do not enter the ellipses. In menu items, if an ellipsis appears in an item, clicking that item brings up a dialog box. |

## Revision History

| Data | Version | Changes |
|------|---------|---------|
| February 2002 | Version 1.0 | Initial release. |
| July 2003 | Version 1.1 | Added chapters for SuSE 8.2 and 9.1, SuSE Linux Enterprise Server (SLES) 8 and 9, SCO UnixWare 7, and SCO OpenServer 5. |
| February 2005 | Version 1.2 | Added a note about operating system support in Chapters 1 and 2. Added headings for Driver Functions, Driver Updates, and Technical Support in Chapter 1. Updated driver filenames in Chapter 1. Updated driver installation procedures in several chapters. |

## Technical Support

LSI Logic provides technical support only for LSI Logic products purchased directly from LSI Logic or from an LSI Logic-authorized reseller. If you need help installing, configuring, or running your MegaRAID controller, contact LSI Logic Technical Support at:

- If you purchased the MegaRAID controller from LSI Logic or from a certified LSI Logic reseller, contact LSI Logic Technical Support at support@lsil.com, 1-800-633-4545, or (678) 728-1250. Please be prepared to specify the 10-digit number preceded by the letter "E".

    In Europe, you can contact LSI Logic Technical Support at eurosupport@lsil.com, +44.1344.413.441 (English), or +49.89.45833.338 (Deutsch).

- If the MegaRAID controller was installed as part of a system manufactured by a company other than LSI Logic, or if you purchased an LSI Logic product from an unauthorized reseller, call the technical support department of the computer manufacturer or the unauthorized reseller. LSI Logic does not provide direct technical support in these cases.

*Preface*

# Contents

**Tables**

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# Chapter 1
# Overview

This chapter provides an overview of the drivers for the MegaRAID controllers. It consists of the following sections:

- Section 1.1, "Driver Description"
- Section 1.2, "Driver Names"

Subsequent chapters in this manual provide detailed installation instructions for each operating system. Use the latest updates provided by the operating system manufacturer and review the readme file that accompanies the driver for any updated information.

## 1.1  Driver Description

You can install the MegaRAID controller in any IBM AT-compatible computer that has a PCI local bus. The controller can run under MS-DOS or any DOS-compatible operating system using the standard AT BIOS INT 13h hard disk drive interface.

To use the controller with other operating systems, you must install software drivers. LSI Logic provides software drivers for the following operating systems:

- MS-DOS version 6.xx or later
- Microsoft Windows NT 4.0, 2000, XP, and Server 2003
- Novell NetWare versions 5.1, 6.0, and 6.5
- Red Hat Linux versions 9.0, AS 2.1, and AS 3.0
- SuSE Linux versions 8.2 and 9.1
- SuSE Linux Enterprise Server 8 and 9

- SCO OpenServer

- SCO UnixWare 7

  Note: MegaRAID 320-1 and 320-2 adapters support Windows NT 4.0, but MegaRAID 320-2X, 320-4X, SATA150-2, 150-4, and 150-6 adapters do not.

## 1.1.1 Driver Functions

MegaRAID provides separate drivers for MegaRAID SCSI controllers and MegaRAID Serial ATA controllers. The MegaRAID Ultra320 SCSI driver supports 320 Mbyte/s data transfer using the Ultra320 SCSI protocol. The MegaRAID Serial ATA driver supports 150 Mbyte/s data transfer using the Serial ATA protocol. Both drivers do the following:

- Support the PCI 2.2 protocol

- Support multiple RAID Storage Adapters (RSAs)

- Provide the ability to see newly configured logical drivers in Disk Administrator without rebooting the system

- Allow deletion of the last logical drive created using Power Console Plus (see the *MegaRAID Configuration Software User's Guide* for more information)

- Support use of the remaining array capacity by Power Console Plus

## 1.1.2 Driver Updates

Because LSI Logic regularly updates device drivers, there might be a feature added to your driver that is not included in the most recent manual publication. If you have a question about a feature, consult the readme file that accompanies the driver, or contact your MegaRAID support representative. Be sure to use the latest Service Packs provided by the operating system manufacturer.

You can download the latest drivers and software on the LSI Logic web site: http://www.lsilogic.com. Access the download center and follow the steps to download the driver.

### 1.1.3 Technical Support

For questions or to obtain a driver for an operating system other than the ones previously listed, contact the LSI Logic Technical Support team at:

- support@lsil.com
- 1-678-728-1250 or 800-633-4545 option #3
- http://www.lsilogic.com.

In Europe, you can contact the LSI Logic Technical Support team at:

- eurosupport@lsil.com
- +44.1344.413.441 (English) or +49.89.45833.338 (Deutsch)

## 1.2 Driver Names

Table 1.1 lists the device driver files for MegaRAID controllers. The driver files are available on the Universal Driver Suite CD that accompanied your MegaRAID controller. LSI Logic updates the MegaRAID device drivers frequently. To ensure you have the current version of this driver, download the driver from the LSI Logic web site: http://www.lsilogic.com. See the readme file that accompanies the driver for any updated information.

To make the driver diskette, extract the files from the Universal Driver Suite CD to a blank floppy diskette, or download the driver files from the LSI Logic web page and extract them to an empty floppy diskette. Label the diskette as the MegaRAID driver diskette for the given operating system.

**Table 1.1      MegaRAID Device Driver Files**

| Operating System | SCSI Driver Filenames | Installation Reference |
|---|---|---|
| DOS | `Megarcdr.SYS`, `MEGACONF.EXE` (DOS utility), `MEGASPI.SYS` | – |
| Windows 2000 | `mraid2k.cat`, `MRAID2K.sys`, `NODEV.INF`, `OEMSETUP.INF`, `TXTSETUP.OEM` | Chapter 3 |
| Windows XP | `Mraid35x.sys`, `NODEV.INF`, `OEMSETUP.INF`, `TXTSETUP.OEM` | Chapter 4 |
| Windows Server 2003 | `Mraid35x.sys`, `NODEV.INF`, `OEMSETUP.INF`, `TXTSETUP.OEM` | Chapter 5 |
| Novell NetWare | `MEGA4_XX.DDI`, `MEGA4_XX.HAM`, `MEGAMMIO.NLM`, `MEGAMON.NLM`, `MEGAMGR.NLM` | Chapter 6 |
| Red Hat Linux 3 | `megaraid2.o` | Chapter 7 |
| Red Hat Linux 4 | `megaraid_mm.ko`, `megaraid_mbox.ko` | |
| SuSE Linux 8.2 | `megaraid2.o` | Chapter 8 |
| SuSE Linux 9.1 | `megaraid_mm.ko`, `megaraid_mbox.ko` | – |
| SuSE Linux Enterprise Server 8 | `megaraid2.o` | – |
| SuSE Linux Enterprise Server 9 | `megaraid_mm.ko`, `megaraid_mbox.ko` | Chapter 9 |
| SCO UnixWare 7 | a Host Board Adapter (HBA) package that contains `mega` (HBA driver), `amirdmon` (monitor), and `megamgr` (configurator) | Chapter 10 |
| SCO OpenServer 5 | an HBA package that contains `mega` (HBA driver), `amirdmon` (monitor), and `megamgr` (configurator) | Chapter 11 |

# Chapter 2
# Windows NT 4.0 Driver Installation

This chapter describes the installation of the Windows NT 4.0 driver and consists of the following sections:

- Section 2.1, "New Windows NT 4.0 System Driver Installation"

- Section 2.2, "Existing Windows NT 4.0 System Driver Installation"

  Note:   MegaRAID 320-1 and 320-2 adapters support Windows NT 4.0, but MegaRAID 320-2X, 320-4X, SATA150-2, 150-4, and 150-6 adapters do not.

## 2.1   New Windows NT 4.0 System Driver Installation

Perform the following steps to install the MegaRAID device driver in a new Window NT 4.0 system. Windows NT 4.0 automatically adds the driver to the registry and copies the driver to the appropriate directory.

Step 1.   Start the Windows NT 4.0 installation by booting from the Windows NT 4.0 CD-ROM.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2.   Press <F6> when the screen displays:

```
"Windows NT Setup."
```

  Note:   You must press <F6> for the system to recognize the new driver when the screen changes from black to blue.

Step 3.   Select <S> to specify an additional device when the screen displays:

```
"Setup could not determine the type of one or more
mass storage devices..."
```

Note: If this screen does not display as the first user input, then pressing <F6> was not recognized by the setup program. Reboot the system, and return to step 2.

Step 4. Select <Other>.

The system prompts for the driver diskette.

Step 5. Insert the MegaRAID driver diskette in the floppy drive (A:) and press <Enter>.

Step 6. Select the MegaRAID adapter from the menu by using the arrow key to highlight it, then press <Enter>.

Step 7. Follow the Microsoft Windows NT 4.0 installation procedure.

## 2.2  Existing Windows NT 4.0 System Driver Installation

Perform the following steps to install or update the MegaRAID Driver in an existing Windows NT installation:

Step 1. Click the Start button.

Step 2. Select Control Panel → SCSI Adapter.

Step 3. Select Driver → Add/Remove SCSI Adapter.

Step 4. Click the Have Disk button.

Step 5. Insert the Universal Driver Suite CD, which contains the MegaRAID Windows NT driver, or the driver diskette that you created from the LSI Logic web site.

Step 6. If you are using the Universal Driver Suite CD, browse the CD to find the `/MS Windows/Driver/Nt40` directory.

Step 7. Select the driver you want to install, and click OK.

Step 8. When prompted, restart the system for the changes to take effect.

# Chapter 3
# Windows 2000 Driver Installation

This chapter describes the installation of the Windows 2000 driver and consists of the following sections:

- Section 3.1, "New Windows 2000 System Driver Installation"
- Section 3.2, "Existing Windows 2000 System Driver Installation"

## 3.1 New Windows 2000 System Driver Installation

Perform the following steps to install the MegaRAID device driver in a new Windows 2000 system. Windows 2000 automatically adds the driver to the registry and copies the driver to the appropriate directory.

Step 1. Start the Windows 2000 installation by booting from the Windows 2000 CD-ROM.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2. Press <F6> when the following displays at the bottom of the screen:

```
"Press F6 if you need..."
```

Note: You must press <F6> for the system to recognize the new driver.

Step 3. Select <S> to specify an additional device when the screen displays:

```
"Setup could not determine the type of one or more
mass storage devices..."
```

The system prompts for the manufacturer-supplied hardware support disk.

Note: If this screen does not display as the first user input, then pressing <F6> was not recognized by the setup program. Reboot the system, and return to step 2.

Step 4.  Insert the driver diskette containing the Windows 2000 device driver, and press <Enter>.

Step 5.  Select the Windows 2000 adapter from the menu by using the arrow key to highlight it and pressing <Enter>.

Step 6.  Press <Enter> again to proceed.

Step 7.  Return to the Windows 2000 Setup screen.

Windows displays a "Welcome to Setup" window.

Step 8.  Press <Enter> to continue.

Step 9.  Follow the Microsoft Windows 2000 installation procedure by pressing <C> to continue.

Step 10. Repeat this process for all the adapters on your system.

## 3.2  Existing Windows 2000 System Driver Installation

Perform the following steps to install or update the MegaRAID device driver in an existing Windows 2000 system:

Step 1.  Boot Windows 2000.

The Found New Hardware Wizard begins.

Step 2.  Click the Next button.

Step 3.  Insert the driver diskette into the A:\ drive.

Step 4.  Click the Search for a Suitable Driver... button, and click Next.

Step 5.  Click the Next button.

In some cases, a message displays saying that this driver is not digitally signed. This message informs you that a nonsigned driver is being installed. If this message displays, click Continue Anyway.

Step 6.  Select Floppy only.

Step 7.  Click the Next button in the Driver Files Search Results window.

Step 8. Click the Finish button to complete the driver installation.

Step 9. Repeat this process for all the adapters on your system.

# Chapter 4
# Windows XP Driver Installation

This chapter describes the installation of the Windows XP driver and consists of the following sections:

- Section 4.1, "New Windows XP System Driver Installation"
- Section 4.2, "Existing Windows XP System Driver Installation"

## 4.1 New Windows XP System Driver Installation

Perform the following steps to install the MegaRAID driver in a new Windows XP system. Windows XP automatically adds the driver to the registry and copies the driver to the appropriate directory.

Step 1. Start the Windows XP installation by booting from the Windows XP CD-ROM.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2. Press <F6> when the following displays at the bottom of the screen:

`"Press F6 if you need to install..."`

Note: You must press <F6> for the system to recognize the new driver.

Step 3. Select <S> to specify an additional device when the screen displays:

`"Setup could not determine the type..."`

The system prompts for the manufacturer-supplied hardware support disk.

> Note: If this screen does not display as the first user input, then the <F6> key press was not recognized by the setup program. Reboot the system, and return to step 2.

Step 4.  Insert the Window XP driver diskette, and press <Enter>.

Step 5.  Select the appropriate Windows XP adapter from the menu by using the arrow key to highlight it, and then press <Enter> to proceed.

Step 6.  Follow the Windows XP installation procedure.

## 4.2    Existing Windows XP System Driver Installation

Perform the following steps to install or upgrade the MegaRAID driver in an existing Window XP system:

Step 1.  Boot Windows XP.

The Found New Hardware Wizard appears. The information in the first page of this window identifies the controller and requests the driver diskette.

Step 2.  Insert the Windows XP driver diskette into the floppy drive.

Step 3.  Select the Install Software Automatically option.

Step 4.  Click the Next button.

In some cases, a message displays saying that this driver is not digitally signed. This message informs you that a nonsigned driver is being installed. If this message displays, click Continue Anyway.

Step 5.  The system loads the driver from the Windows XP driver diskette and copies the driver to the system disk.

The Found New Hardware Wizard screen appears and displays the message:

"The wizard has finished..."

Step 6.  Click the Finish button to complete the driver upgrade.

Step 7.  Repeat this process for additional adapters, if present.

# Chapter 5
# Windows Server 2003
# Driver Installation

This chapter describes the installation of the Windows Server 2003 driver and consists of the following sections:

- Section 5.1, "New Windows Server 2003 System Installation"
- Section 5.2, "Existing Windows Server 2003 System Installation"

## 5.1  New Windows Server 2003 System Installation

Perform the following steps to install the MegaRAID device driver in a new Windows Server 2003 system. Windows Server 2003 automatically adds the driver to the registry and copies the driver to the appropriate directory.

Step 1.  Start the Windows Server 2003 installation by booting from the Windows Server 2003 CD-ROM.

Step 2.  Press <F6> when the following displays at the bottom of the screen:

"Press F6 if you need to install..."

Note:  You must press <F6> for the system to recognize the new driver.

Step 3.  Select <S> to specify an additional device when the screen displays:

"Setup could not determine the type..."

The system prompts for the manufacturer-supplied hardware support disk.

Note:  If this screen does not display as the first user input, then the <F6> key press was not recognized by the setup program. Reboot the system, and return to step 2.

Step 4. Insert the Windows Server 2003 driver diskette, and press <Enter>.

Step 5. Select the appropriate Windows Server 2003 adapter from the menu by using the arrow key to highlight it, and press <Enter> to proceed.

Step 6. Follow the Windows Server 2003 installation procedure.

## 5.2 Existing Windows Server 2003 System Installation

Perform the following steps to install or upgrade the MegaRAID device driver in an existing Windows Server 2003 system:

Step 1. Boot Windows Server 2003.

The Found New Hardware Wizard appears. The information in the first page of this window identifies the SCSI controller and requests the driver diskette.

Step 2. Insert the driver diskette into the floppy drive.

Step 3. Select the Install Software Automatically option.

Step 4. Click Next.

In some cases, a message displays saying that this driver is not digitally signed. This message informs you that a nonsigned driver is being installed. If this message displays, click Continue Anyway.

Step 5. The system loads the driver from the Windows Server 2003 driver diskette and copies the driver to the system disk.

The Found New Hardware Wizard screen appears and displays the message:

`"The wizard has finished..."`

Step 6. Click the Finish button to complete the driver upgrade.

Step 7. Repeat this process for all the channels on your MegaRAID controller.

# Chapter 6
# Novell NetWare Driver Installation

This chapter provides installation instructions for the MegaRAID Novell NetWare driver and consists of the following sections:

- Section 6.1, "Novell NetWare Driver Files Description"
- Section 6.2, "New Novell NetWare System Driver Installation"
- Section 6.3, "Existing Novell NetWare System Driver Installation"

## 6.1 Novell NetWare Driver Files Description

The MegaRAID Novell NetWare driver and utilities support logical drives configured on the MegaRAID controller. This driver supports up to 12 MegaRAID controllers.

Important:  The logical drives configured on the host adapter are registered with the operating system as separate logical units.

Table 6.1 describes the MegaRAID Novell NetWare driver files.

**Table 6.1    MegaRAID Novell NetWare Driver Files Description**

| Filename | Description |
|----------|-------------|
| MEGA4_XX.HAM | This file is the MegaRAID host adapter module (HAM). This driver supports the NPA Diagnostics option by using the NWDIAG flag, which is specified on the command line when the driver loads. The driver is a re-entrant module. It registers one adapter when you issue the Novell NetWare LOAD command to load the driver. |
| MEGA4XX.DDI | This file is the device driver installation file. It is needed to install the MegaRAID HAM driver. |
| MEGAMMIO.NLM | This file is the Media Manager Interface module for the MEGA4_XX.HAM driver. |

**Table 6.1     MegaRAID Novell NetWare Driver Files Description (Cont.)**

| Filename | Description |
|----------|-------------|
| MEGAMGR.NLM | This file is the MegaRAID Configuration and Management utility. Do not unload this file using the UNLOAD console command. |
| MEGAMON.NLM | This file is the monitor program for Novell NetWare, which the MegaRAID Monitor uses to monitor and report events on the adapter. The event categories are Severe, Warning, and Information. The notification is broadcast to the supervisor, displayed locally on the console, or displayed remotely. |

All utilities and ASPI drivers expect the MegaRAID driver to pass the requests to the adapter. You must load the .HAM driver files first, so that it can load the .NLM files.

## 6.2   New Novell NetWare System Driver Installation

Follow the instructions in the *Novell NetWare Installation Guide* to install Novell NetWare in the server. Perform the following steps to install Novell NetWare using the MegaRAID controller as a primary adapter:

Step 1.   Boot from Novell NetWare.

Step 2.   Follow the instructions on the screen until you reach the Device Driver screen, which is used to modify drivers.

Step 3.   Select Modify, and press <Enter>.

Step 4.   Select Storage Adapters on the Storage Driver Support screen, and press <Enter>.

Step 5.   Delete any existing MegaRAID adapter listings.

Step 6.   Press <Insert> to add unlisted drivers.

Step 7.   Press <Insert> again.

A path displays.

Step 8.   Press <F3>.

Step 9.   Insert the driver diskette into the floppy drive, and press <Enter>.

The system finds the .HAM driver.

Note: Make sure the following components are available on the floppy diskette, as the driver requires these files when loading:

- `MEGAMMIO.NLM`
- `MEGAMON.NLM`
- `MEGAMGR.NLM`

Step 10. Press <Tab>.

Step 11. Select the Driver Summary screen, and press <Enter>.

Step 12. Continue the Novell NetWare installation procedure.

## 6.3 Existing Novell NetWare System Driver Installation

Perform the following steps to add the Novell NetWare driver to an existing installation:

Step 1. For Novell NetWare 5.1 and later, type at the root prompt:

nwconfig

and press <Enter>.

The Configuration Options screen displays.

Step 2. Select Drive Options, and press <Enter>.

A window displays.

Step 3. Select Configure Disk and Storage Device Options, and press <Enter>.

Step 4. Select one of the following options displayed in the window:

- Discover and Load an Additional Driver

  If you select Discover and Load an Additional Driver, the system discovers the extra unit. The system prompts you to select a driver from the list. Press <Insert> to insert the driver. This completes the procedure.

- Select an Additional Driver

    If you select Select an Additional Driver, the Select a Driver screen displays. Press <Insert>. Follow the instructions that appear.

    Insert a floppy diskette into the floppy drive, and press <Enter>.

    The system finds the driver and installs it.

# Chapter 7
# Red Hat Linux 3 and 4
# Driver Installation

This chapter describes the installation of the device driver in new Red Hat Linux 3 and 4 systems and the update to the Red Hat Linux driver on an existing Red Hat Linux system. It consists of the following sections:

- Section 7.1, "New Red Hat Linux System Driver Installation"
- Section 7.2, "Existing Red Hat Linux System Driver Installation"

Refer to the release notes that accompanied the driver for information on an existing Red Hat Linux system.

## 7.1   New Red Hat Linux System Driver Installation

Perform the following steps to install the MegaRAID device driver in a new Red Hat Linux system:

Step 1.   Create a driver diskette using the Linux driver image from the Universal Driver Suite CD.

Step 2.   Boot to CD-ROM with Disk 1.

Step 3.   Type:

```
linux dd
```

Step 4.   Insert the driver diskette.

The utility locates and loads the driver for your device.

Step 5.   Follow the Red Hat Linux installation procedure to complete the installation.

## 7.2    Existing Red Hat Linux System Driver Installation

Perform the following procedure to add the Red Hat Linux 4.0 driver to an existing installation:

Step 1.    Power-up the system.

The system will initialize hardware.

Step 2.    The system detects the controller and invokes Kudzu, the Red Hat Linux hardware configuration utility.

The following RAID controller is added to your system:

```
LSI Logic / Symbios Logic MegaRAID
```

You can select one of the following options:

- Configure the device.

- Ignore the device. No configuration will be added, but you will not be prompted if the device is detected on subsequent reboots.

- Do nothing. No configuration will be added, and the device will show up as new if it is detected on subsequent reboots.

Step 3.    Highlight the Configure tab, and press <Enter>.

The system configures the controller and installs the appropriate driver in the kernel.

Step 4.    The system boots and displays the devices connected or configured on the controller.

# Chapter 8
# SuSE Linux 8.2 Driver Installation

This chapter describes the installation of the device driver in new SuSE Linux 8.2 systems. Refer to the release notes that accompanied the driver for information on updating the SuSE Linux driver on an existing SuSE Linux system.

Perform the following steps to install the driver:

Step 1. Boot the server with the SuSE CD-ROM Disk 1.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2. At the first screen, immediately press <Alt>.

Step 3. Put the driver update diskette in the drive bay, and install normally.

The installation process should pick up the new driver from the floppy diskette.

Step 4. Switch to console 4 to verify the correct driver.

Note: United Linux has install issues in some Dell servers. While the MegaRAID driver is being installed, press <Alt><F4> to switch to console 4. If there are error messages, the ACPI needs to be disabled in this server. To disable ACPI, reboot the machine with CD 1, and perform steps 1 and 2 above. Next, type the following kernel parameters:

`acpi=off`

and install normally.

# Chapter 9
# SuSE Linux Enterprise Server (SLES) 9 Driver Installation

This chapter describes how to install the SuSE Linux Enterprise Server (SLES) 9.0 driver in the RAID-configured drives. It consists of the following sections:

- Section 9.1, "New SuSE SLES Linux System Driver Installation"
- Section 9.2, "SuSE SLES 9 Existing Driver Installation"

## 9.1 New SuSE SLES Linux System Driver Installation

Perform the following steps to install the MegaRAID device driver in a new SuSE SLES Linux system:

Step 1. Boot the server with the SLES CD-ROM Disk 1.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2. At the first screen, immediately press <Alt>.

Step 3. Put the driver update diskette in the drive bay, and install normally.

The installation process should pick up the new driver from the floppy diskette.

Step 4. Switch to console 4 to verify the correct driver.

Note: United Linux has install issues in some Dell servers. While the MegaRAID driver is being installed, press <Alt><F4> to switch to console 4. If there are error messages, the ACPI needs to be disabled in this server. To disable ACPI, reboot

the machine with CD 1, and press <Alt> immediately. Next, type the following kernel parameters:

```
acpi=off
```

and install normally.

## 9.2 SuSE SLES 9 Existing Driver Installation

Perform the following steps to add the SuSE SLES 9 driver to an existing installation:

Step 1. Power-up the system.

Step 2. Log in to the system.

The system detects the controller and invokes the SuSE hardware detection utility.

Step 3. The following message displays:

```
New hardware found!

Would you like to configure this Storage Controller
"LSI MegaRAID U320-2 RAID Controller"?
```

Step 4. Click Yes.

The YaST Disk controller configuration window displays.

Step 5. Verify the "LSI MegaRAID U320-2 RAID controller" is listed.

Step 6. Select the driver module to use from the list.

Step 7. If you want to include the driver in the initrd, check the "Load module in initrd" box.

Step 8. Click Finish.

The system installs the driver for the controller in the kernel.

You can access all connected or configured devices on the controller.

# Chapter 10
# SCO UnixWare 7 Driver Installation

This chapter describes the installation of the SCO UnixWare 7 driver and consists of the following sections:

- Section 10.1, "New SCO UnixWare 7 System Driver Installation"
- Section 10.2, "Existing SCO UnixWare 7 System Driver Installation"

## 10.1  New SCO UnixWare 7 System Driver Installation

This procedure installs the MegaRAID device driver in a new SCO UnixWare 7 system. You must first prepare a driver diskette for MegaRAID, then install the driver.

Perform the following steps to create a driver diskette:

Step 1.   Download the file `rwfloppy.exe` from the LSI Logic web site, www.lsilogic.com, at Support → Download Center.

Step 2.   Under the heading Search by product category, select RAID Adapters, and press the arrow.

Step 3.   At the Download center, select your product from the drop-down menu, then select Drivers, and press Next.

Step 4.   Use the page that displays to download the driver for your product to your hard drive.

Step 5.   Run the file `rwfloppy.exe` and follow the prompt, as shown below:

```
Usage:
rwfloppy -[r/w] filename
    where
            -r to read from floppy drive A to filename
```

```
                    -w to write filename to floppy drive A
                    -? for Help
        Example:         Rwfloppy -r diskfile.dat
                         Rwfloppy -w diskfile.dat
```

Perform the following steps to install a SCO UnixWare 7 driver:

Step 1.   Boot from the SCO UnixWare 7 CD-ROM.

          There is a prompt asking whether you want to install from an
          HBA disk.

          The system BIOS must support booting from a CD-ROM. BIOS
          settings might require changes to allow CD-ROM booting. See
          your system documentation.

Step 2.   If you want to install from an HBA disk, insert the floppy driver
          diskette into drive A:.

          The driver packages load to the installation memory.

          After the kernel loads, but before it runs, the installation process
          prompts you to insert the appropriate floppy diskette for each
          BTLD package (mega) you specified.

Step 3.   Insert the driver diskette in drive A: to link the driver to the
          kernel.

## 10.2  Existing SCO UnixWare 7 System Driver Installation

Perform the following procedure if you are currently running SCO
UnixWare 7 and would like to access drives or arrays attached to the
MegaRAID controller:

Step 1.   Download the file rwfloppy.exe from the LSI Logic web site,
          www.lsilogic.com, at Support → Download Center.

Step 2.   Under the heading Search by product category, select RAID
          Adapters, and press the arrow.

Step 3.   At the Download center, select your product from the drop-
          down menu, then select Drivers, and press Next.

Step 4.   Use the page that displays to download the driver for your
          product to your hard drive.

Step 5.  Run the file `rwfloppy.exe` and follow the prompt, as shown below:

```
Usage:
rwfloppy -[r/w] filename
    where
            -r to read from floppy drive A to filename
            -w to write filename to floppy drive A
            -? for Help
Example:        Rwfloppy -r diskfile.dat
                Rwfloppy -w diskfile.dat
```

Perform the following steps to add a SCO UnixWare 7 driver to an existing installation:

Step 1.  Insert the floppy diskette into the A: drive and type:

```
#pkgadd -d diskette1
```

You are prompted for the name of the packages to load.

```
Select package(s) you wish to process ("all" to
process all packages).
```

Step 2.  Type:

```
mega
```

where `mega` is the name of the BTLD packages to be linked to the loaded system kernel. A message confirms that the installation of `mega` was successful.

After the driver package is installed, the driver needs to link to the kernel.

Step 3.  Enter the following command:

```
# /etc/conf/bin/idbuild -M mega
```

Step 4.  Select <Y> (yes) at the following prompts:

```
Do you want this kernel to boot by default? (y/n)
Do you want the kernel environment rebuilt? (y/n)
```

Step 5.  Reboot the server.

*SCO UnixWare 7 Driver Installation*

# Chapter 11
# SCO OpenServer
# Driver Installation

This chapter describes the installation of the SCO OpenServer driver and consists of the following sections:

- Section 11.1, "New SCO OpenServer System Driver Installation"

- Section 11.2, "Existing SCO OpenServer System Driver Installation"

## 11.1  New SCO OpenServer System Driver Installation

This procedure installs the MegaRAID device driver in a new SCO OpenServer system. You must first prepare a driver diskette for MegaRAID, then install the driver.

Perform the following steps to create a driver diskette:

Step 1.   Download the file `rwfloppy.exe` from the LSI Logic web site, www.lsilogic.com, at Support → Download Center.

Step 2.   Under the heading Search by product category, select RAID Adapters, and press the arrow.

Step 3.   At the Download center, select your product from the drop-down menu, then select Drivers, and press Next.

Step 4.   Use the page that displays to download the driver for your product to your hard drive.

Step 5.   Run the file `rwfloppy.exe` and follow the prompt, as shown below:

```
Usage:
rwfloppy -[r/w] filename
    where
          -r to read from floppy drive A to filename
```

```
                        -w to write filename to floppy drive A
                        -? for Help
            Example:        Rwfloppy -r diskfile.dat
                            Rwfloppy -w diskfile.dat
```

Perform the following steps to install the SCO OpenServer driver:

Step 1.  Boot from the SCO OpenServer CD-ROM.

The system BIOS must support booting from a CD-ROM. BIOS settings might require changes to allow CD-ROM booting. See your system documentation.

Step 2.  On boot prompt, type `link` after the prompt as shown below:

```
boot: link
```

You are prompted for the name of the packages to load.

```
What packages do you need loaded into the system,
or q to quit:
```

Step 3.  Type:

```
amird
```

where `amird` is the name of the BTLD packages to be linked to the loaded system kernel.

After the kernel loads, but before it runs, `link` prompts you to insert the appropriate floppy diskette for each BTLD package (`amird`) you specified.

Step 4.  Insert the driver diskette in drive A: to link the driver to the kernel.

## 11.2 Existing SCO OpenServer System Driver Installation

Perform the following procedure if you are currently running SCO OpenServer and would like to access drives or arrays attached to the MegaRAID controller:

Step 1.  Download the file `rwfloppy.exe` from the LSI Logic web site, www.lsilogic.com, at Support → Download Center.

Step 2.  Under the heading Search by product category, select RAID Adapters, and press the arrow.

Step 3.  At the Download center, select your product from the drop-down menu, then select Drivers, and press Next.

Step 4.  Use the page that displays to download the driver for your product to your hard drive.

Step 5.  Run the file `rwfloppy.exe` and follow the prompt, as shown below:

```
Usage:
rwfloppy -[r/w] filename
    where
            -r to read from floppy drive A to filename
            -w to write filename to floppy drive A
            -? for Help
Example:        Rwfloppy -r diskfile.dat
                Rwfloppy -w diskfile.dat
```

Perform the following steps to add the SCO OpenServer driver to an existing installation:

Step 1.  Insert the floppy diskette into the A: drive and type:

```
#installpkg
```

You are prompted for the name of the packages to load.

```
What packages do you need loaded into the system, or
q to quit:
```

Step 2.  Type:

```
amird
```

where `amird` is the name of the BTLD packages to be linked to the loaded system kernel.

After the driver package is installed, the driver needs to link to the kernel.

Step 3.  Enter the following command:

```
# /etc/conf/bin/idbuild
```

Step 4.   Select <Y> (yes) at the following prompts:

```
Do you want this kernel to boot by default? (y/n)
Do you want the kernel environment rebuilt? (y/n)
```

Step 5.   Reboot the server.

# Index

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