



LSI 2008 SAS MegaRAID
Configuration Utility

USER'S MANUAL

Revision 1.0

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Preface

About This Manual

This manual is written for system integrators, PC technicians and knowledgeable PC users. It provides instructions on how to use the LSI™ 2008 MegaRAID® Configuration Utility to configure RAID settings for Supermicro motherboards.

Manual Organization

Chapter 1 Provides an overview on the LSI™ 2008 MegaRAID® Software Utility.

Chapter 2 provides an introduction to the LSI 2008 SAS MegaRAID Software Utility settings and how to run the LSI 2008 SAS MegaRAID Configuration Utility on the IR Mode.

Chapter 3 provides instructions on how to run the LSI 2008 SAS MegaRAID Configuration Utility on the IMR Mode.

Conventions Used in This Manual

Pay special attention to the following symbols for proper installation and to prevent damage to the system or injury to yourself.

 **Warning:** Important information given to prevent erroneous RAID configuration and to ensure proper system setup.

 **Note:** Additional information given to ensure correct RAID configuration setup.

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Chapter 1

Introduction

After you have installed hardware components, you must first configure LSI 2008 SAS MegaRAID settings before you install an operating system and other software drivers.



Note: If you do not wish to configure LSI Software RAID settings, please proceed with the OS installation. For OS installation instructions, refer to related documents posted on our website at www.supermicro.com.

1-1 Overview of the LSI 2008 SAS Controller

The LSI 2008 SAS Controller, which is based on the Fusion-MPT (Message Passing Technology) architecture, integrates the most advanced SAS and PCI-Express technologies to deliver a processor-based, cost-effective RAID management tool for mid-level servers that require high system availability and redundancy without full-featured RAID implementation. By providing Integrated RAID (IR) support at the hardware level, the LSI 2008 Controller frees up host processors for more critical operations while maximizing overall I/O performance.

In addition, the LSI 2008 Controller supports eight PCI-E lanes with transfer rates of up to 5.0 GT/s per lane for PCI-E 2.0, and of up to 2.5 GT/s for PCI-E x1. It also supports End-to-End CRC (ECRC) with Advanced Error Reporting (AER) in addition to the latest technologies in lane and polarity reversal, power management, hot-swap support, and legacy interrupt.

1-2 Introduction to the LSI Embedded MegaRAID Utility

The LSI Embedded MegaRAID Software Configuration Utility adds RAID functionality to enhance system efficiency and data security by supporting RAID 0, RAID 1, RAID 1E, RAID 10, RAID 5 and RAID 50 (via Supermicro's RAIDKey). RAID 0 (Integrated Striping) can greatly enhance hard disk I/O performance by striping data across multiple drives. RAID 1 (Integrated Mirroring)/RAID 1E (Integrated Mirroring Enhanced) allows data to be simultaneously written to multiple drives, increasing data integrity. RAID 10, combining RAID 0 and RAID1, provides superb system performance and system security. When used with an RAIDKey (AOC-IMRRAKEY-2008-LSI), the LSI MegaRAID Utility supports RAID 5 and RAID 50, which will implement block-level striping with parity data distributed across all disks, offering greater data redundancy at lower cost. By incorporating the LSI MegaRAID architecture into our product design, Supermicro offers the user with the benefits

of software RAID configuration without the high costs associated with hardware RAID applications.

The LSI Embedded MegaRAID Software Utility supports up to eight SAS or SATA ports, providing an efficient solution for data transfer, storage reliability and security.

 **Note:** For more information on RAIDKey, please refer to <http://www.supermicro.com/product>.

Features of the LSI 2008 Controller

The LSI SAS 2008 Controller supports the following features:

- Integrated RAID
 - RAID 0, RAID 1, RAID IE, and RAID 10 supported
 - RAID 5 and RAID 50 supported via the onboard RAIDKey
- PCI-Express to 8-Port SAS/SATA Controller with data rates of 5.0 GT/s for PCI-E 2.0, or 2.5 GT/s for PCI-E 1x
- High Performance
 - PowerPC 440 @ 533MHz
- 6Gb/s SAS Interface
 - 8-port SAS/SATA controller
 - 1.5 Gb/s, 3 Gb/s, and 6 Gb/s SAS/SATA data transfer rates supported
 - Spread Spectrum Clocking supported
 - SSP, SMP (Symmetric Multiple Processing), STP (Spanning Tree Protocol), and SATA (Serial-ATA) protocols supported
 - SAS and SATA devices supported
 - Narrow and wide ports supported
 - T-10 data protection
- PCI-Express 2.0

- PCI-E x8, x4, x1 with a transfer rate of up to 5.0 GT/s per lane, full duplex
- Lane and Polarity reversal
- End-to-End CRC (ECRC) and Advanced Error Reporting (AER) supported
- PCI-Express hot-swap
- Power Management Support
 - Sleep and Standby power mode support for SATA
 - Programmable SAS link power down
- Network Communication
 - I²C support for enclosure management and debugging
 - UART interface for debugging
- SFF-8485 (Serial_Link General Input/Output) Specification-compliant
- JTAG (Joint_Test_Action_Group IEEE 1149.1 Standard) support

Functions of the LSI MegaRAID Utility

- Support for BIOS Boot Specification (BBS) (if available in the system BIOS)
- Support for Interrupt 13 and Enhanced Disk Drive Specification
- Support for Enable/Disable BIOS Boot
- Support for Hot-plug and Hot Auto Rebuild (during a hot plug event and the physical drive is forced off-line)
- Support for up to 2 Terabyte logical drives

Drives supported by the LSI MegaRAID Utility

The following drive features are supported by the LSI MegaRAID Software utility:

- Support for RAID 0, RAID 1, RAID 10, RAID 5 and RAID 50 (via a RAIDKey)
- Online mirror rebuilding

- Online consistency checking
- Array system management
- Error logging and notification
- Automatic resume of rebuilding on restart
- Support for manual rebuilding
- Auto-configuration support of newly-added physical drive
- Support for global hotspare
- Array initialization support
- Logical drive available immediately after creation
- Stripe size of 64 Kb supported

1-3 RAID Modes Supported by the LSI 2008 SAS Controller

The LSI SAS/SATA 2008 Controllers supports IR (Integrated) Mode, IT (Initiator and Target) Mode, and the IMR Mode.

 **Note:** Different RAID modes require different firmware and drivers. Be sure to download the correct RAID mode driver before installing it to the OS. For firmware downloads and assistance, please contact Supermicro Technical Support at www.supermicro.com or Support@supermicro.com.

IR Mode Configuration

To create an IR RAID storage configuration, you will need to configure physical disk drives into arrays first. An array is a group of one to eight physical disks treated by a host computer as one large disk drive (logical drive). Only one RAID level can be assigned to an array.

- A RAID 0 array consists of one to eight physical drives.
- A RAID 1 array consists of two physical drives.
- A RAID 10 array consists of four, six or eight physical drives.



Warning: Do not use both SAS and SATA drives in the same array to avoid system malfunctioning and to decrease Mean Time Between Failures (MTBF).

To Activate IR Mode

You can activate the IR RAID mode by doing the following:

- Press any key in the BIOS setup.
- Press <CTRL> + <C> to activate the IR RAID mode.

IR RAID Level Overview

RAID 0 (Striping)

RAID 0 performs disk striping across all disk drives in an array. It does not provide data redundancy, but it offers the best RAID performance.

RAID 0 Requires 1~8 Disk Drives	
RAID 0 Example with 2 Disks	
Disk Drive A	Disk Drive B
Segment 1	Segment 2
Segment 3	Segment 4
Segment 5	Segment 6
Segment 7	Segment 8

RAID 1/RAID 1E (Mirroring/Enhanced Mirroring)

RAID 1 creates a duplicate copy of data by copying all data from one drive to another. It provides data redundancy, but it requires double data storage capacity.

RAID 1 Requires a minimum of 2 Disk Drives	
RAID 1 Example with 2 Disks	
Disk Drive A	Disk Drive B
Segment 1	Duplicate copy of Segment 1
Segment 2	Duplicate copy of Segment 2
Segment 3	Duplicate copy of Segment 3
Segment 4	Duplicate copy of Segment 4

RAID 10 (Striping + Mirroring)

RAID 10 combines RAID 0 and RAID 1 by first breaking down data into smaller segments and striping these segments to each RAID1 set. Each RAID 1 set, then duplicates its data to its mirrored drive.

RAID 10 provides the best RAID performance and best data security.

RAID 10 Requires 4, 6, or 8 Disk Drives			
RAID 10 Example with 4 Disk Drives			
Striping: Data Striping Across Drive A & Drive B			
Drive A		Drive B	
Segment 1		Segment 2	
Segment 3		Segment 4	
Segment 5		Segment 6	
Segment 7		Segment 8	
Mirroring: Copying Data from Drive A to Drive C		Mirroring: Copying Data from Drive B to Drive D	
Drive A	Drive C	Drive B	Drive D
Segment 1	Duplicate Copy of Segment1	Segment 2	Duplicate Copy of Segment2
Segment 3	Duplicate Copy of Segment3	Segment 4	Duplicate Copy of Segment4
Segment 5	Duplicate Copy of Segment5	Segment 6	Duplicate Copy of Segment6
Segment 7	Duplicate Copy of Segment7	Segment 8	Duplicate Copy of Segment8

IT Mode (Initiator and Target Mode)

This is a Non-RAID mode. To use this mode, be sure to flash an IT mode firmware to the EEPROM and install an IT Mode driver to the system OS. (See the note below.)

To Activate IT Mode

You can activate IT RAID mode by doing the following:

- Press any key in the BIOS setup.
- Press <CTRL> + <C> to activate IT RAID mode.

Chapter 2

Configuring the LSI MegaRAID IR_Mode Settings

 This chapter provides configuration instructions for the LSI Embedded MegaRAID Software utility for IR_Mode settings. If you do not wish to configure LSI Software RAID settings, please skip this section and go directly to OS Installation. For OS installation instructions, please refer to our website at www.supermicro.com.

 For system stability, please do not use both SAS and SATA drives in the same array.

2-1 Using the LSI MegaRAID Configuration Utility for IR Mode Settings

Follow the steps indicated below to configure arrays and logical drives in SAS IR Mode.

1. Power on the system.
2. When the LSI RAID Initialization screen displays, press <CTRL> and <C> to enter the LSI MegaRAID Configuration Utility.

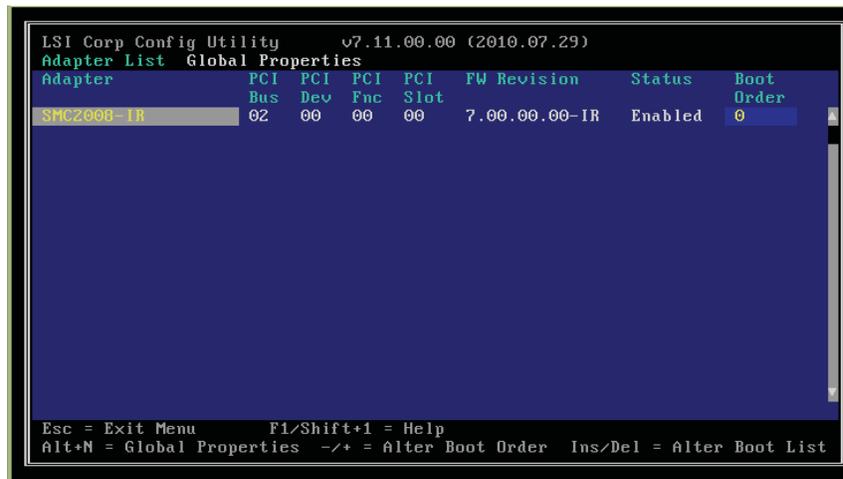


Figure 2.1

3. Once you are in the LSI MegaRAID Software Configuration Utility, highlight the LSI SAS 2008 setting you like to configure, and press <Enter> to invoke the LSI MegaRAID Main page as shown below.

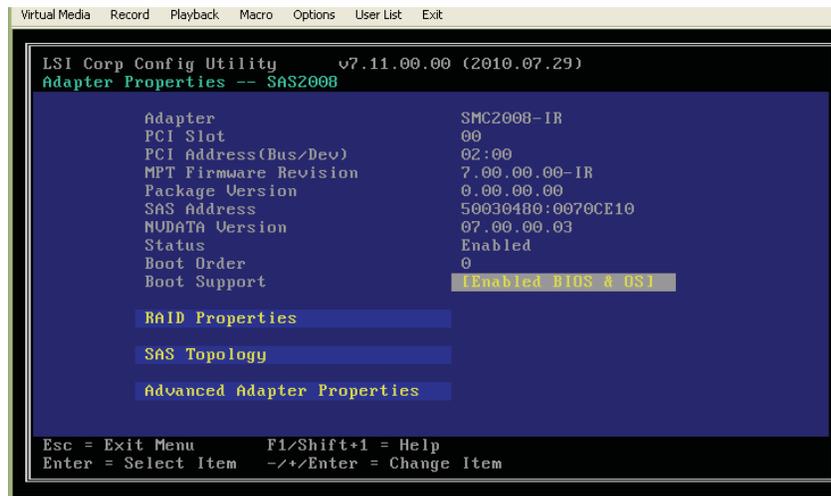


Figure 2.2

4. When *Boot Support* is highlighted as in the screen above, press <-> or <+> to change the setting. Press <Enter> to select the setting. For more information on an item, press <F1> or <Shift F1> to access help information. (The default setting for *Boot Support* is *Enabled BIOS & OS*.)
5. After you've selected the Boot Support setting, use the up/down arrow keys to select RAID Properties to create RAID volumes.
6. Once RAID Properties is highlighted, press <Enter> to select it. The following screen will display.

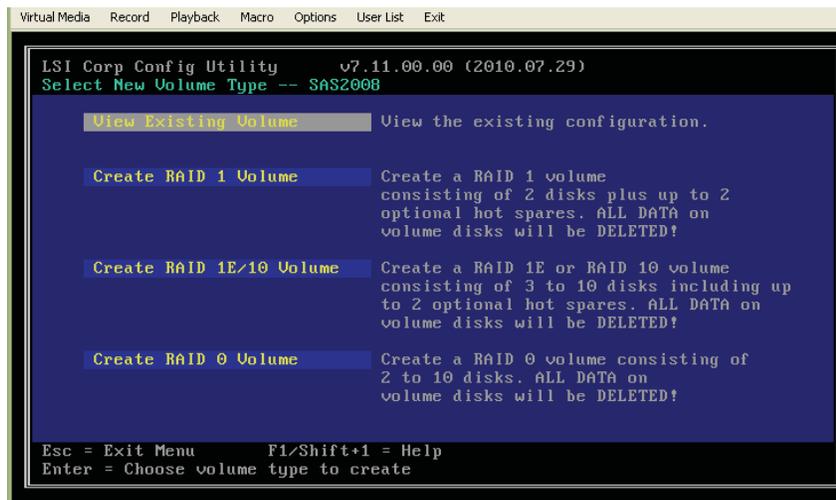


Figure 2.3

7. When *View Existing Volume* appears, press <Enter> to display the existing RAID Settings. Please note that this option will not be available if there is no RAID volume configured in the system.

2-2 Creating RAID Volumes

Creating RAID 1

To create RAID 1 Volume, select *Create RAID 1 Volume* from the RAID screen shown on the previous page and press <Enter>. You can create up to two RAID 1 hard disk drives, and up to two optional hot spare drives. The following screen will display.

Warning : All data on the disks will be erased when RAID 1 volume is being created.

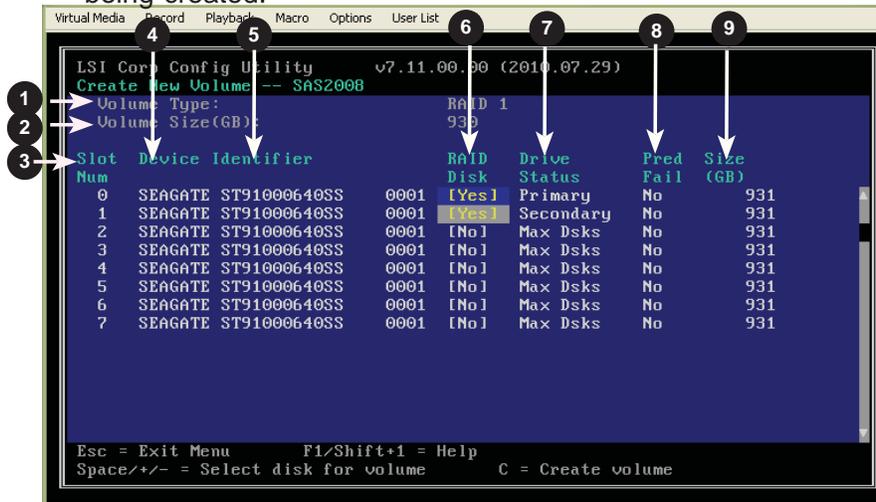


Figure 2.4

1. Volume Type: This item displays the RAID volume type.
2. Volume Size: This item displays the size of the RAID Volume in GB.
3. Slot Number: This item indicates the slot numbers of the disk drives to be configured into the RAID volume.
4. Device: This item indicates the manufacturer of the hard disk drive.
5. Identifier: This item indicates the part number of the hard disk.
6. RAID Disk: This item indicates if the HDD specified is a RAID device or not. To change a non-RAID drive to a RAID drive, use the arrow keys to select the appropriate field and press <-> or <+> to select this disk for a RAID volume or a hot spare drive. Press <C> to create a RAID 1 volume. You can follow the same procedure to change a RAID 1 drive to a non-RAID drive.
7. Drive Status: This item displays the status of the disk drive.
8. Pred. Fail (Predicting Failure): This item indicates the general condition of an HDD failure as predicted by S.M.A.R.T. (Self-Monitoring, Analysis, and

Reporting) Technology. SMART is a monitoring system used to detect and report on the various health conditions of a hard drive. If an HDD failure is anticipated by SMART, it is strongly recommended that you replace the hard drive before creating a RAID volume on the disk drive.

9. Size: This item displays the size (in GB) of the RAID volume created.



Notes:

1. The size of the volume created in a disk drive does not reflect the actual size of the disk.
2. If a RAID set consists of two or more disk drives, the size of the RAID volume indicates the total RAID volume created by all the disks within the RAID set combined.

Creating RAID 0

To create RAID 0, follow the following procedure.

1. Power on the system.
2. Press <CTRL> and <C> to enter the LSI RAID Configuration Utility during Power_On_Sef_Test (POST).
3. Select LSI SAS 2008 and press <Enter>.
4. Using the arrow keys, select *Boot Support*. Pressing <+> or <->, select the desired setting for this item. (The default setting is *Enabled BIOS & OS*.)
5. Select *RAID Properties* and press <Enter>. The following screen will display.

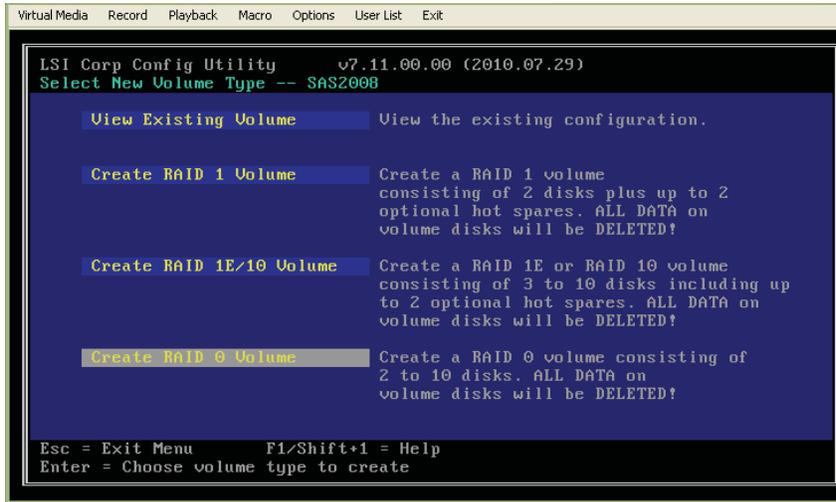


Figure 2.5

- Using arrow keys, select *Create RAID 0* and press <Enter>. The following screen will display.

Note: Creating RAID 0 volume requires a minimum of 2 and a maximum of 10 disks. Please note that all data in these disks will be erased.

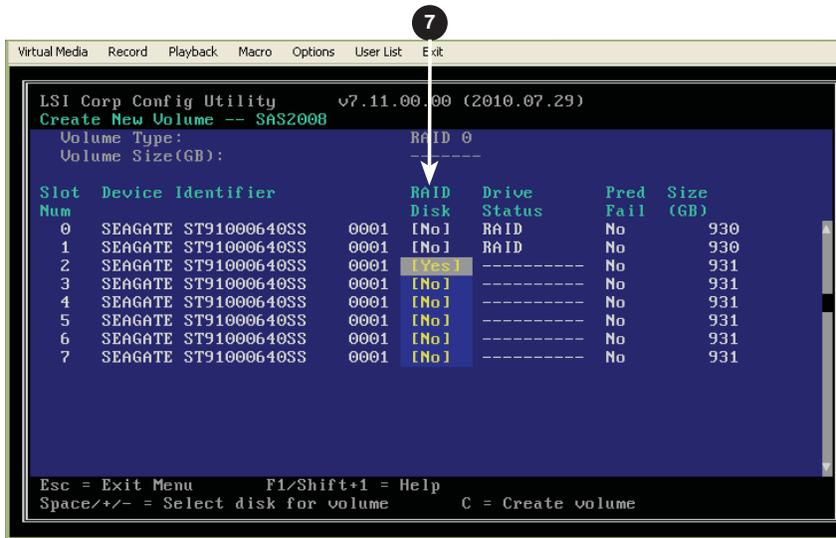


Figure 2.6

- Use the arrow keys to select the RAID disk drive you want to create RAID 0. Then use <-> or <+> to change the RAID status. Select Yes and press <Enter> to configure a RAID 0 setting.
- Repeat the same procedure to configure all RAID disks you want to include in the RAID 0 volume. Press <C> to create RAID 0 and save the volume.

Creating RAID 1E/10

To create RAID 1E/10, follow the following procedure.

- Power on the system.

2. Press <CTRL> and <C> to enter the LSI RAID Configuration Utility during POST.
3. Select *LSI SAS 2008* and press <Enter>.
4. Using the arrow keys, select *Boot Support*. Pressing <+> or <->, select the desired setting for this item. (The default setting is *Enabled BIOS & OS*.)
5. Select *RAID Properties* and press <Enter>. The following screen will display.

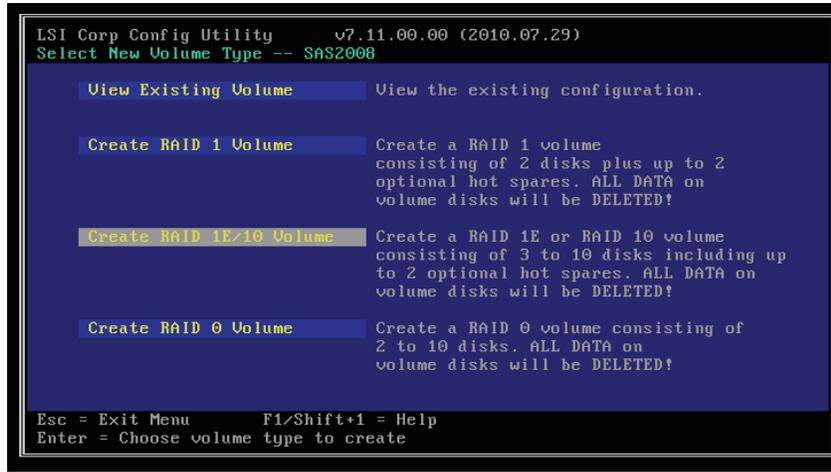


Figure 2.7

6. Select *RAID Properties* and press <Enter>. The following screen will display.
7. Using the Up/Down arrow keys, select *Create RAID 1E/10 Volume* and press <Enter>. The following screen will display.

 **Note:** Creating RAID 1E or RAID 10 volume requires a minimum of 3 and a maximum of 10 disks, among which you can create up to two hot spare drives. Please note that all data stored in the disk drives will be erased.

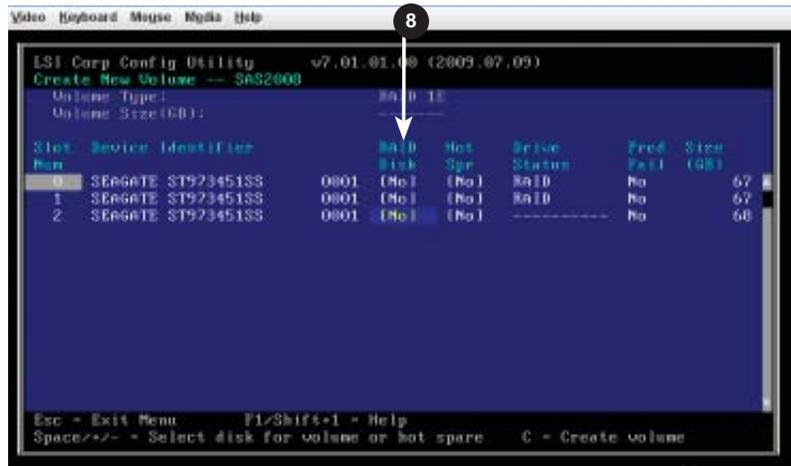


Figure 2.8

8. Use the arrow keys to select the RAID disks you want to create RAID 1E or 10. Press <-> or <+> to change the RAID status. Select Yes and press <Enter> to configure a RAID 1E or RAID 10. Repeat the same steps to configure

all RAID disks you want to include in the RAID volume. Press <C> to create and save the RAID volume.

2-3 Managing Volume

When the LSI SAS 2008 Controller main screen appears, select *RAID Properties* (shown on Page 2-2) and press <Enter>. Select *View Existing Volume* and press <Enter>. The following screen will display.

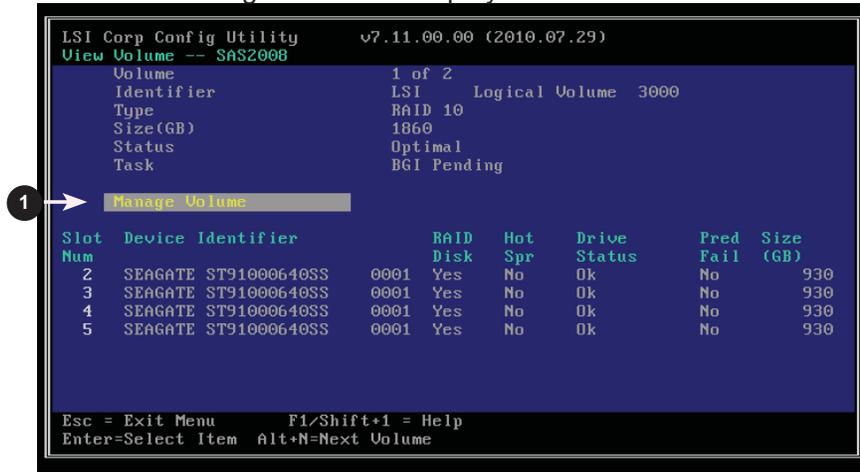


Figure 2.9

Manage Hot Spares

1. When the screen shown above displays, Select *Manage Volume* and press <Enter> to invoke the following screen.

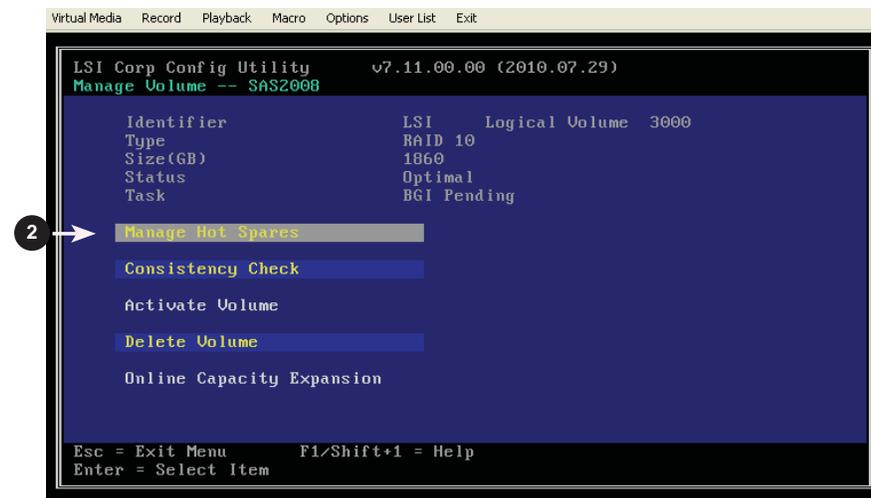


Figure 2.10

2. Select *Manage Hot Spares* and press <Enter> to manage Hot Spare drives.

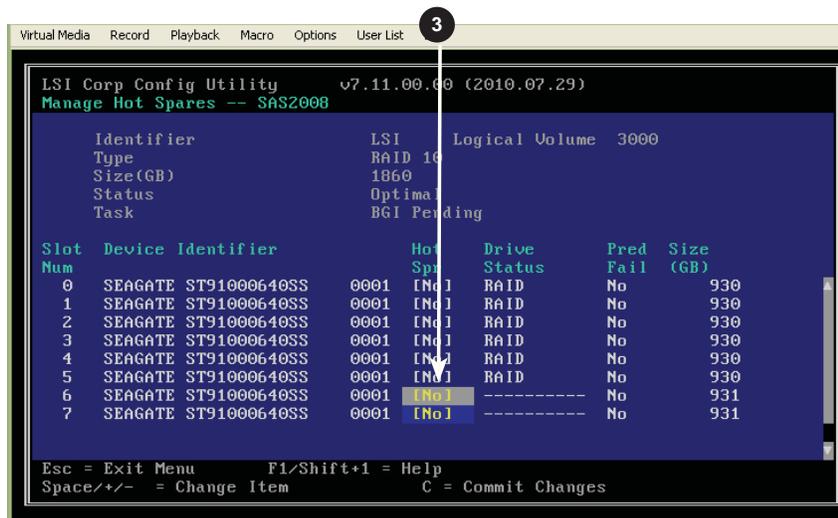


Figure 2.11

3. Using the left/right arrow keys, select *Hot Spares* as shown above. Use the <+> or <-> key to change the value in this setting. Select Yes to configure this device as a Hot Spare for the RAID Volume. When No is selected, this device will not be used as a Hot Spare for the RAID Volume. (The default setting is No).

Consistency Check

1. From the LSI SAS RAID menu, select *RAID Properties* and press <Enter>.
2. Select *View Existing Volume* and press <Enter>.
3. Select *Manage Volume* and press <Enter>. The following screen will display.

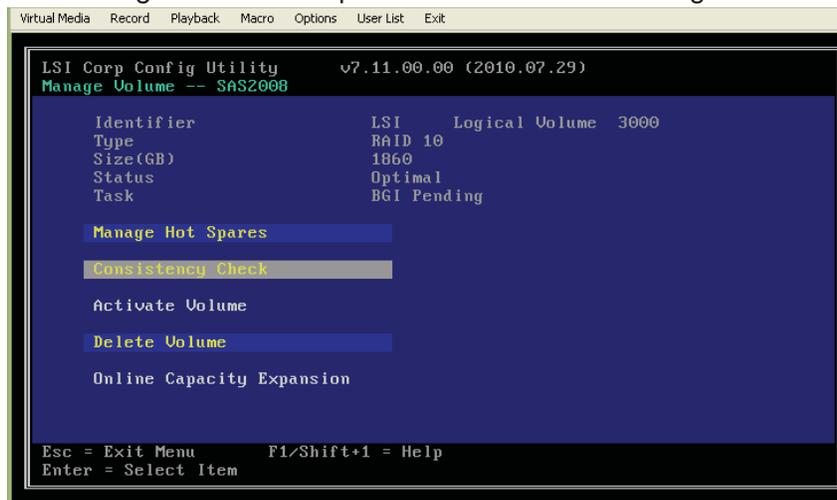


Figure 2.12

4. Select *Consistency Check* and press <Enter>.
5. Press <Y> to start volume consistency check and exist the submenu. Please note that this process might take several hours to complete. Press <N> to abandon volume consistency check and exit the submenu.

Activate Volume

1. From the LSI SAS RAID menu, select *RAID Properties* and press <Enter>.
2. Select *View Existing Volume* and press <Enter>.
3. Select *Manage Volume* and press <Enter>. The following screen will display.



Figure 2.13

4. When the screen above displays, select *Activate Volume* and press <Enter>. This feature is used to activate a RAID volume. It is not available when one of the following conditions occurs:
 - The volume selected is currently active.
 - Activating the volume will exceed the maximum number of active volumes or RAID disks allowed.
 - The volume contains incompatible metadata on it.

Delete Volume

1. From the LSI SAS RAID menu, select *RAID Properties* and press <Enter>.
2. Select *View Existing Volume* and press <Enter>.
3. Select *Manage Volume* and press <Enter>. The following screen will display.

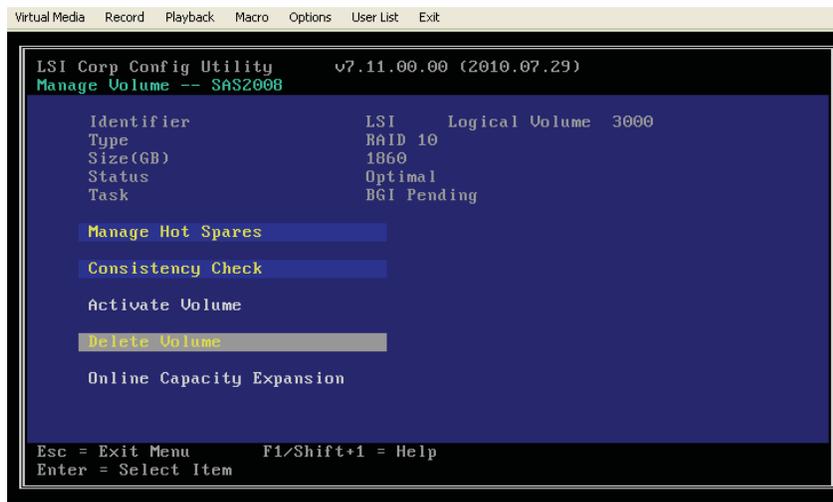


Figure 2.14

- When the screen above displays, select *Delete Volume* and press <Enter>.

Warning! This feature is used to delete a RAID volume. When you deleting  a RAID volume, all data in the volume will be erased as well.

- Press <Y> to start deleting RAID volume and exist to the Adapter Properties submenu. Press <N> to abandon volume deletion and exit the submenu.

Online Capacity Expansion

- From the LSI SAS RAID menu, select *RAID Properties* and press <Enter>.
- Select *View Existing Volume* and press <Enter>.
- Select *Manage Volume* and press <Enter>. The following screen will display.



Figure 2.15

- When the screen above displays, select *Online Capacity Expansion* and press <Enter>. You can use this feature to expand the capacity of the current RAID volume if it is a RAID 1 volume, and is supported or enabled by your firmware.

2-4 SAS Topology

To use SAS Topology, follow the following steps.

1. Power on the system.
2. Press <CTRL> and <C> to enter the LSI RAID Configuration Utility at bootup.
3. Select *LSI SAS 2008* and press <Enter>.
4. Using the arrow keys, select *Boot Support*. Pressing <+> and <-> keys, select the desired setting and press <Enter> as shown in the screen below. (The default setting is *Enabled BIOS & OS*.)
5. Select *SAS Topology* and press <Enter>. The submenu menu will display.



Figure 2.16

6. This item displays the name of the LSI SAS Controller.
7. *Device Identifier* is used to identify the type of a device. When *Direct Attach Devices* is highlighted, press <Enter> to display the information of all disk drives installed in the system as shown on the screen below.
8. This item *Device Info* displays the functionality of a device.

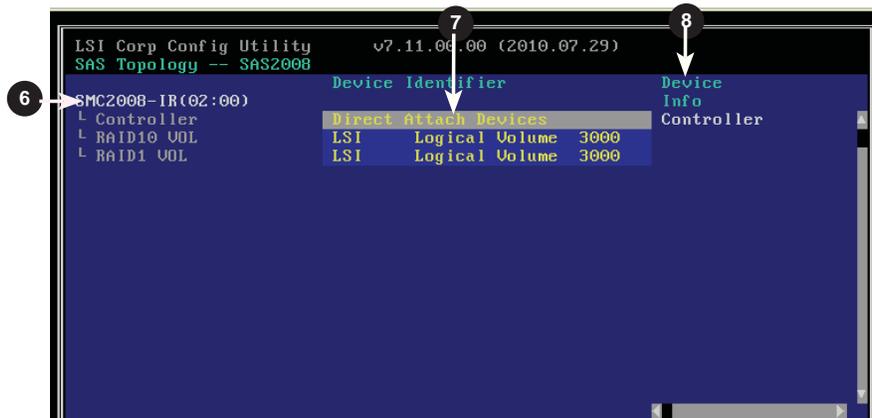


Figure 2.17

9. These items display the types of disk drives installed in the system.
10. This item displays the RAID types and RAID volumes of the devices attached to the system.

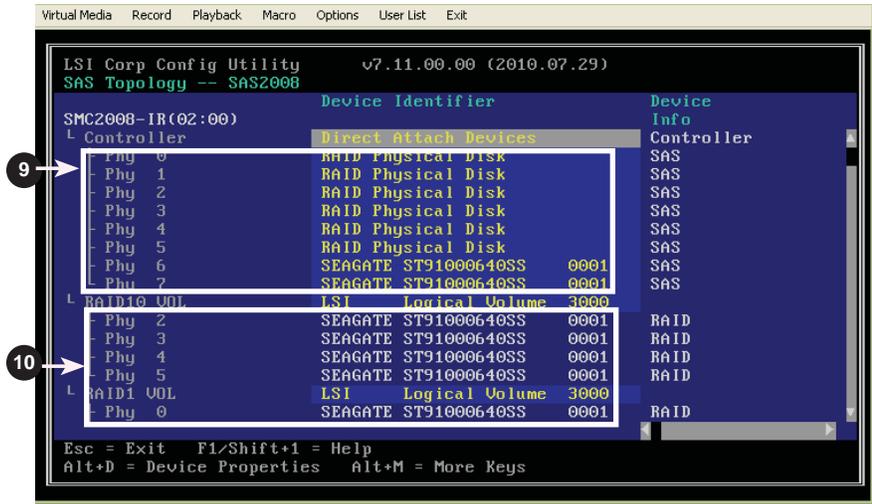


Figure 2.18

2-5 Advanced Adapter Properties

To configure Advanced Adapter Properties settings, follow the steps below.

1. Power on the system.
2. Press <CTRL> and <C> to enter the LSI RAID Config. Utility during POST.
3. Select *LSI SAS 2008* and press <Enter>.
4. Using the arrow keys, select *Boot Support*. Pressing <+> and <-> keys, select the desired setting and press <Enter> as shown in the screen below. (The default setting is *Enabled BIOS & OS*.)



Figure 2.19

5. Select *Advanced Adapter Properties* and press <Enter>. The submenu menu will display.



Figure 2.20

6. Select *Advanced Device Properties* from the submenu again and press <Enter> to display the status of the devices that connected to the system including items such as IO Timeout, Removable Media Support and Restores.
7. Select *Adapter Timing Properties* from the submenu and press <Enter> to display the status including Spinup delay and missing delay, etc.

2-6 Exit

After you've changed SAS RAID Configuration settings, press <Esc> to access the Exit menu as shown below.

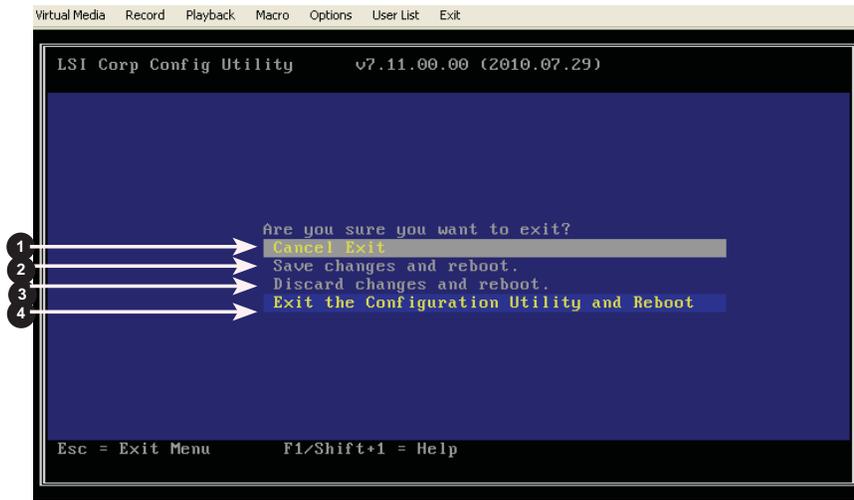


Figure 2.21

1. *Cancel Exit*: Use this feature to cancel exit and return to the SAS Configuration Utility menu.
2. *Save changes then exit this menu*: Select this item and press <Enter> to save the changes you've made and return to the Configuration Utility menu.
3. *Discard changes then exit this menu*: Select this item and press <Enter> to discard the changes you've made and return to the Configuration Utility menu.
4. *Exit the Configuration Utility and Reboot*: Select this item and press <Enter> to exit the SAS Configuration Utility and reboot the system.

Chapter 3

Configuring the LSI MegaRAID IMR_Mode Settings

 This chapter provides instructions on how to configure MegaRAID IMR settings for the LSI 2008 SAS controller. If you do not wish to configure LSI Software RAID settings, please skip this section and go directly to OS Installation. For OS installation instructions, please refer to our web site at www.supermicro.com.

 For system stability, please do not use both SAS and SATA drives in the same array.

3-1 Using the LSI MegaRAID Configuration Utility for the IMR Mode

Follow the steps below to configure arrays and logical drives.

1. Power on the system.
2. Enter the BIOS Setup Utility and enable "Port 64/60 Emulation" support in the Advanced Setting if your USB Keyboard/Mouse is not supported by the Web_BIOS; otherwise, skip this step.
3. Press <CTRL> and <H> to enter the LSI MegaRAID Configuration Utility at bootup.
4. Once you are in the LSI MegaRAID Configuration Utility, highlight *LSI SAS 2008* and press <Enter>. The MegaRAID IMR-Mode Home page will display.



Figure 3.1

3-2 The LSI MegaRAID IMR_Mode Home Page

The LSI MegaRAID IMR_Mode submenu includes the following items. To configure the settings for a submenu item, use the mouse or press the <Tab> key to select the submenu item and press <Enter>.

- **Controller Selection**
- **Controller Properties**
- **Scan Devices**
- **Virtual Drives**
- **Drives**
- **Configuration Wizard**
- **Physical View**
- **Events**
- **Exit**

3-3 Controller Selection

This feature allows you to configure the settings of a controller installed on an adaptor card. Follow the instructions below to configure the settings of a controller.

1. Select Controller Selection to display the *adapter Selection* menu as shown below.



Figure 3.2

2. This menu displays the information of all adapters installed on the motherboard. Click <Start> to configure the settings of an adapter.

3-4 Controller Properties

This feature allows you to configure the properties settings of a controller installed on an adaptor card. Follow the instructions below to configure the settings of a controller.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Controller Properties* and press <Enter>. The following screen will display.

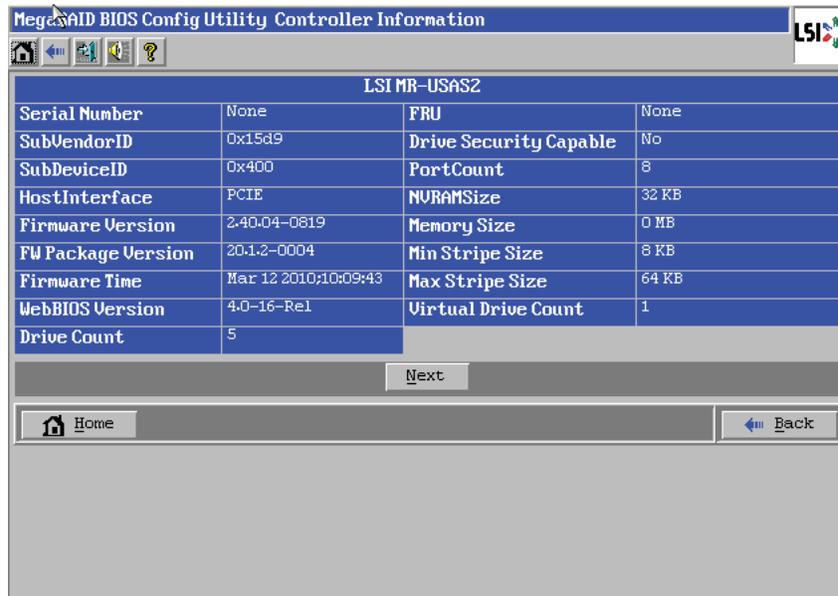


Figure 3.3

3. This page displays the properties of the selected driver, including information on the driver, such as Serial Number, Sub_Vendor ID, Sub_Device ID, Firmware_Version, Firmware Package_Version, Firmware Time, WebBIOS Version, and Drive Count.
4. Once you've viewed the properties of the controller, click <Next> to view the following technical items as shown in the screen below.

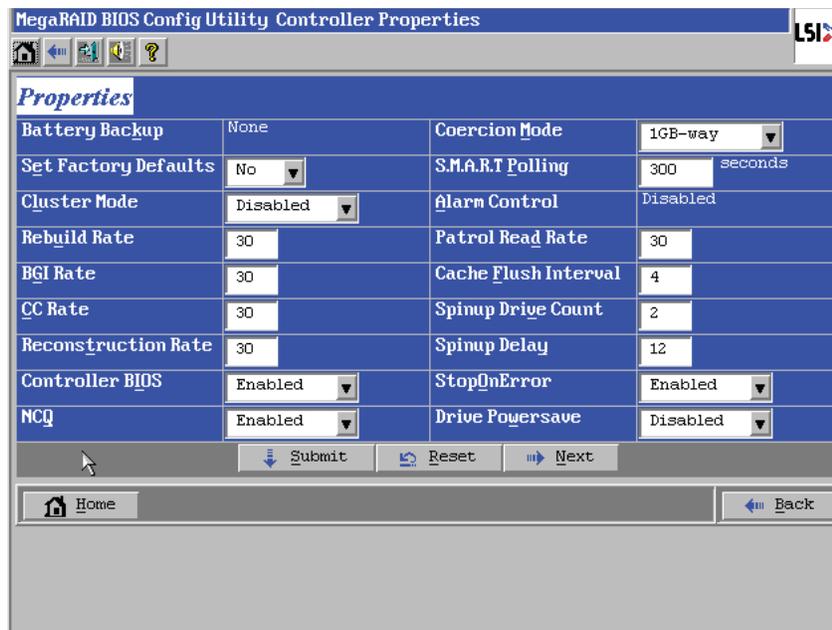


Figure 3.4

- Battery Backup: This item indicates if a backup battery is installed in the system.
- Coercion Mode: From the pop-up menu, select a desired setting for the *Coercion Mode*. The options are None, 128MB-way, and 1GB-way.
- Set Factory Default: Select Yes from the pull-up menu to load factory default settings. Select No if you do not want to use the factory default settings.
- S.M.A.R.T Polling: Enter a number (in seconds) for S.M.A.R.T Polling Interval.
- Cluster Mode: Select *Enabled* from the pull-up menu to enable cluster support. Select *Disabled* to disable cluster support.
- Alarm Control: This item indicates current Alarm Control Status.
- Rebuild Rate: Enter a value as the Rebuild rate for the system.
- Patrol Read Rate: Enter a value in the field for Patrol Read Rate.
- BGI Rate: Enter a value as the BGI rate for the system.
- Cache Flash Interval: Enter a value in the field to specify how often the system shall flash the cache.
- CC Rate: Enter a value as the CC rate for the system.
- Spinup Drive Count: This item displays the number of spinup drives installed.

- Reconstruction Rate: Enter a value as the Reconstruction rate for the system.
- Spinup Delay: This item indicates how long a spinup drive will wait before the next command is executed.
- Controller BIOS: Select *Enabled* from the pull-up menu to load the Controller BIOS. Select *Disabled* to disable Controller BIOS support.
- Stop_On_Error: Select *Enable* to stop current operation and display the error message when an error occurs. Select *Disabled* to disable this feature.
- NCQ: Select *Enabled* from the pull-up menu to enable NCQ (Native Command Queuing) support which will increase the performance of an HDD by allowing it to optimize the operation sequence in retrieving outstanding requests and in executing read/write commands.
- Drive PowerSave: Select *Enabled* from the pull-up menu to use the Power_Save mode for the selected drive.

3-5 Scan Devices

This feature displays the status of the device selected.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Scan Devices* and press <Enter>. The following screen will display.

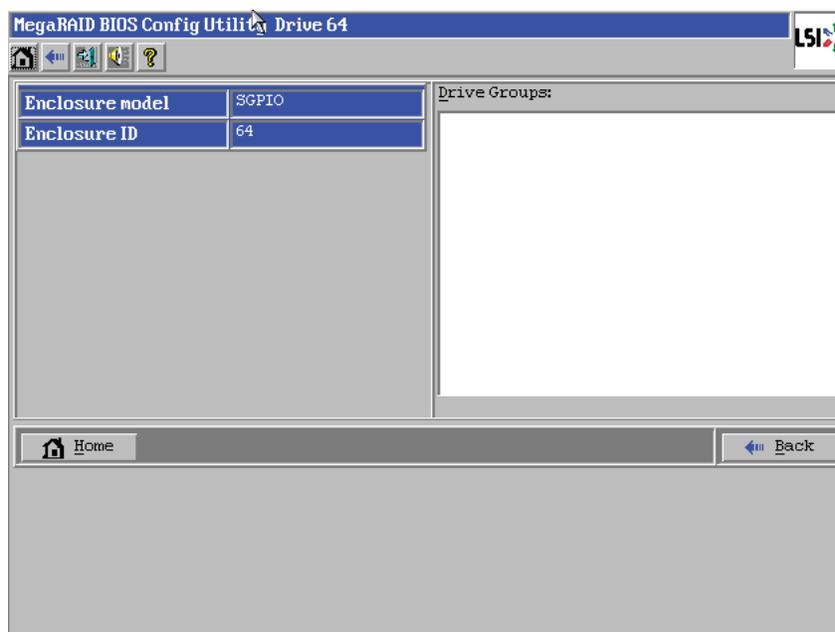


Figure 3.5

- Enclosure Model: This item displays the type of the Enclosure Model
- Enclosure ID: This item displays the Enclosure ID of the device.

Click <Home> to return to the Home page. Click <Back> for the previous page.

3-6 Virtual Drives

This feature displays all virtual drives detected in the system and allows the user to perform an action on the drive selected.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Virtual Drives* and press <Enter>. The following screen will display.

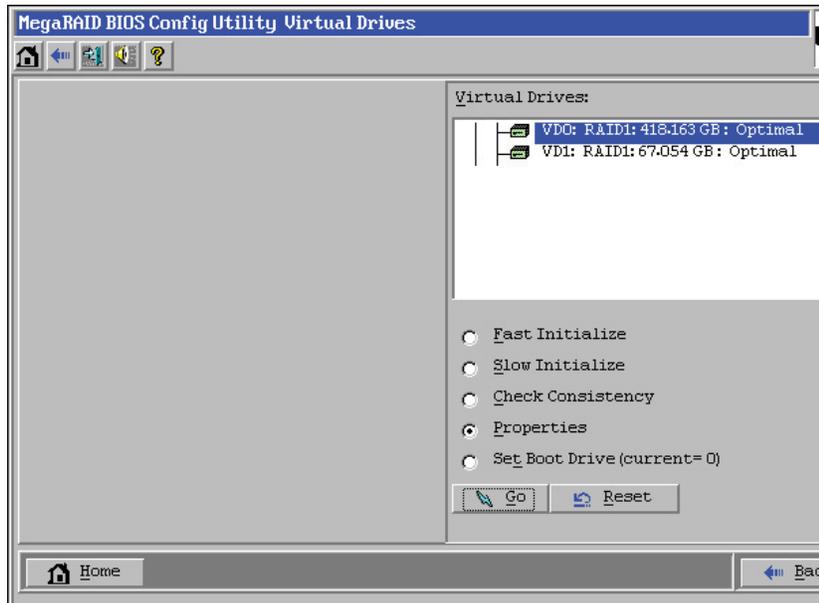


Figure 3.6 a

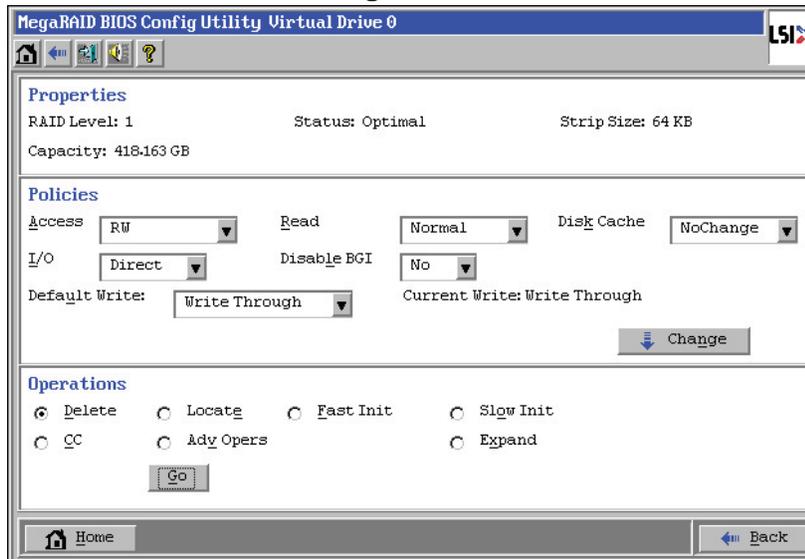


Figure 3.6 b

3. All virtual drives installed in the system will display in the left window. Select a virtual drive to perform the following actions.
 - Fast Initialize: Check this item to perform fast initialization for the drive selected.
 - Slow Initialize: Check this item to perform slow initialization for the drive selected.
 - Check Consistency: Check this item to check data consistency for the drive selected.
 - Properties: Check this item to display the properties of the drive selected.
 - Set Boot Drive: Check this item to make the selected drive a bootable drive.

After you've select an action to perform, click <Go> to perform the action or click <Reset> to reset the setting.

4. Use the <Tab> key or the mouse to select a drive and press <Enter>. The properties of the selected drive will display as shown below.

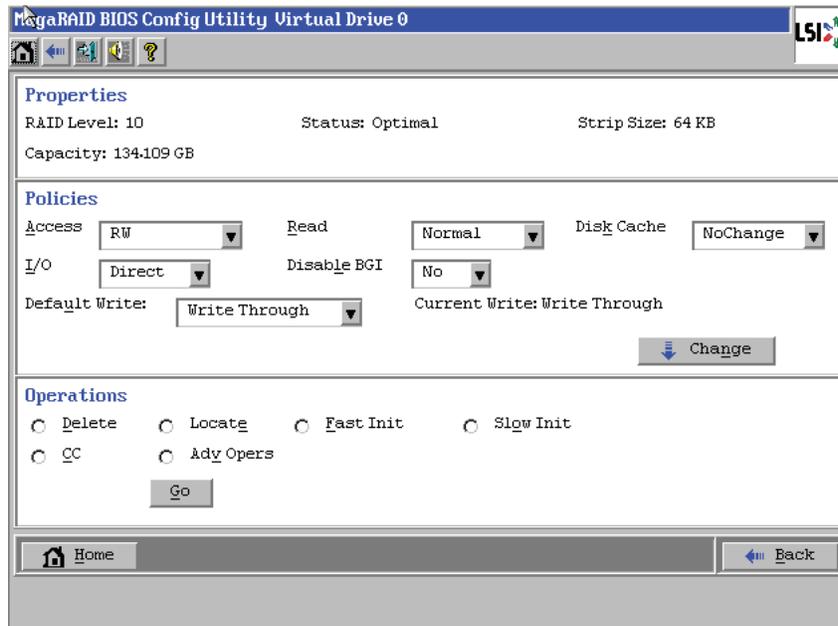


Figure 3.7

5. This menu displays the following information of a selected drive.
 - Properties: This section displays the properties of the drive.
 - Policies: This section sets the policies of using the controller on this drive. To change a setting, select a desired setting from the pull-down menu, and click <Change> for change it.
 - Operations: This section allows the user to change the state of an operation, including the following.
 - Click <Delete> to delete an operation.
 - Click <Locate> to locate a drive.
 - Click <Fast Init> for fast initialization.
 - Click <Slow Init> for slow initialization.
 - Click <CC> to duplicate an operation on another drive.
 - Click <Ady Opers> for Advanced Operation Options.

After you've selected desired configuration settings, click <Go> to perform the actions. Click the <Home> icon  to go back to the Home page. Click <Back> to go back to the previous page.

3-7 Drives

This feature displays all drives detected in the system and allows the user to perform an action to a drive selected by the user.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Drives* and press <Enter>. The following screen will display.

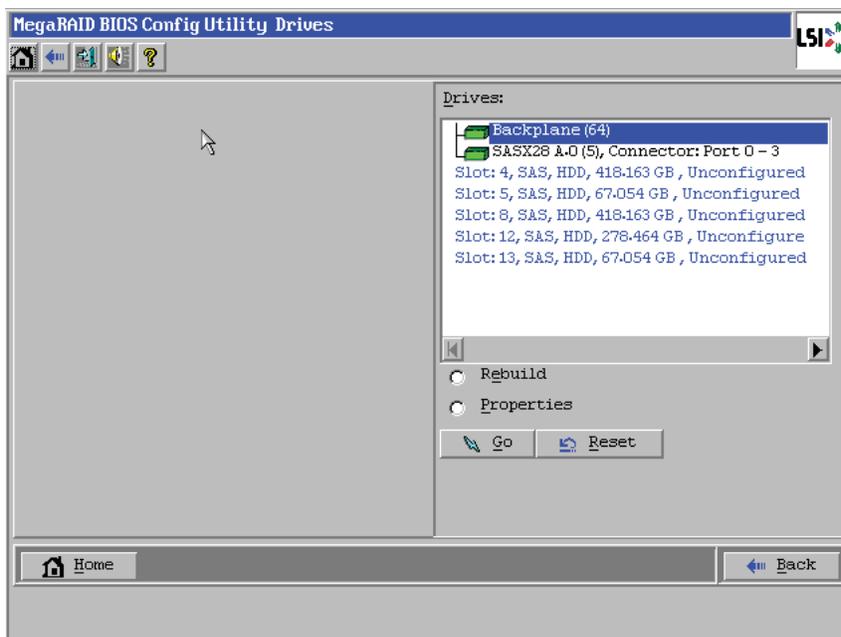


Figure 3.8

3. Select a drive by highlighting it and check an item from the following items to perform an action.
 - Rebuild: Check this item to rebuild the drive selected.
 - Properties: Check this item to display the properties of the drive selected.

After you've selected an action to perform, click <Go> to perform the action. Click <Reset> to reset the setting.

Then, click <Home> to return to the home page. Click <Back> to return to the previous page.

3-8 Configure Wizard

This is a quick configuration guide to show you how to easily and efficiently configure MegaRAID settings.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Configure Wizard* and press <Enter>. The following screen will display.

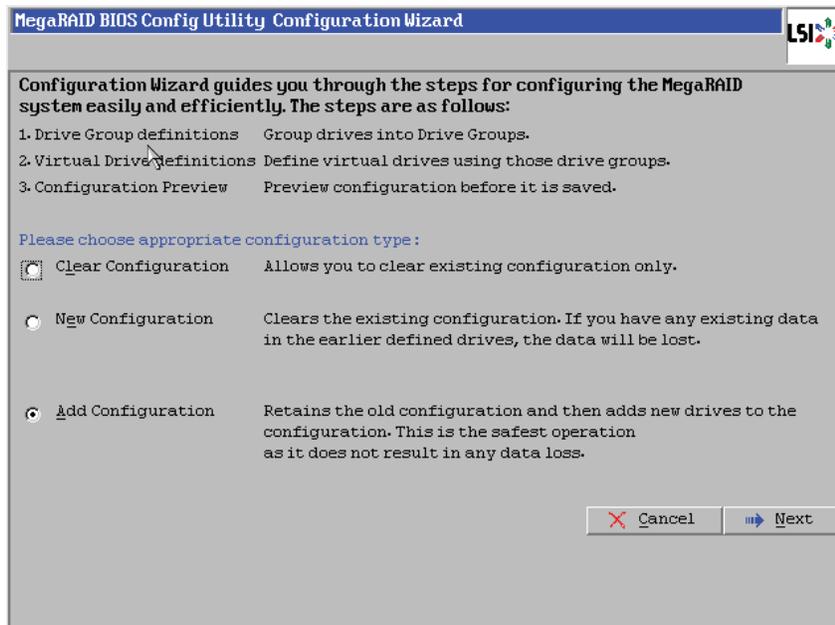


Figure 3.9

3. Check the following items to perform an action.

- Clear Configuration: Check this item to clear the existing RAID configuration settings.
- New Configuration: Check this item to delete all RAID configuration settings and create new a RAID Volume. Data previously stored in the drive will be erased as well.



Warning: When creating a new RAID volume, all existing RAID arrays will be erased.

- Add Configuration: Check this item to keep the existing configuration settings and to add new settings to the drive. This is a safe operation because there is no risk of losing data.

After you've checked an item, click <Cancel> to cancel the selection. Click <Next> to proceed with the action selected.

Add Configuration

If you've selected *Add Configuration* and clicked <Next>, the following screen will display.

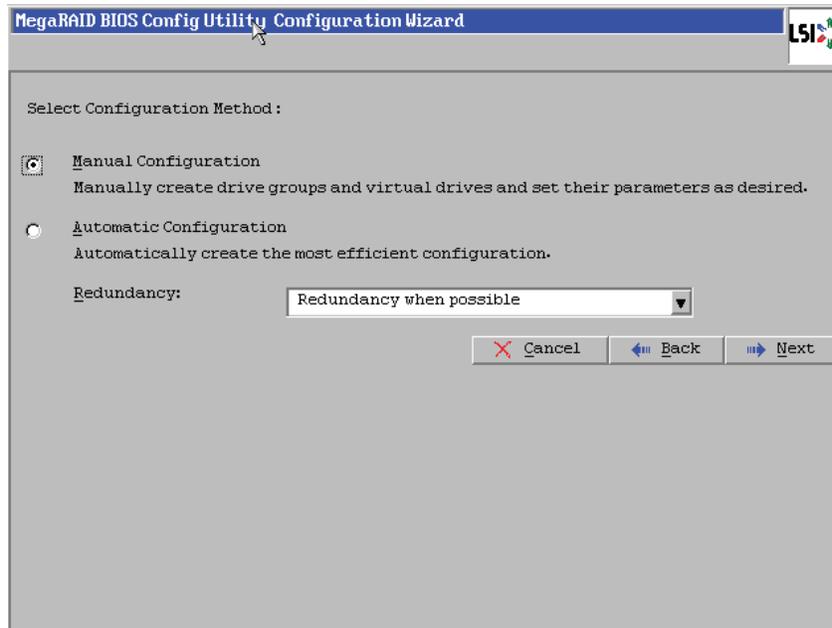


Figure 3.10

This page allows you to configure MegaRAID settings using the following methods.

- **Manual Configuration:** Check this item to manually create drive groups, virtual drives and set their parameters. All drives including configured drives will display.
- **Automatic Configuration:** Check this item to allow the LSI SAS RAID Controller to configure the MegaRAID settings automatically. This is the most efficient way in configuring RAID settings.

After you've selected a configuration method, click <Next> to proceed with configuration. Click <Back> to return to the previous page. Click <Cancel> to cancel the selection. Refer to the following screen for reference. Also, be sure to set the Boot Drive.

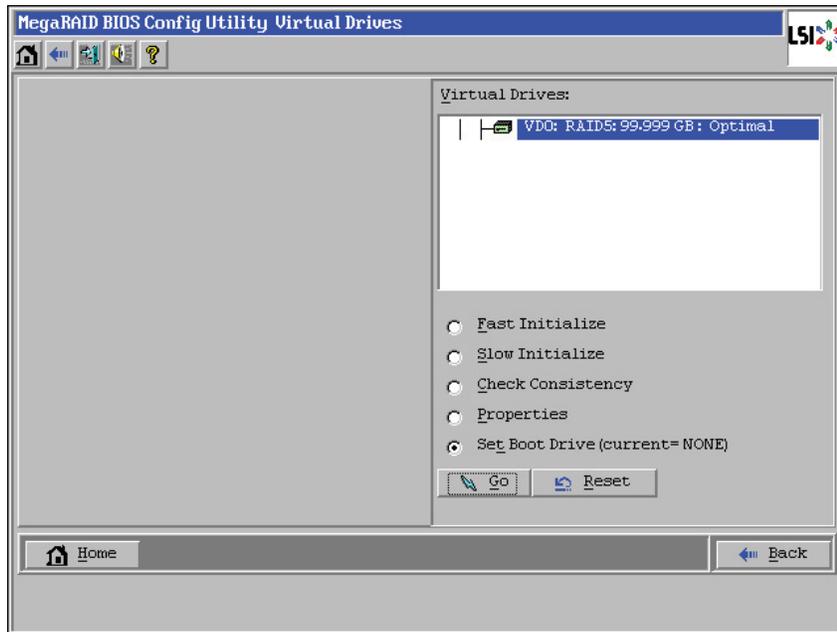


Figure 3.11

3-9 Logical View

This feature displays the status of logical drives of the system.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Logical View* and press <Enter>. The following screen will display. (The following page displays the status of logical drives installed in the system.)

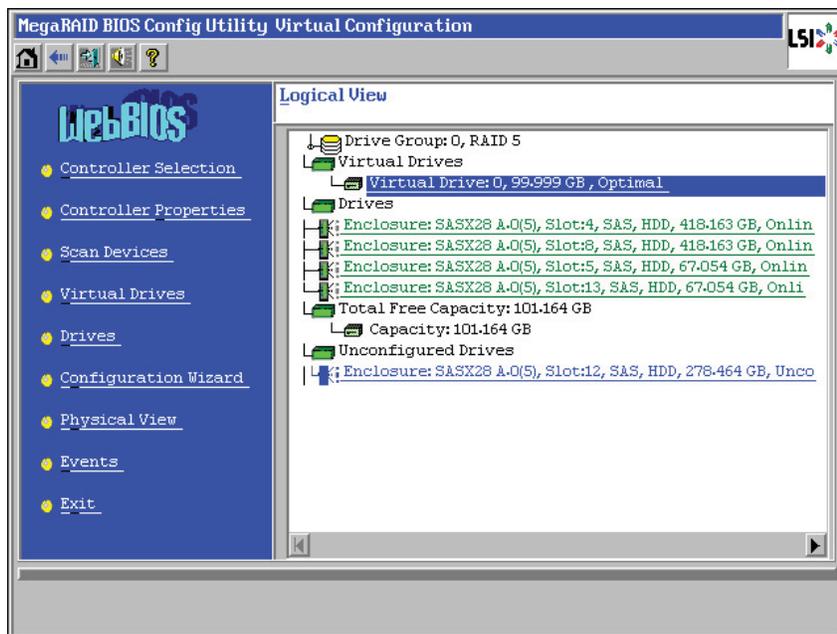


Figure 3.12

Physical View

Click <Physical View> on the left window of the home page to display the *Physical View* page as shown below. This page displays the status of all physical drives detected in the system.

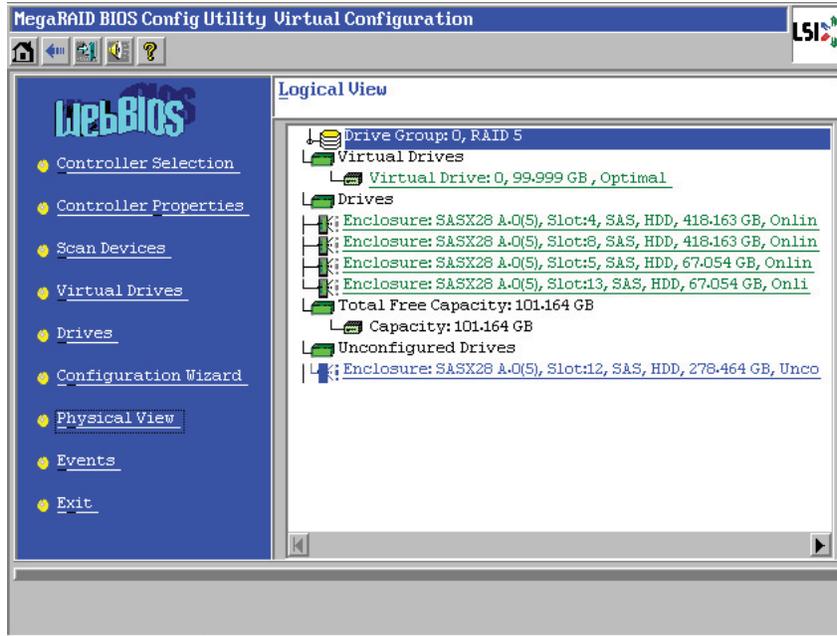


Figure 3.13

3-10 Events

This feature displays the system event logs.

1. Click the <Home> icon  to display the Home page.
2. Use the <Tab> key or the mouse to select *Events* and press <Enter>. The following screen will display.

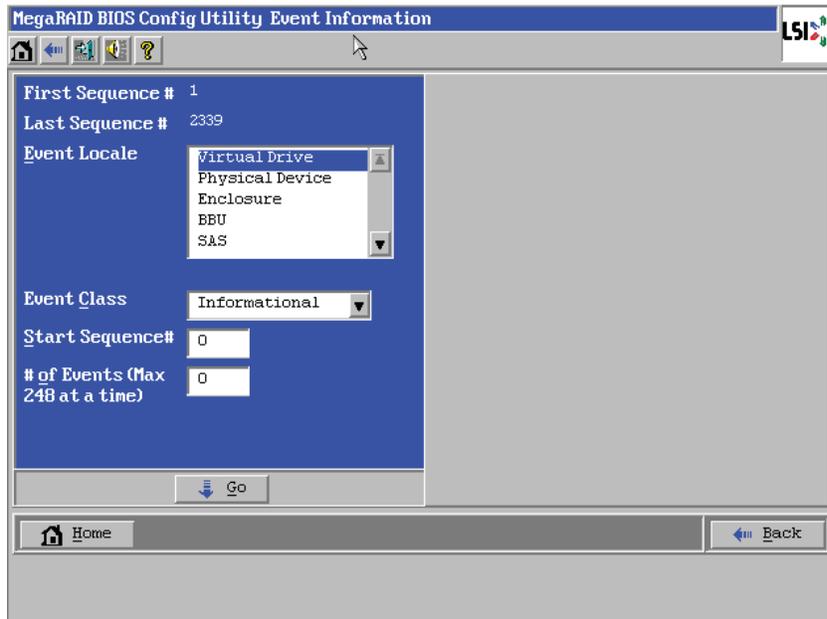


Figure 3.14

- First Sequence#: This item indicates the number of the first event.
- Last Sequence#: This item indicates the number of the last event.
- Event Locale: This item indicates the location where the event occurs, including:
 - Virtual Drive
 - Physical Drive
 - Enclosure
 - BBU (Battery_Backup Unit)
 - SAS (SAS devices)
- Event Class: This item indicates the class of an event, including:
 - Informational: This event is used for informational purpose only.
 - Warning: This event provides a warning to the user.
 - Critical: This is a critical event concerning system stability. User's intervention is required to solve the problem before the system becomes unstable.
- Start Sequence#: This item indicates the event number when the event (issue) first started.
- # of Events (Maximum 248 at a time): This indicates the number of events pertaining to the this issue indicated above.

After you've selected the desired settings, click <Go> to display event logs.

Click <Home> to return to the Home page. Click <Back> to return to the previous page.

After you've configure MegaRAID settings, click <Exit> to exit the LSI MegaRAID Utility.

(Disclaimer continued)

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