

PIKE II 3008 Series PIKE II 3008-8i PIKE II 3008-4i4e

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About this guide

This user guide contains the information you need when installing and configuring the server management board.

How this guide is organized

This guide contains the following parts:

Chapter 1: Product introduction

This chapter offers the PIKE II 3008 SAS RAID card features and the new technologies it supports.

Chapter 2: RAID configuration

This chapter provides instructions on setting up, creating, and configuring RAID sets using the available utilities.

Chapter 3: Driver installation

This chapter provides instructions for installing the RAID drivers on different operating systems.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. ASUS websites

The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you MUST follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<key></key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.
	Example: <enter> means that you must press the Enter or Return key.</enter>
<key1+key2+key3></key1+key2+key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).
	Example: <ctrl+alt+d></ctrl+alt+d>
Command	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets.
	Example: At the DOS prompt, type the command line: format a:

PIKE II 3008 Series specifications summary

	PIKE II 3008-8i	PIKE II 3008-4i4e	
Controller	LSISAS3008 Controller		
Interface	PCI-E Gen3		
Ports	8 SAS 12Gb/s Ports 8 SAS 12Gb/s Ports (2 Mini-SAS HD SFF-8643) (1 Mini-SAS HD SFF-8643) 1 Mini-SAS HD SFF-8644) 1 Mini-SAS HD SFF-8644)		
Devices Supported	12, 6, 3 Gb/s SAS 6, 3 Gb/s SATA		
RAID level	RAID 0/1/10/1E		
Form factor	147.65 mm X 68.9 mm (5.81 in. x 2.71 in.)		

* The exact OS support would base on the OS support list of the motherboard.

** Specifications are subject to change without notice.

Product introduction

This chapter offers the PIKE II 3008 SAS RAID card features and the new technologies it supports.

1.1 Welcome!

Thank you for buying an ASUS® PIKE II 3008 Series SAS RAID card!

The ASUS PIKE II 3008 Series SAS RAID card supports 12 Gb/s SAS Technology and allows you to create RAID 0, RAID 1, RAID 1E, and RAID 10 sets from SATA II/SATA III/SAS/SAS II/ SAS III hard disk drives connected to the SAS connectors on the card.

Before you start installing the RAID card, check the items in your package with the list below.

1.2 Package contents

Check your package for the following items:

- ASUS PIKE II 3008 Series SAS RAID card
- Support DVD

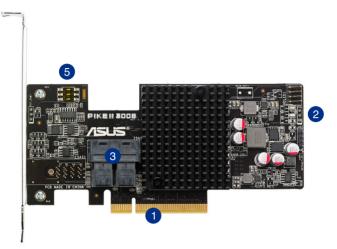


If any of the above items is damaged or missing, contact your retailer.

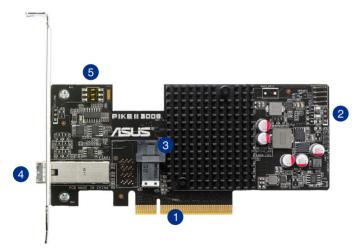
1.3 Card layout

The illustration below shows the major components of the RAID card.

PIKE II 3008-8i



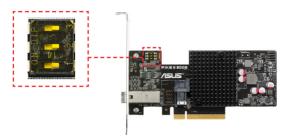
PIKE II 3008-4i4e



- 1. PCI-E x8 interface
- Heartbeat LED and Activity LED. This Activity LED blinks to indicate that system is accessing the SAS ports.
- 3. Internal mini-SAS HD connectors
- 4. External mini-SAS HD connector
- 5. Switch* (for more than one card)

1.3.1 Switch settings

When using more than one PIKE II card on your system, ensure to manually set the pin settings on the Switch on each of the PIKE II cards to ensure that the system detects all the cards installed. You can refer to the following table for the pin settings.



PIKE II card Switch pin settings and recommended configuration:

PIKE 3008	Switch	Pin name	Pin value
1	SW1	[1:2:3]	111
2	SW1	[1:2:3]	110
3	SW1	[1:2:3]	101
4	SW1	[1:2:3]	100
5	SW1	[1:2:3]	011
6	SW1	[1:2:3]	010
7	SW1	[1:2:3]	001
8	SW1	[1:2:3]	000

1.4 System requirements

Before you install the PIKE II 3008 Series RAID card, check if the system meets the following requirements:

- ASUS Server motherboard
- PCI-E Gen3 slot
- SAS or SATA hard disk drives
- Mini-SAS HD cable
- Supported operating system:
 - Windows® and Linux operating systems (refer to website for details)
- Other requirements:
 - Appropriate thermal solution
 - Certified power supply module

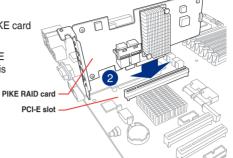


Ensure to update your BIOS to the latest version before using PIKE II 3008 series on ASUS Z9 or P9 series platform.

1.5 Card installation

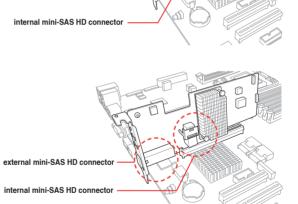
To install the RAID card on your motherboard:

- 1. Locate the PCIE Gen3 slot on the motherboard.
- 2. Align the golden fingers of the PIKE card with the PCIE Gen3 card slot.
- Insert the RAID card into the PCIE Gen3 card slot. Ensure the card is completely seated in place.



 For PIKE II 3008-8i, connect the hard disk drives to the internal Mini-SAS HD connectors.

For PIKE II 3008-4i4e, connect the hard disk drives to the internal and external Mini-SAS HD connectors



RAID Configuration

This chapter provides instructions on setting up, creating, and configuring RAID sets using the available utilities.



2.1 Setting up RAID

The RAID card supports RAID 0, RAID 1, RAID 1E, and RAID 10.

2.1.1 RAID definitions

RAID 0 (*Data striping*) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage. Use of at least two new identical hard disk drives is required for this setup.

RAID 1 (*Data mirroring*) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use two new drives or use an existing drive and a new drive for this setup. The new drive must be of the same size or larger than the existing drive.

RAID 1E (*Enhanced RAID 1*) has a striped layout with each stripe unit having a secondary (or alternate) copy stored on a different disk. You can use three or more hard disk drives for this configuration.

RAID 10 is a striped configuration with RAID 1 segments whose segments are RAID 1 arrays. This configuration has the same fault tolerance as RAID 1, and has the same overhead for fault-tolerance as mirroring alone. RAID 10 achieves high input/output rates by striping RAID 1 segments. In some instances, a RAID 10 configuration can sustain multiple simultaneous drive failure. A minimum of four hard disk drives is required for this setup.



If you want to boot the system from a hard disk drive included in a created RAID set, copy first the RAID driver from the support CD to a floppy disk before you install an operating system to the selected hard disk drive.

2.1.2 Installing hard disk drives

The RAID card supports SAS for RAID set configuration. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

To install the SAS hard disks for RAID configuration:

- 1. Install the SAS hard disks into the drive bays following the instructions in the system user guide.
- 2. Connect a mini-SAS HD cable to the connector on the back plane and to the mini-SAS HD connector on the card.
- 3. Connect a power cable to the power connector on each drive or on the back plane.

2.2 LSI Corporation MPT Setup Utility

The LSI Corporation MPT Setup Utility is an integrated RAID solution that allows you to create the following RAID sets from SAS hard disk drives supported by the LSI SAS 3008 Series controller: RAID 0, RAID 1, RAID 1E, and RAID 10.

You may use disks of different sizes in one volume; however, the size of the smallest disk determines the "logical" size of each member disk.
 DO NOT combine Serial ATA and SAS disk drives in one volume.
 The RAID setup screens shown in this section are for reference only and may not exactly match the items on your screen due to the controller version difference.
 The adapter name shown on the setup screens differs according to the installed SAS RAID card.

MPTFW and MPTBIOS version of the SAS RAID card

Take note of the MPTFW and MPTBIOS version of your SAS RAID card. You will need it if you request support from the ASUS Technical Support team.

You can get the MPTFW and MPTBIOS version of your SAS RAID card from the main screen (the **Adapter List** screen) of the the SAS configuration utility.

	MPTBIOS version	MPTFW version
LSI Corp Config Utility Adapter List Global Propert Adapter PCI PCI Bus Dev 02 00 Esc = Exit Menu F1/Shi	PCI PCI FW Revision Fnc Slot	Status Boot Order Enabled 8
Alt+N = Global Properties -		Del = Alter Boot List

2.2.1 RAID 1 volume

The RAID 1 feature supports simultaneous mirrored volumes with two disks.

The RAID 1 feature supports hot swap capability, so when a disk in an RAID 1 volume fails, you can easily restore the volume, and the swapped disk is automatically re-mirrored.

To create a RAID 1 volume:

- 1. Turn on the system after installing all SAS hard disk drives.
- 2. During POST, press <Ctrl>+<C> to enter the SAS configuration utility.





To avoid data loss, do not turn off the system when rebuilding.

3. From the Adapter List screen, select the controller and press <Enter>.

LSI Corp Config Uti Adapter List Globa			00.00	(2013.11.11)		
Adapter	PCI PCI Bus Dev	PCI I Fnc 3	Slot	FW Revision	Status	Boot Order
Asus SAS3008	02 00	00 (96 :	3.00.02.00-IR	Enabled	0
LSI Corp Config Uti Adapter List Globa Adapter						
Esc = Exit Menu Alt+N = Global Prope				ot Order Ins/D	el = Alter	Boot List



The number of items displayed depends on the controller.

4. From the Adapter Properties screen, use the arrow keys to select RAID Properties then press <Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
Adapter PCI Slot PCI Address(Bus∠Dev) HPT Firmware Revision SAS Address NUDATA Version Status Boot Order Boot Order Boot Support	Asus SAS3008 86 92:80 3.00.02.00-IR 500E0100:1402121A 03.05.00.04 Enabled 8 Enabled BIOS & OS]
SAS Topology Advanced Adapter Properties	
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Iten

5. From the Select New Volume Type screen, use the arrow keys to select Create RAID 1 Volume then press <Enter>.

LSI Corp Config Utility v8.07.00.00 (2013.11.11) Select New Volume Type SAS3000				
Create BAID 1 Volume	Create a RAID 1 volume consisting of 2 disks plus up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!			
Create RAID 1E∕10 Volume	Create a RAID 1E or RAID 10 volume consisting of 3 to 10 disks including up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!			
Create RAID 0 Volume	Create a RAID 0 volume consisting of 2 to 10 disks. ALL DATA on volume disks will be DELETED!			
Esc = Exit Menu F1/Shift+1 = Help Enter = Choose volume type to create				

 From the Create New Volume screen, move the cursor to the RAID Disk column of an available disks then press <+>, <->, or <Space> to include the disks into an array.

LSI Corp Config Utility Create New Volume SAS3008				
Volume Type: Volume Size:	RAID			
Slot Device Identifier Num 8 SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	0006 [No] 0006 [No]	Drive Pred Status Fail No No No	Size 279.3 GiB 279.3 GiB 279.3 GiB	
Esc = Exit Menu F1/Shif Space/+/- = Select disk for u		C = Create volum	e	



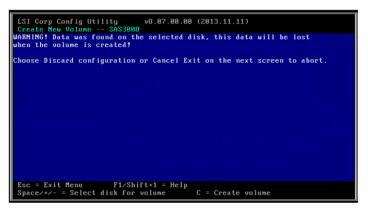
By default, the **RAID Disk** field shows **No** before volume creation. This field is grayed out under the following conditions:

- The disk does not meet the minimum requirements for use in a RAID volume.
- The disk is not large enough to mirror existing data on the primary drive.
- The disk is already part of another volume.
- 7. If a selected disk contains no files or data, the utility adds the disk to the array.

LSI Corp Config Utility Create New Volume SAS3008		.11.11)	
Volume Type: Volume Size:	RAID 1 278.4 GiB		
Slot Device Identifier Num Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	Disk Statu 8086 [Yes] Prima 8086 [Yo] Secon 8086 [No] Max I 8086 [No] Max I	e Pred Disk us Fail Size ary No 279.3 GiB ndary No 279.3 GiB Dsks No 279.3 GiB Dsks No 279.3 GiB Dsks No 279.3 GiB	
Esc = Exit Menu F1/Shi Space/+/- = Select disk for		reate volume	

If the disks that you selected contains files or data, the following message appears on the screen. To proceed, perform either of the following:

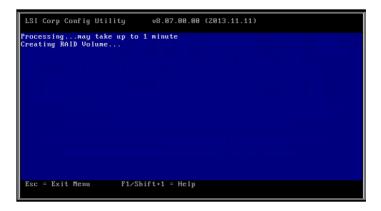
- Click any key to continue.
- Press <M> to keep existing data on the first disk. If you choose this option, data on the first disk will be mirrored on the second disk that you will add to the volume later. Ensure the data you want to mirror is on the first disk.
- Press <D> to overwrite any data and create the new IM array on the selected disks.



- 8. Repeat step 6 7 to add another disk to the volume.
- 9. When done, press <C> to proceed with the creation of the new volume.
- 10. Select Save changes then exit this menu.



11. Wait while utility creates the volume.



12. When done, the utility displays the Adapter Properties screen. From this screen, click RAID Properties.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
SAS Address NUDATA Version Status Boot Order Boot Support	Asus SAS3000 06 02:00 3.00.02.00-IR 500E0100:1402121A 03.05.00.04 Enabled 0 Enabled BIOS & OS]
SAS Topology Advanced Adapter Properties	
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

13. From the Select New Volume Type screen, click View Existing Volume.



14. From the View Volume screen, the utility displays the new volume you created.

LSI Corp Config Utility View Volume SAS3008	v8.07.00.00 (2013.11.11)
Volume Identifier Type Size Status Task Hamage Volume	1 of 1 LSI Logical Volume 3000 RAID 1 278.4 GiB Optimal 3% Initialized
Slot Device Identifier Num Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS	BAID Hot Drive Pred Disk Disk Spr Status Fail Size 0006 Yes No Primary No 278.4 GiB 0006 Yes No Secondary No 278.4 GiB
Esc = Exit Menu F1/Sh Enter=Select Item Alt+N=Ne:	

2.2.2 RAID 1E/10 volume

The RAID 1E/10 supports three to ten disks, or seven mirrored disks plus two hot spare disks.

Use odd numbers of hard disk drives to create a RAID 1E volume; use even numbers of hard disk drives to create a RAID 10 volume.

To create a RAID 1E/10 volume:

- 1. Turn on the system after installing all SAS hard disk drives.
- 2. During POST, press <Ctrl>+<C> to enter the SAS configuration utility.





To avoid data loss, do not turn off the system when rebuilding.

3. From the Adapter List screen, select an item and press <Enter>.



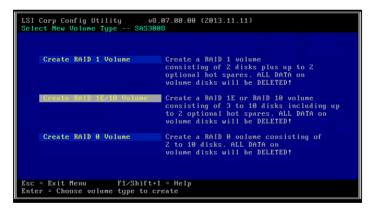


The number of items displayed depends on the controller.

4. From the Adapter Properties screen, use the arrow keys to select RAID Properties, then press <Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
Adapter PCI Slot PCI Address(Bus∕Dev) MPT Firmware Revision SAS Address NUDATA Version Status Boot Drder Boot Support	Asus SAS3008 86 92:00 3.00.02.00-IR 500E0180:1402121A 03.05.00.04 Enabled 0 Enabled BIOS & OS]
SAS Topology	
Advanced Adapter Properties	
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

 From the Select New Volume Type screen, use the arrow keys to select Create RAID 1E/10 Volume then press <Enter>.



 From the Create New Volume screen, move the cursor to the RAID Disk column of an available disks then press <+>, <->, or <Space> to include the disks into the array.

LSI Corp Config Utility Create New Volume SAS3008				
Volume Type: Volume Size:	RAID	1		
Slot Device Identifier Num 8 SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	0006 [No]	Drive Pred Status Fail No No No No	Size 279.3 GiB 279.3 GiB 279.3 GiB	
Esc = Exit Menu F1/Shi Space/+/- = Select disk for		C = Create volum	e	v



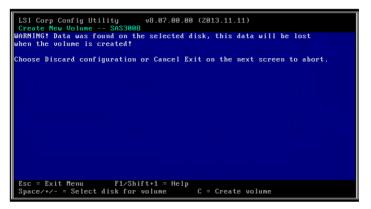
By default, the **RAID Disk** field shows **No** before volume creation. This field is grayed out under the following conditions:

- The disk does not meet the minimum requirements for use in a RAID volume.
- The disk is not large enough to mirror existing data on the primary drive.
- The disk is already part of another volume.
- 7. If a selected disk contains no files or data, the utility adds the disk to the array.

LSI Corp Config Utility Create New Volume SAS3008					
Volume Type: Volume Size:	RAID 278.4				
Slot Device Identifier Num Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	0006 [Yes] 0006 Yes] 0006 [No] 0006 [No]	Drive Status Primary Secondary Max Dsks Max Dsks	Fail No No No	279.3 GiB 279.3 GiB 279.3 GiB	
Esc = Exit Menu F1/Shi Space/+/- = Select disk for		C = Create u	olume		

If a selected disk contains files or data, the following message appears on the screen. To proceed, do either of the following:

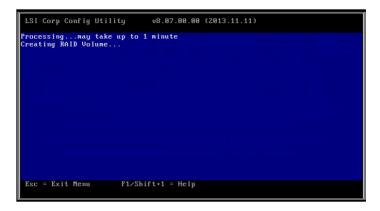
- Click any key to continue.
- Press <M> to keep existing data on the first disk. If you choose this option, data on the first disk will be mirrored on the second disk that you will add to the volume later. Ensure the data you want to mirror is on the first disk.
- Press <D> to overwrite any data and create the new IM array on the selected disks.



- 8. Repeat step 6 7 to add the other disks to the array.
- 9. When done, press <C> to continue with the creation of the new volume.
- 10. Select Save changes then exit this menu to create the volume.

LSI Corp Conf	ig Utility v8	3.07.00.00 (2013.11.11)
	Create and	save new volume?
	Cancel Exi Save chang	t jes then exit this menu
		aanges then exit this menu Configuration Utility and Reboot
Esc = Exit Men	nu F1/Shift+	-1 = Help

11. Wait while utility creates the volume.



12. When done, the utility displays the **Adapter Properties** screen. To check the new volume you created, click **RAID Properties**.

LSI Corp Config Utility Adapter Properties SASS		(2013.11.11)
Adapter PCI Slot PCI Address(Bus, MPT Firmware Ret SAS Address NUDATA Version Status Boot Order Boot Support	ision	Asus SAS3008 06 02:08 3:00.02.00-IR 500E0100:1402121A 03.05.08.04 Enabled 0 [Enabled BIOS & OS]
RAID Properties SAS Topology		
Advanced Adapter	Properties	
Esc = Exit Menu F1/S Enter = Select Item -/+/		Item

13. From the Select New Volume Type screen, click View Existing Volume.

LSI Corp Config Utility v8.07.00.00 (2013.11.11)				
Select New Volume Type SAS300	8			
View Existing Volume	View the existing configuration.			
Create RAID 1 Volume	Create a RAID 1 volume consisting of 2 disks plus up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!			
Create RAID 1E∕10 Volume	Create a RAID 1E or RAID 10 volume consisting of 3 to 10 disks including up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!			
Create RAID 0 Volume	Create a RAID 0 volume consisting of 2 to 10 disks. ALL DATA on volume disks will be DELETED!			
Esc = Exit Menu F1/Shift+1 = Help Enter = Choose volume type to create				

14. From the View Volume screen, the utility displays new volume you created.

LSI Corp Config Utility View Volume SAS3008 Volume	v8.07.00.00 (2013.11.11) 1 of 1
Identifier Type Size Status Task Hanage Volune	LSI Logical Volume 3000 RAID 10 556.9 GiB Optimal 0% Initialized
Slot Device Identifier Num Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS	RAID Hot Drive Pred Disk Disk Spr Status Fail Size 0806 Yes No OK No 278.4 GiB 0806 Yes No Ok No 278.4 GiB 0806 Yes No Ok No 278.4 GiB 08066 Yes No Ok No 278.4 GiB
3 SEAGATE ST3300656SS Esc = Exit Menu F1/Shi Enter-Select Item Alt+N=Nex	

2.2.3 RAID 0 volume

The RAID 0 feature supports volumes with two to ten disks. You may combine an RAID 0 volume with an RAID 1 or RAID 1E/10 volume.

To create a RAID 0 volume:

- 1. Turn on the system after installing all SAS hard disk drives.
- 2. During POST, press <Ctrl>+<C> to enter the SAS configuration utility.

```
LSI Corporation MPT SAS3 BIOS
MPT3BIOS-8.07.00.00 (2013.11.11)
Copyright 2000-2013 LSI Corporation.
Press Ctrl-C to start LSI Corp Configuration Utility...
```



To avoid data loss, do not turn off the system when rebuilding.

3. From the Adapter List screen, select an item and press <Enter>.





The number of items displayed depends on the controller.

4. From the Adapter Properties screen, use the arrow keys to select RAID Properties, then press <Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
Adapter PCI Slot PCI Address(Bus/Dev) MPT Firmware Revision SAS Address NUDATA Version Status Boot Order Boot Support	Asus SAS3008 86 92:80 3.00.02.00-IR 500E0180:1402121A 03.05.00.04 Enabled 0 FEnabled BIDS & OS]
SAS Topology	
Advanced Adapter Properties	
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

5. From the Select New Volume Type screen, use the arrow keys to select Create RAID 0 Volume then press <Enter>.



6. From the **Create New Volume** screen, move the cursor to the **RAID Disk** column of an available disks then press <+>, <->, or <Space> to include the disks into the array.

LSI Corp Config Utility Create New Volume SAS3008	3			
Volume Type: Volume Size:	RAID			
Slot Device Identifier Num B SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	0006 [No]	No No No	Size 279.3 GiB 279.3 GiB 279.3 GiB 279.3 GiB	
Esc = Exit Menu F1/Shi Space/+/- = Select disk for		C = Create volume	e	



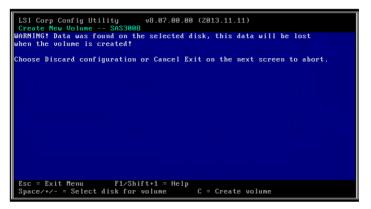
By default, the **RAID Disk** field shows No before volume creation. This field is grayed out under the following conditions:

- The disk does not meet the minimum requirements for use in a RAID volume.
- The disk is not large enough to mirror existing data on the primary drive.
- The disk is already part of another volume.
- 7. If a selected disk contains no files or data, the utility adds the disk to the array.

LSI Corp Config Utility Create New Volume SAS3008		
Volume Type: Volume Size:	RAID 1 278.4 GiB	
Slot Device Identifier Mum Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	Disk Status 0006 [Yes] Primary 0006 [Yes] Secondary 0006 [No] Max Dsks	Pred Disk Fail Size No 279.3 GiB No 279.3 GiB No 279.3 GiB No 279.3 GiB
Esc = Exit Menu F1/Shi Space/+/- = Select disk for		blume

If a selected disk contains files or data, the following message appears on the screen. To proceed, do either of the following:

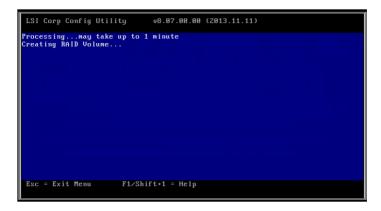
- Click any key to continue.
- Press <M> to keep existing data on the first disk. If you choose this option, data on the first disk will be mirrored on the second disk that you will add to the volume later. Ensure the data you want to mirror is on the first disk.
- Press <D> to overwrite any data and create the new IM array on the selected disks.



- 8. Repeat step 6 7 to add the other disks to the array.
- 9. When done, press <C> to continue with the creation of the new volume.
- 10. Select Save changes then exit this menu to create the volume.

LSI Corp Conf	ig Utility v8	3.07.00.00 (2013.11.11)
	Create and	save new volume?
	Cancel Exi Save chang	t jes then exit this menu
		aanges then exit this menu Configuration Utility and Reboot
Esc = Exit Men	nu F1/Shift+	-1 = Help

11. Wait while utility creates the volume.



12. When done, the utility displays the **Adapter Properties** screen. To check the new volume you created, click **RAID Properties**.

LSI Corp Config Utility Adapter Properties SASS		(2013.11.11)
Adapter PCI Slot PCI Address(Bus, MPT Firmware Ret SAS Address NUDATA Version Status Boot Order Boot Support	ision	Asus SAS3008 06 02:08 3:00.02.00-IR 500E0100:1402121A 03.05.08.04 Enabled 0 [Enabled BIOS & OS]
RAID Properties SAS Topology		
Advanced Adapter	Properties	
Esc = Exit Menu F1/S Enter = Select Item -/+/		Item

13. From the Select New Volume Type screen, click View Existing Volume.



14. From the View Volume screen, the utility displays new volume you created.

LSI Corp Config Utility View Volume SAS3008	v8.07.00.00 (2013.11.11)			
Volume Identifier Type Size Status Task Hanage Volume	1 of 1 LSI Logical Volume 3000 RAID 0 1.086 TiB Optimal None			
Slot Device Identifier Num 8 SEAGATE ST33086565S 1 SEAGATE ST33086565S 2 SEAGATE ST3308656SS 3 SEAGATE ST3308656SS	RAID Hot Drive Pred Disk Disk Spr Status Fail Size 0806 Ves No Ok No 278.4 GiB 0806 Ves No Ok No 278.4 GiB 08066 Ves No Ok No 278.4 GiB 08066 Yes No Ok No 278.4 GiB 08066 Yes No Ok No 278.4 GiB 08066 Yes No Ok No 278.4 GiB			
Esc = Exit Menu F1/Shift+1 = Help Enter=Select Item Alt+N=Next Volume				

2.2.4 Managing the RAID Volumes

This section shows how to view volume properties, manage hot spare disk, perform volume consistency check, activate the volume, delete volume, and expand the volume capacity using the utility.

Viewing volume properties

To view volume properties:

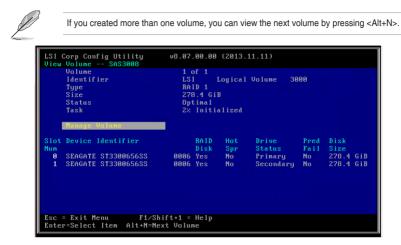
1. From the Adapter Properties screen, use the arrow keys to select RAID Properties, then press <Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
Adapter PCI Slot PCI Address(Bus/Dev) MTF Firmware Revision SAS Address NUDATA Version Status Boot Order Boot Support MAID Properties SAS Topology Advanced Adapter Properties	Asus SAS3008 96 02:00 3:00.02.00-1R 500E01308:1402121A 03.05.00.04 Enabled 0 [Enabled BIOS & OS]
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

2. From the Select New Volume Type screen, click View Existing Volume.

LSI Corp Config Utility v8.07.00.00 (2013.11.11) Select New Volume Type SAS3008		
View Existing Volume	View the existing configuration.	
Create RAID 1 Volume	Create a RAID 1 volume consisting of 2 disks plus up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!	
Create RAID 1E/10 Volume	Create a RAID 1E or RAID 10 volume consisting of 3 to 10 disks including up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!	
Create RAID 0 Volume	Create a RAID 0 volume consisting of 2 to 10 disks. ALL DATA on volume disks will be DELETED!	
Esc = Exit Menu F1/Shift+1 = Help Enter = Choose volume type to create		

3. From the **View Volume** screen, you can view properties of the RAID volume(s) you created. If you have configured a hot spare for a volume, it will also be listed.



Managing hot spares

You may configure one disk as a global hot spare to protect critical data on the RAID 1/1E/10 volume(s). You can create the hot spare disk at the same time you create the RAID 1/1E/10 volume. Refer to this section when adding a hot spare disk on an existing volume.



If a disk on an RAID 1/1E/10 volume fails, the utility automatically rebuilds the failed disk data on the hot spare. When the failed disk is replaced, the utility assigns the replacement as the new hot spare.

To create a hot spare:

1. From the Adapter Properties screen, use the arrow keys to select RAID Properties, then press <Enter>.



2. From the Select New Volume Type screen, click View Existing Volume.

LSI Corp Config Utility v8.87.00.00 (2013.11.11) Select New Volume Type SAS3008		
View Existing Volume	View the existing configuration.	
Create RAID 1 Volume	Create a RAID 1 volume consisting of 2 disks plus up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!	
Create RAID 1E∕10 Volume	Create a RAID 1E or RAID 10 volume consisting of 3 to 10 disks including up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!	
Create RAID 0 Volume	Create a RAID 0 volume consisting of 2 to 10 disks. ALL DATA on volume disks will be DELETED!	
Esc = Exit Menu F1/Shift+1 = Help Enter = Choose volume type to create		

3. From the View Volume screen, click Manage Volume.

	Corp Config Utility Volume SAS3008 Volume Identifier Type Size Status Task	1 LS RA 27 Op	of 1		00	
Num	Hanage Volume Device Identifier SEAGATE ST3300656SS SEAGATE ST3300656SS		RAID Disk Yes Yes	Hot Spr No No	No	
	= Exit Menu F1/Shif r=Select Iten Alt+N=Next					

4. From the Manage Volume screen, select Manage Hot Spares then press <Enter>.

LSI Corp Config Utility Manage Volume SAS3008	v8.07.00.00 (2013.11.11)	
ldentifier Type Size Status Task	LSI Logical Volume 3000 RAID 1 278.4 GiB Optimal 4% Initialized	
Manage Hot Spares Consistency Check Activate Volume		
Delete Volume		
Online Capacity Expan	sion	
Esc = Exit Menu F1/S Enter = Select Item	hift+1 = Help	

- From the Manage Hot Spares screen, use the arrow keys to select the disk you want to configure as hot spare. Move the cursor to the Hot Spr column then press <+>, <->, or <Space>.
- 7. Press <C> to commit the changes.

LSI Corp Config Utility Manage Hot Spares SAS300						
ldentifier Type Size Status Task	LSI Logical Volume 3000 RálD 1 278.4 GiB Optimal S× Initialized					
Slot Device Identifier Num Ø SEAGATE ST3300656SS 1 SEAGATE ST3300656SS 2 SEAGATE ST3300656SS 3 SEAGATE ST3300656SS	Hot Drive Pred Disk Spr Status Fail Size 8006 Hol RAID No 278.4 G1B 8006 Hol RAID No 278.4 G1B 8006 Hol RAID No 278.4 G1B 8006 Hol RAID No 279.3 G1B 8006 Hol No 279.3 G1B					
	Esc = Exit Menu F1/Shift+1 = Help Space/+/- = Change Item C = Commit Changes					

8. Select **Save changes then exit this menu** to create the hot spare.

LSI Corp Config	Utility v8.07.00.00 (2013.11.11)
	Perform Hot Spare update to existing volume? Cancel Exit Save changes then exit this menu
	Discard changes then exit this menu Exit the Configuration Utility and Reboot
Esc = Exit Menu	F1∕Shift+1 = Help
ESC - EXIC HEIM	rizanii t+i - neip

9. Wait for the utility to finish.

LSI	Corp	Conf ig	Utility	v8.0	7.00.00	(2013.11.11)		
				to 1 minu Spare	te			

Running a consistency check

To run a consistency check on the RAID volume:

1. From the Adapter Properties screen, use the arrow keys to select RAID Properties, then press <Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
Adapter PCI Slot PCI Address(Bus/Dev) MPT Firmware Revision SA8 Address NUDATA Version Status Boot Order Boot Support FAID Properties SAS Topology Advanced Adapter Properties	Asus SAS3008 06 02:00 3.00.02.00-IR 500E0180:1402121A 03.05.00.04 Enabled 0 IEnabled BIOS & OS]
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

2. From the Select New Volume Type screen, click View Existing Volume.

LSI Corp Config Utility v8.87.80.80 (2013.11.11) Select New Volume Type SAS3808						
View Existing Volume	View the existing configuration.					
Create RAID 1 Volume	Create a RAID 1 volume consisting of 2 disks plus up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!					
Create RAID 1E∕18 Volume	Create a RAID 1E or RAID 10 volume consisting of 3 to 10 disks including up to 2 optional hot spares. ALL DATA on volume disks will be DELETED!					
Create RAID 0 Volume	Create a RAID 0 volume consisting of 2 to 10 disks. ALL DATA on volume disks will be DELETED!					
Esc = Exit Menu F1/Shift+1 Enter = Choose volume type to cr						

3. From the View Volume screen, click Manage Volume.

	Corp Config Utility Volume SAS3008 Volume Identificr Type Size Status Task	1 LS RA 27 Op	of 1			00		
Num	Ranage Volume Device Identifier SEAGATE ST3300656SS SEAGATE ST3300656SS	0006	RAID Disk Yes Yes	Hot Spr No	Drive Status Primary Secondary	Fail No	<mark>Size</mark> 278.4	
	= Exit Menu F1/Shif r=Select Item Alt+N=Next				8.1			

4. From the Manage Volume screen, select Consistency Check then press <Enter>.

LSI Corp Config Utility Manage Volume SAS3008	v8.07.00.00 (2013.11.11)
Jentifier Type Size Status Task Manage Hot Spares Consistency Check Activate Volume Delete Volume	LSI Logical Volume 3000 RAID 1 270.4 GiB Optimal 5% Initialized
Online Capacity Expan	nsion
Esc = Exit Menu F1/S Enter = Select Item	Shift+1 = Help

5. Press <Y> to proceed with the volume consistency check.



If you see a screen similar to the one shown below, press <Enter> to proceed with the volume consistency check.





To check the status, go to the **Manage Volume** screen and look at the information displayed on the **Volume Status** field.

Identifier	LSI Logical Volume 3000
Туре	RAID 1
Size	278.4 GiB
Status	Optimal
Task	67. Initialized
Volume Status	User initiated Consistency Check Pending
Manage Hot Spares	
Consistency Check	

Activating a volume

If a volume is removed from one controller/computer or moved to another, the volume is considered inactive. To add the volume back to the system, you need to reactivate the volume.

To activate the volume:

1. Go to the Manage Volume screen, select Activate Volume then press <Enter>.

LSI Corp Config Utility Manage Volume SAS3008	v8.07.00.00 (2013.11.11)
Identifier Type Size Status Task Volume Status Manage Hot Spares Consistency Check Activate Volume Delete Volume	LSI Logical Volume 3000 RAID 1 278.4 GiB Optimal 6% Initialized User initiated Consistency Check Pending
Online Capacity Expans	s10n
Esc = Exit Menu F1/S Enter = Select Item	hift+1 = Help

2. Press <Enter> to activate the inactive RAID volume.



Deleting a volume



- You cannot recover lost data if you delete a volume. Ensure you back up important data before deleting a volume.
- The hot spare disk that you configured for a volume is also be deleted when you delete the volume.
- If you delete a RAID 1 volume, the data is preserved on the primary disk.

To delete a volume:

1. Go to the Manage Volume screen, select Delete Volume then press <Enter>.

LSI Corp Config Utility Manage Volume SAS3008	v8.07.00.00 (2013.11.11)
Identifier Type Size Status Task Manage Hot Spares Consistency Check Activate Volume	LSI Logical Volume 3000 RAID 1 278.4 GiB Optimal 5% Initialized
Delete Volume	
Online Capacity Expan	sion
Esc = Exit Menu F1/S Enter = Select Item	hift+1 = Help

2. Press <Y> to delete.



Expanding the volume capacity

You may use two new hard disk drives to replace the existing one, and expand the capacity of the RAID volume.



The capactiy of th new hard disk drives should be 50GB larger than the existing one.

This function is available only when the RAID 1 volume is optimal.

To expand the capacity of the currently displayed RAID volume:

1. Go to the Manage Volume screen, select Online Capacity Expansion then press <Enter>.

LSI Corp Config Utility Manage Volume SAS3008	v8.07.00.00 (2013.11.11)	
ldentifier Type Size Status Task	LSI Logical Volume RAID 1 278.4 GiB Optimal 8% Initialized	3000
Manage Hot Spares Consistency Check Activate Volume		
Delete Volume Online Capacity Expan	sion	
Esc = Exit Menu F1/S Enter = Select Item	hift+1 = Help	

2. Press <Enter> to proceed with the online capacity expansion.



2.2.5 Viewing SAS topology

To view the SAS Topology:

1. Go to the Adapter Properties screen, select SAS Topology then press < Enter>.

LSI Corp Config Utility v8.07.00.00 Adapter Properties SAS3008	(2013.11.11)
SAS Address NUDATA Version Status Boot Order Boot Support RAID Properties SAS Topology Advanced Adapter Properties	Asus SAS3000 06 02:00 3.00.02.00-IR 500E0180:1402121A 03.05.00.04 Enabled 0 [Enabled BIDS & OS]
Esc = Exit Menu F1/Shift+1 = Help Enter = Select Item -/+/Enter = Change	Item

Information about the volume and its member disks are displayed.

LSI Corp Config Utility SAS Topology SAS3008	v8.07.00.00 (2013.11.11)	
Asus SAS3008(02:00)	Device Identifier	Device Info
L Controller L RAID1 VOL	Direct Attach Devices LSI Logical Volume 3000	Controller
		*
Esc = Exit F1/Shift+1 = Alt+D = Device Properties		

2. Press <Alt>+<D> to display device properties, or <Alt>+<M> to display more keys.

LSI Corp Config Utility v8.07.00.00 (2013.11.11) SAS Topology SAS3008
More keys for the SAS Topology display:
Alt+B = Select or deselect a device as the preferred boot device
Alt+A = Select or deselect a device as the alternate boot device
Enter = On a SAS Enclosure or Expander - Expand or Collapse Item
Enter = On a Disk Drive - Turn on the Locate LED (next key press turns off)

2.2.6 Global Properties

To access the Global Properties menu:

Go to the Adapter List screen, then press <Alt>+<N>.



From Global Properties menu, you can change the following settings:

A. Pause When Boot Alert Displayed

Sets whether to pause or not when the boot alert displays. Configuration options: [Yes] [No]



B. Boot Information Display Mode

Sets the disk information display mode.

Configuration options: [Display adapters & installed devices] [Display adapters only] [Display adapters and all devices] [Display minimal information]

LSI Corp Config Utility v8.07.00.00 (2013.11.11) Adapter List Global Properties
Pause When Boot Alert Displayed [Yes]
Boot Information Display Mode Support Interrupt (Hock interrupt, the Default)
Restore Defaults
Esc = Exit Menu F1/Shift+1 = Help
Alt+N = Adapter List -/+ = Change Item

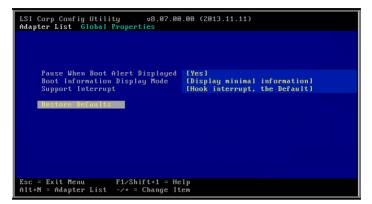
C. Support Interrupt

Configuration options: [Hook interrupt, the Default] [Bypass interrupt hook]



D. Restore Defaults

This option allows you to discard the selections you made and restore the system defaults.



2.3 MegaRAID Storage Manager

MegaRAID Storage Manager software enables you to configure, monitor, and maintain storage configurations on LSI SAS controllers. The MegaRAID Storage Manager graphical user interface (GUI) makes it easy for you to create and manage storage configurations.

2.3.1 Hardware and Software Requirements

The hardware requirements for MegaRAID Storage Manager software are as follows:

- PC-compatible computer with an IA-32 (32-bit) Intel Architecture processor or an EM64T (64-bit) processor and at least 128 Mbytes of system memory (256 Mbytes recommended)
- Disk drive with at least 50 Mbytes available free space

Refer to your server documentation and to the operating system documentation for more information on hardware and operating system requirements.

2.3.2 Installing MegaRAID Storage Manager Sofware on Microsoft Windows OS

Follow these steps if you need to install MegaRAID Storage Manager software on a system running Microsoft Windows OS:

1. Insert the MegaRAID Storage Manager software installation CD in the CD-ROM drive.

If necessary, find and double-click the setup.exe file to start the installation program.

2. When the Welcome screen appears, click Next.

If MegaRAID Storage Manager software is already installed on this system, the Program Maintenance screen appears. Read the screen text and select **Modify**, **Repair**, or **Remove**.

3. When the next screen appears, read and accept the user license, and click Next.

The Customer Information screen appears, as shown in the following figure.

📸 MegaRAID Storage Manager v6.50.1100 - InstallShield Wizard	—
Customer Information	
Please enter your information.	
User Name:	
ASUS	
Organization:	
Allow availability of this application for:	
 All users 	
Only for current user (ASUS)	
InstallShield	
< Back Ne	xt > Cancel

- 4. Enter your user name and organization name. In the bottom part of the screen, select an installation option:
 - If you select All users, any user with administrative privileges can use this version of MegaRAID Storage Manager software to view or change storage configurations.
 - If you select Only for current user, the MegaRAID Storage Manager shortcuts and associated icons will be available only to the user with this user name.
- 5. Click Next to continue.
- 6. On the next screen, accept the default Destination Folder, or click **Change** to select a different destination folder. Click **Next** to continue.

The Setup Type screen appears, as shown in the following figure.

📸 MegaRAID Storage Manager v6.50.1100 - InstallShield Wizard 🧮	×
Setup Type Choose the setup type that best suits your needs.	
Please select a setup type.	
Complete This option will install all program features.	
Custom Installation	
InstallShield Cancel]

- 7. Select one of the Setup options. The options are fully explained in the screen text.
 - Normally, you would select **Complete** if you are installing MegaRAID Storage Manager software on a server.
 - Select Custom Installation if you want to select individual program components.
- 8. Click Next to continue.

If you selected **Custom Installation** as your setup option, the second Setup Type screen appears, as shown in the following figure.

If you select **Complete** as your setup option, the Installation Wizard is ready to install MSM. To begin installation, click on Install on the next screen that appears.

Setup Typ	pe					4
Choose t	he setup type	that best sui	its your nee	ds.		
Please se	elect a setup t	ype.				
Clien	ıt					
15	This option servers.	will only instal	ll componen	ts required t	o remotely view	v and configure
O Serv	er					
1	This option	will only instal	ll componen	ts required f	for remote serv	er management.
Stan	dAlone					
1	This option	will only instal	ll componen	ts required f	or local server	managem <mark>e</mark> nt.
O Cust		ch specific pro	ogram featu	re to install.		
tallShield -						
				Back	Next >	Cancel

- 9. Select one of the custom setup options. The options are fully explained in the screen text.
 - Select Client if you are installing MegaRAID Storage Manager software on a PC that will be used to view and configure servers over a network. To begin installation, click on Install on the next screen that appears.
 - Select Server to install only those components required for remote server management. To begin installation, click on Install on the next screen that appears.
 - Select StandAlone if you will use MegaRAID Storage Manager software to create and manage storage configurations on a standalone workstation. To begin installation, click on Install on the next screen that appears.
 - Select **Custom** if you want to specify individual program features to install.

If you select **Custom**, a window listing the installation features appears, as shown in the following figure. Select the features you want on this screen.

Custom Setup	torage Manager v6.50.1100 - Ins) gram features you want installed.	
	n the list below to change how a fi Client Server Framework Plugins	eature is installed. Feature Description
	 Monitor Optional Utilities This feature will be instal B This feature, and all subf 	This feature requires 0KB on lled on local hard drive. eatures, will be installed on local hard drive.
Install to: C:\Program File:	This feature will be instal	
nstallShield	 This feature will be instal This feature will not be a 	

- 10. Click Next to proceed.
- 11. Click Install to install the program.
- 12. When the final Configuration Wizard screen appears, click **Finish**.

If you select **Client** installation for a PC used to monitor servers, and if there are no available servers with a registered framework on the local subnet (that is, servers with a complete installation of MegaRAID Storage Manager software), the server screen will appear, as shown in the following figure. The server screen will not list any servers. You can use this screen to manage systems remotely.

MegaRAID Storage Manager - v2.	12-00 Configuration Wizard	×
Sort By Name 💌		LSI LOGIC *
Connect to ren	note serveral: 1P 147/145/80/123 Up	date
	Connect Cancel	

2.3.3 Installing MegaRAID Storage Manager Sofware for Linux

Follow these steps if you need to install MegaRAID Storage Manager software on a system running Red Hat Linux or SUSE Linux:

- 1. Copy the MSM_linux_installer...tar.gz file to a temporary folder.
- 2. Untar the MSM_linux_installer...tar.gz file using the following command:

tar -zxvf MSM_linux_installer...tar.gz

A new disk directory is created.

- 3. Go to the new **disk** directory.
- 4. In the disk directory, find and read the readme.txt file.
- 5. To start the installation, enter the following command:

csh install.sh -a

If you select **Client** installation for a PC used to monitor servers, and if there are no available servers with a registered framework on the local subnet (that is, servers with a complete installation of MegaRAID Storage Manager software), the server screen appears. The server screen does not list any servers. You can use this screen to manage systems remotely.

2.3.4 Linux Error Messages

The following messages may appear while you are installing MegaRAID Storage Manager software on a Linux system:

More than one copy of MegaRAID Storage Manager software has been installed.

This message indicates that the user has installed more than one copy of MegaRAID Storage Manager software. (This can be done by using the rpm-force command to install the rpm file directly, which is not recommended, instead of using the install.sh file.) In such cases, the user must uninstall all the rpm files manually before installing MegaRAID Storage Manager software with the procedure listed previously.

The version is already installed.

This message indicates that the version of MegaRAID Storage Manager software you are trying to install is already installed on the system.

The installed version is newer.

This message indicates that a version of MegaRAID Storage Manager software is already installed on the system, and it is a newer version than the version you are trying to install.

Exiting installation.

This is the message that appears when the installation is complete.

RPM installation failed.

This message indicates that the installation failed for some reason. Additional message text explains the cause of the failure.

2.3.5 Starting MegaRAID Storage Manager Software

Follow these steps to start MegaRAID Storage Manager software and view the main window:

- 1. Start the program using the method required for your operating system environment:
 - To start MegaRAID Storage Manager software on a Microsoft Windows system, select Start > Programs > MegaRAID Storage Manager > StartupUI, or doubleclick the MegaRAID Storage Manager shortcut on the desktop.



If a warning appears stating that Windows Firewall has blocked some features of the program, click **Unblock** to allow MegaRAID Storage Manager software to start. (The Windows Firewall sometimes blocks the operation of programs that use Java.)

- To start MegaRAID Storage Manager software on a Red Hat Linux system, select Applications > System Tools > MegaRAID Storage Manager StartupUI.
- To start MegaRAID Storage Manager software on a SUSE SLES system, select Start > System > More Programs > MegaRAID Storage Manager.
- When the program starts, the Select Server window appears, as shown in the following figure.



If the circle in the server icon is yellow instead of green, it means that the server is running in a degraded state—for example, because a disk drive used in a virtual disk has failed. If the circle is red, the storage configuration in the server has failed.



To access servers on a different subnet, type in the box at the bottom of the screen the IP address of a server in the desired subnet where the MegaRAID Storage Manager software is running, and click **Update**. If you check the **Connect to remote server at: IP** address box, you can also access a standalone (remote) installation of MegaRAID Storage Manager software, if it has a network connection.

3. Double-click the icon of the server that you want to access. The Server Login window appears, as shown in the following figure.

Enter User Name & Password	×
	LSI
Server :	127.0.0.1
<u>U</u> ser Name:	
Password:	
Login <u>M</u> ode:	Full Access
Login	Cancel

- 4. Select an access mode from the drop-down menu.
 - Select Full Access if you need to both view the current configuration and change the configuration.
 - Select **View Only** if you need to only view and monitor the configuration.
- 5. Enter your user name and password, and click Login.



If the computer is networked, this is the login to the computer itself, not the network login.

You must enter the root/administrator user name and password to use Full Access mode. If your user name and password are correct for the Login mode you have chosen, the main MegaRAID Storage Manager window appears.

2.3.6 MegaRAID Storage Manager Window

This section describes the MegaRAID Storage Manager window, which is shown in the following figure.

anage				
	<u>G</u> o To Log <u>T</u> ools <u>H</u> elp			
				LSI
vsical	Logical			
DC-PC		Properties		
🔶 P 🛙	KE 2008 (Bus 4,Dev 0)	Propercies		
100	Slot: 0, SATA, 74.530 GB, Online Slot: 1, SATA, 74.530 GB, Online	Host Name	DC-PC	
-	30L 1, 3818, 74.30 00, 01116	IP Address	127.0.0.1	
		Operating System	Windows Vista	
		OS Version	6.1	
		OS Architecture	x86	
	Error Level Dote / Time	Description		
	Error Level Dote / Time		Net: 127.8.1. Acces Mole: Full Clent Time: 2019-07-28.2028-41	
	[Information, 2010-03-29, 20:28:41	Successful log on to the server User: DC, C	New 1973.1.1. down Node, fel. Gwr Tree, 2019-029-029-021-1 - Gwr 1923.0.1. Gwr Tree, 2019-02-02-02	
	[Information, 2010-03-29, 20:28:41 [Information, 2010-03-29, 20:28:04 [Information, 2010-03-29, 20:27:50	Successful log on to the server User: DC, C Successful log out from the server User: DC Successful log on to the server User: DC, C	Client: 127.0.0.1, Client Time: 2010-03-29,20:28:04 lient: 127.0.0.1, Access Mode: Full, Client Time: 2010-03-29,20:27:50	
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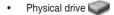
Physical/Logical View Panel

The left panel of the MegaRAID Storage Manager window displays either the Physical view or the Logical view of the system and the devices in it, depending on which tab is selected.

- The Physical view shows the hierarchy of physical devices in the system. At the top of
 the hierarchy is the system itself. One or more controllers are installed in the system.
 The controller label identifies the MegaRAID controller, such as the ASUS PIKE II 3008
 Series controller, so that you can easily differentiate between multiple controllers. Each
 controller has one or more ports. Disk drives and other devices are attached to the ports.
- The Logical view shows the hierarchy of controllers, virtual disks, and disk groups that are defined on the system. (Physical drives also appear in the Logical view, so you can see which physical drives are used by each virtual disk.)

The following icons in the left panel represent the controllers, disk drives, and other devices:

- System
- Controller
- Port Slot
- Volume
- Virtual disk



A red circle to the right of an icon indicates that the device has failed. For example, this icon indicates that a physical drive has failed:

A yellow circle to the right of an icon indicates that a device is running in a degraded state. For example, this icon indicates that a virtual disk is running in a degraded state because a disk drive has failed:

Properties View Panel

The right panel of the MegaRAID Storage Manager window has the **Properties** tab that displays information about the selected device. For example, if a controller icon is selected in the left panel, the Properties tab lists information such as the controller name, NVRAM size, and device port count.

Event Log Panel

The lower part of the MegaRAID Storage Manager window displays the system event log entries. New event log entries appear during the session. Each entry has an ID, a timestamp and date, an error level indicating the severity of the event, and a brief description of the event.

Menu Bar

Here are brief descriptions of the main selections on the MegaRAID Storage Manager menu bar.

Manage Menu

The **Manager** menu has an **Exit** option for exiting from the MegaRAID Storage Manager software. It also has a **Refresh** option for updating the display in the MegaRAID Storage Manager window. (Refresh is seldom required; the display normally updates automatically.) The Manage menu options also include **Check Consistency**, **Initialize**, and **Show Progress**.

Go To Menu

The **Go To** menu is available when a controller, physical drive, or virtual disk is selected in the MegaRAID Storage Manager window. The **Go To** menu options vary depending on what type of device is selected in the left panel of the MegaRAID Storage Manager window. For example, the **Scan Foreign Configuration** option is available only when a controller is selected. The options also vary depending on the current state of the selected device. For example, if you select an offline physical drive, the **Make Drive Online** option will be available in the **Go To** menu.

Log Menu

The Log menu includes options for saving and clearing the message log.

Tools Menu

On the Tools menu you can select **Configure Alerts** to access the Event Configuration Notification screen, which you can use to set the alert delivery rules, event severity levels, exceptions, and email settings.

Help Menu

On the Help menu you can select **Help > Contents** to view the MegaRAID Storage Manager online help file. You can select **Help > About MegaRAID Storage Manager** to view version information for the MegaRAID Storage Manager software.



- When you use the MegaRAID Storage Manager online help, you may see a warning message that Internet Explorer has restricted the file from showing active content. If this warning appears, click on the active content warning bar and enable the active content.
- If you are using the Linux operating system, you must install Firefox[®] or Mozilla[®] for the MegaRAID Storage Manager online help to display.

Driver installation

This chapter provides instructions for installing the RAID card driver on different operating systems.



3.1 RAID driver installation

After creating the RAID sets for your server system, you are now ready to install an operating system to the independent hard disk drive or bootable array. This part provides instructions on how to install or update the RAID card drivers.



The RAID card driver might be included in the Linux OS installation CD, and could be loaded automatically during OS installation. However, we recommend using the RAID driver packaged in the RAID card support CD for better reliability.

3.1.1 Windows[®] Server 2012 R2 OS

During Windows® Server 2012 R2 OS installation

To install the RAID card driver when installing Windows® Server 2012 R2 OS:

- 1. Boot the computer using the Windows[®] Server 2012 R2 OS installation CD to start the **Windows[®] Setup** process.
- 2. Follow onscreen installation.



Ensure to choose Windows 2012 R2 Data center (Server with a GUI) when asked to select the type of operating system you want to install.

 From the Windows Setup window, click Custom: Install Windows only (Advanced).

2pgrade: Install Windows and keep files, settings, and applications The files, cettings, and applications are moved to Windows with the option. This option is only calledo-when a supported vestion of Windows is dready wanning on the computer.
(utom: Install Windows only (advanced) her files; setting; and applications servir moved to Windows with this option. If you want to make changes to partitions and drives, start the computer using the installation disc. We accommend backing up your files before you continue.

4. Select and click Load Driver.

	Name	Total size	Free space	Туре	
S.	Drive 0 Unallocated Space	279.4 GB	279.4 GB		
P	Drive 1 Unallocated Space	279.4 GB	279.4 GB		
P	Drive 2 Partition 1	100.0 MB	100.0 MB	System	
8	Drive 2 Partition 2	199.9 GB	199.9 GB	Primary	
P	Drive 2 Unallocated Space	79.4 GB	79.4 GB		
fe Refs	ech Delete	Eormat	* Ng	~	

- Remove the installation DVD on the disc drive and replace it with the bundled support DVD that contains the RAID driver.
- 6. Click **Browse** and locate the driver on the support DVD.
- 7. Select the driver from the list then click **Next**.

Select	the driver to install
	Laad diiwar 🔫
	Load armst. To install the device driver for your drive, insert the installation media containing the driver files, and then click OK. Note: The installation media can be a CD, DVD, or USB flash drive.
	Browse OK Cancel

🖌 🔏 Windows Setup	-
Select the driver to install	
LSI Adapter, SAS3 3008 Fury -StorPort (D1/AMD54-bitServer2012R2\isi_sas3 inf)	
Hide drivers that aren't compatible with this computer's hardware.	
Brgwse Bescan	Next

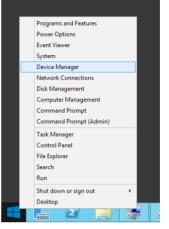
- 8. Wait for the driver installation to finish.
- 9. When done, remove the support DVD and replace it with the installation DVD
- 10. Continue installing the operating system and follow onscreen instructions to complete the installation.
- 11. (optional) Restart the computer.

	Name		Total size		-
				Free space	
¢		ion 1: System Reserved	350.0 MB	89.0 MB	System
a l	Drive 0 Partit	ion 2	1860.4 GB	1851.1 GB	Primary
	ch	× Delete	Format	* Ngw	

After Windows® Server 2012 R2 OS installation

To update the RAID card driver after installing Windows® Server 2012 R2 OS:

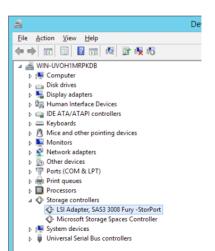
- Insert the support DVD that is bundled with your PIKE 3008 Series card into the disc drive.
- 2. Right-click on the Start button then click **Device Manager**.



- 3. Go to Storage Controllers then select LSI Adapter, SAS 3008 Fury-StorPort.
- 4. Double-click LSI Adapter, SAS3 3008 Fury-StorPort.



The controller name differs according to the installed SAS RAID card.



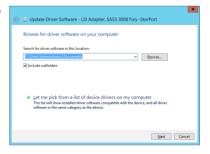
5. Go to the **Driver** tab then click on **Update Driver**.

LSI Adapter, SAS3 3008 Fury -StorPort Properties 🗶
General Driver Details Events Resources
LSI Adapter, SAS3 3008 Fury -StorPort
Driver Provider: LSI Corporation
Driver Date: 3/15/2013
Driver Version: 2.50.65.1
Digital Signer: Microsoft Windows
Driver Details To view details about the driver files.
Update Driver To update the driver software for this device.
Boll Back Driver If the device fails after updating the driver, roll back to the previously installed driver.
Disable Disables the selected device.
Uninstall To uninstall the driver (Advanced).
OK Cancel

6. Click Browse my computer for driver software.

0	Update Driver Software - LSI Adapter, SAS3 3008 Fury -StorPort	x
	How do you want to search for driver software?	
	 Search automatically for updated driver software Windows will search your computer and the laterna for the later driver software for your drevic, unless you've disabled this feature in your device installation settings. 	
	 Browse my computer for driver software Locate and install driver software manually. 	
		Cancel

 Click Browse, locate the installer on the support DVD, click OK when done, and then click Next.



- 8. Wait for the driver installation to finish.
- 9. When done, click **Close**.
- 10. Restart the system.

3.1.2 Red Hat[®] Enterprise Linux OS 5.x

To install the RAID card driver when installing Red Hat® Enterprise OS:

 Copy or unzip the dd.iso file to a USB storage device then connect the USB storage device to your system.

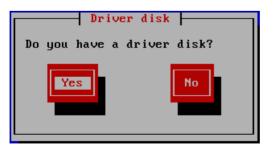


To get the **dd.iso** from the support CD, go to **Driver > Linux > mpt3sas-release\rhel5 > disks-1.**To download **dd.iso** from the ASUS website, visit www.asus.com.

- 2. Boot the system from the Red Hat[®] OS installation CD.
- 3. Key in linux dd, then press < Enter>.



4. Using the <Tab> key, select Yes then press <Enter>.



 From the Driver Disk Source window, select sdb from the list, select OK, then press <Enter>.

	le dev s for	
S S S S	da srØ sdb sr1 sr2 sdc	
OK		Cance 1

6. Select OK to continue.



7. Select dd.iso from the list, select OK, then press < Enter>.



8. If you want to install another driver, select **Yes** then press <Enter>. Otherwise, select **No** then press <Enter>.



9. Follow on-screen instructions to continue with the installation.

When you reach the part to select storage devices, the system should detect the PIKE card and the RAID volume if the driver is loaded successfully. The system may display a screen similar to the one shown below.

RED HAT ENTERPRISE LINUX 5	
Installation requires partitioning of your hard drive. By default, a partitioning layout is chosen which is reasonable for most users. You can either choose to use this or create your own.	
Remove all partitions on selected drives and create def	ault layout.
Encrypt system	
Select the drive(s) to use for this installation.	
🗹 sda 1428601 MB 🛛 LSI Logical Volume	
Sdf 981 MB JetFlash TS1GJFV10	<u>k</u>
Review and modify partitioning layout	
Release Notes	(<u> → N</u> ext

3.1.3 Red Hat[®] Enterprise Linux OS 6.x

To install the RAID card driver when installing Red Hat® Enterprise OS:

 Copy or unzip the dd.iso file to a USB storage device then connect the USB storage device to your system.



To get the **dd.iso** from the support CD, go to **Driver > Linux > mpt3sas-release\rhel6 > disks-1.**To download **dd.iso** from the ASUS website, visit www.asus.com.

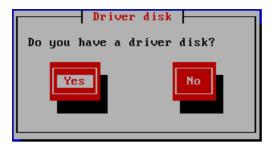
- 2. Boot the system from the Red Hat[®] OS installation CD.
- 3. From the initial installation page, use the arrow keys to select the instalation method then press <Esc> to enter the boot option.



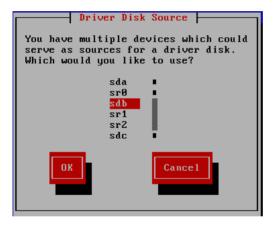
4. After the boot option, key in linux dd, then press < Enter>.



5. Using the <Tab> key, select Yes then press <Enter>.



5. From the Driver Disk Source window, select **sdb** from the list, select **OK**, then press <Enter>.



6. Select **OK** to continue.



7. Select dd.iso from the list, select OK, then press <Enter>.



 If you want to install another driver, select Yes then press <Enter>. Otherwise, select No then press <Enter>.



9. Follow on-screen instructions to continue with the installation.

When you reach the part to select storage devices, the system should detect the PIKE card and the RAID volume if the driver is loaded successfully. The system may display a screen similar to the one shown below.

ata Storage Device	s (to be mou	nted only)				Target Dev	ices		
Model	Capacity	Vendor	Identifier		Boot Loader	Model	Capacity	Identifier	II.
JetFlash TS1GJFV10		JetFlash	pci-0000:00:14.0-usb-0:13:1.0-						
LSI Logical Volume	1428604 MB	LSI	pci-0000:02:00.0-scsi-0:1:0:0						
			b	-					
				-					

3.1.3 SUSE Linux OS 11

1. Copy or unzip the **dd.iso** file to a USB storage device then connect the USB storage device to your system.



To get the **dd.iso** from the support CD, go to **Driver > Linux > mpt3sas-release\sles11 > disks-1.**To download **dd.iso** from the ASUS website, visit www.asus.com.

- 2. Boot the system from the SUSE OS installation CD.
- 3. From the initial installation page, press F6 and select Yes to load the driver.

SUSE Linux Enterprise Server		
	Boot from Hard Disk	
	Installation	
	Repair Installed System	
	Rescue System	
1 March Parlow	Check Installation Media	
	Firmware Test	
	Memory Test	
Boot Optio	ns	Yes No File URL
	Video Mode F4 Source F5 Kernel F 1024 x 768 CD-ROM Default	F6 Driver No

4. Select USB storage device from the list, select **OK**, then press <Enter>.

Please choose the Driver Update medium.
sr0: CD-ROM, ASUS DRW-24B5ST sr1: USB CD-ROM, AMI Virtual CDROM0 sr2: USB CD-ROM, AMI Virtual CDROM1 sda1: USB Partition, JetFlash TS1GJFU10 sdb: USB Disk, AMI Virtual Floppy0 sdc: USB Disk, AMI Virtual Floppy1 sdd: USB Disk, AMI Virtual HDisk0 sde: USB Disk, AMI Virtual HDisk1 sdf: USB Disk, AMI Virtual HDisk2 sg10: Disk, TOSHIBA DT01ACA1 other device
OK Back

5. Follow on-screen instructions to continue with the installation.

When you reach the part to select storage devices, the system should detect the PIKE card and the RAID volume if the driver is loaded successfully. The system may display a screen similar to the one shown below.

SUSE Linux Enterprise Preparation	G Preparing Hard Disk
 ✓ Welcome ✓ System Analysis ✓ Time Zone Installation 	
Server Scenario Installation Summary Perform Installation Configuration	
Check Installation Hostname Network Customer Center Online Update Service Clean Up Release Notes Hardware Configuration	Hard Disk ○ <u>1</u> : 1. SCSI Disk, 984.00 MB, /dev/sda, jetFlash-751GiP/L0 ★ <u>2</u> : <u>2</u> : SCSI Disk, 1:82 TB, /dev/sdg, LSi-Logical Volume ○ <u>C</u> ustom Partitioning (for experts)

ASUS contact information

ASUSTeK COMPUTER INC.

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Support fax General support Online support +1-812-284-0883 +1-812-282-2787 http://support.asus.com/techserv/techserv.aspx

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Technical Support

Telephone +49-1805-010923 Support Fax +49-2102-959911 Online support http://support.asus.com/techserv/techserv.aspx

ASUS Czech Service s.r.o. (Europe)

Address Na Rovince 887, 720 00 Ostrava – Hrabová, Czech Republic Telephone +420-596766888 Web site http://www.asus.cz

Technical Support

Telephone +420-596-766-891 Fax +420-596-766-329 E-mail advance.rma.eu@asus.com Online Support http://support.asus.com/techserv/techserv.aspx

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Web site	http://www.asus.com	

Technical Support

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Fax	+31-(0)591-666853
E-mail	advance.rma.eu@asus.com
Online Support	http://support.asus.com/techserv/techserv.aspx

ASUS Polska Sp. z o.o. (Poland)

Address	Ul. Postępu 6	, 02-676 Warszawa,	Poland
Web site	http://pl.asus	s.com	

Technical Support

Telephone	+48-225718033
Online Support	http://support.asus.com/techserv/techserv.aspx

ASK-Service (Russia and CIS)

Address	г.Москва, ул. Орджоникидзе, д.10, Россия
Telephone	(495) 640-32-75
Web site	http://ru.asus.com

Technical Support

Telephone	008-800-100-ASUS (008-800-100-2787)
Online Support	http://vip.asus.com/eservice/techserv.aspx?SLanguage=ru

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)



Responsible Party Name: Asus Computer International

Address: 800 Corporate Way, Fremont, CA 94539.

Phone/Fax No: (510)739-3777/(510)608-4555

hereby declares that the product

Product Name : PIKE Card

Model Number : PIKE II 3008-4i4e , PIKE II 3008-8i

Conforms to the following specifications:

FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : Steve Chang / President

Steve Chang

Signature :

Date : Apr. 29, 2014

Ver. 140331

EC Declaration of Conformity



Manufacturer:	ASUSTeK COMPUTER INC.	
Address:	4F, No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIW	/AN
Authorized representative in Europe:	ASUS COMPUTER GmbH	
Address, City:	HARKORT STR. 21-23, 40880 RATINGEN	
Country:	GERMANY	
declare the following apparatus:		
Product name :	PIKE Card	
Model name :	PIKE II 3008-4i4e , PIKE II 3008-8i	
conform with the essential requirements	of the following directives:	
2004/108/EC-EMC Directive		
EN 55022:2010+AC:2011	EN 55024:2010	
EN 61000-3-2:2006+A2:2009 EN 55013:2001+A1:2003+A2:2006	EN 61000-3-3:2008 EN 55020:2007+A11:2011	
1999/5/EC-R&TTE Directive		
EN 300 328 V1.7.1(2006-10)	EN 301 489-1 V1.9.2(2011-09)	
EN 300 440-1 V1.6.1(2010-08)	EN 301 489-3 V1.4.1(2002-08)	
EN 300 440-2 V1.4.1(2010-08) EN 301 511 V9.0.2(2003-03)	 EN 301 489-4 V1.4.1(2009-05) EN 301 489-7 V1.3.1(2005-11) 	
EN 301 908-1 V5.2.1(2011-05)	EN 301 489-9 V1.4.1(2007-11)	
EN 301 908-2 V5.2.1(2011-07)	EN 301 489-17 V2.2.1(2012-09)	
EN 301 893 V1.6.1(2011-11)	EN 301 489-24 V1.5.1(2010-09)	
EN 302 544-2 V1.1.1(2009-01)	EN 302 326-2 V1.2.2(2007-06)	
EN 302 623 V1.1.1(2009-01)	EN 302 326-3 V1.3.1(2007-09)	
EN 50360:2001	EN 301 357-2 V1.4.1(2008-11)	
EN 62479:2010 EN 50385:2002	 EN 302 291-1 V1.1.1(2005-07) EN 302 291-2 V1.1.1(2005-07) 	
EN 50385.2002		
2006/95/EC-LVD Directive		
🖾 EN 60950-1 / A12:2011	EN 60065:2002 / A12:2011	
2009/125/EC-ErP Directive		
Regulation (EC) No. 1275/2008	Regulation (EC) No. 278/2009	
Regulation (EC) No. 642/2009	Regulation (EC) No. 617/2013	
2011/65/EU-RoHS Directive		Ver. 1403
⊲ <u>CE marking</u>	~ ~	
	· (
	(EC conformity marking)	

(EC conformity marking)

Position : CEO Name : <u>Jerry Shen</u>

Declaration Date: 29/04/2014 Year to begin affixing CE marking: 2014

Signature :