



MultiCore PCIE RAID SSD

User Guide

Version 1.0

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Creating Integrated Striping Volumes

1.1, Integrated Striping Configuration Overview

The LSI SAS2 BIOS CU is a menu-driven utility program that enables you to easily configure and manage Integrated RAID volumes. You can use the SAS2 BIOS CU to create one or two Integrated Striping volumes on each LSI SAS2 controller. Each volume can have from two-to-ten drives. All disks in an Integrated Striping volume must be connected to the same LSI SAS2 controller.

Although you can use disks of different size in Integrated Striping volumes, the smallest disk in the volume determines the *logical* size of all disks in the volume. In other words, the firmware does not use the excess space of the larger member disk(s). For example, if you create an Integrated Striping volume with two 100-GB disks and two 120-GB disks, the firmware uses only 100 GB on each of the larger disks for the volume. The supported stripe size is 64 kilobytes.

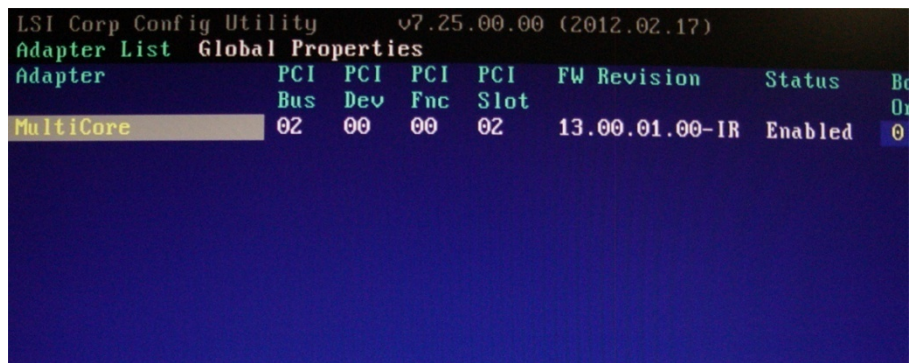
1.2 , Creating Integrated Striping Volumes

The SAS2 BIOS CU is part of the Fusion-MPT BIOS. When the BIOS loads during the startup sequence and you see the message about the LSI Configuration Utility, press **Ctrl-C** to start the SAS2 BIOS CU. After you do this, the message changes to:

Please wait, invoking SAS Configuration Utility...

After a brief pause, the main menu (Adapter List window) of the SAS2 BIOS CU appears. On some systems, however, the following message appears next:

Configuration Utility will load following



```
LSI Corp Config Utility      v7.25.00.00 (2012.02.17)
Adapter List Global Properties
Adapter      PCI PCI PCI PCI  FW Revision  Status  Be
              Bus Dev Fnc Slot
MultiCore    02  00  00  02    13.00.01.00-IR  Enabled  0
```

You can configure any combination of up to two Integrated Striping (RAID 0) volumes and mirrored volumes on each LSI SAS2 controller, up to a maximum of 14 physical disk drives for the two volumes. (This includes one or two hot spare disks for mirrored arrays.)

The following guidelines apply when creating an Integrated Striping volume:

- ※ All physical disks in an Integrated Striping volume must be either SATA (with extended command set support) or SAS (with SMART support). You cannot combine SAS and SATA disks in the same volume. However, you can create one volume with SAS disks and a second volume with SATA disks on the same controller.
- ※ Disks must have 512-byte blocks and must not have removable media.
- ※ Integrated Striping volumes must have at least two disks and no more than 10 disks. Integrated Striping volumes do not support hot spare disks.

Follow these steps to create a eight-disk Integrated Mirroring (RAID 0) volume with the SAS2 BIOS CU. The steps begin with the Adapter List window that appears when the configuration utility starts:

1. On the Adapter List window, use the arrow keys to select an **MultiCore** and then press **Enter**.

The Adapter Properties window appears, as the following figure shows.

```
LSI Corp Config Utility v7.25.00.00 (2012.02.17)
Adapter Properties -- SAS2008

Adapter          MultiCore
PCI Slot         02
PCI Address(Bus/Dev) 02:00
MPT Firmware Revision 13.00.01.00-IR
SAS Address      50068D00:00000002
NUDATA Version   0C.00
Status           Enabled
Boot Order       0
Boot Support     [Enabled BIOS & OS]

RAID Properties
SAS Topology
Advanced Adapter Properties
```

2. Use the arrow keys to select **RAID Properties**, and then press **Enter**.

The Create Array window appears.

```
LSI Corp Config Utility v7.25.00.00 (2012.02.17)
Select New Volume Type -- SAS2008

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
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!
```


3. Select **Create RAID 0 Volume**. The Create New Array window appears.

```
SI Corp Config Utility v7.25.00.00 (2012.02.17)
reate New Volume -- SAS2008
Volume Type: RAID 0
Volume Size(GB): -----

lot Device Identifier RAID Drive Pred Size
um Disk Status Fail (GB)
0 ATA KingSpec KSM-mSA02 [No] ----- No 29
1 ATA KingSpec KSM-mSA02 [No] ----- No 29
2 ATA KingSpec KSM-mSA02 [No] ----- No 29
3 ATA KingSpec KSM-mSA02 [No] ----- No 29
4 ATA KingSpec KSM-mSA02 [No] ----- No 29
5 ATA KingSpec KSM-mSA02 [No] ----- No 29
6 ATA KingSpec KSM-mSA02 [No] ----- No 29
7 ATA KingSpec KSM-mSA02 [No] ----- No 29
```

4. Move the cursor to the *RAID Disk* column and select a line that has a *No* entry in this column, indicating that the disk is not already part of the volume being created. To add the disk to the new array, change the *No* to *Yes* by pressing the space bar.

```
SI Corp Config Utility v7.25.00.00 (2012.02.17)
reate New Volume -- SAS2008
Volume Type: RAID 0
Volume Size(GB): 230

lot Device Identifier RAID Drive Pred Size
um Disk Status Fail (GB)
0 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
1 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
2 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
3 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
4 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
5 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
6 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
7 ATA KingSpec KSM-mSA02 [Yes] ----- No 29
```

5. Press **C** to create the array. A menu screen appears.

6. From the menu options, select **Save changes then exit this menu**.

```
SI Corp Config Utility v7.25.00.00 (2012.02.17)

Create and save new volume?
Cancel Exit
Save changes then exit this menu
Discard changes then exit this menu
Exit the Configuration Utility and Reboot
```

Deleting an Array

Follow these steps to delete a selected volume (array):

1. In the Adapter List window, use the arrow keys to select an LSI SAS adapter. The Adapter Properties window appears.
2. Use the arrow keys to select **RAID Properties**, and then press **Enter**.

```
LSI Corp Config Utility v7.25.00.00 (2012.02.17)
View Volume -- SAS2008
Volume 1 of 1
Identifier LSI Logical Volume 3000
Type RAID 0
Size(GB) 230
Status Optimal
Task None

Manage Volume

lot Device Identifier RAID Hot Drive Pred S
um Disk Spr Status Fail (C
0 ATA KingSpec KSM-mSA02 Yes No Ok No
1 ATA KingSpec KSM-mSA02 Yes No Ok No
2 ATA KingSpec KSM-mSA02 Yes No Ok No
3 ATA KingSpec KSM-mSA02 Yes No Ok No
4 ATA KingSpec KSM-mSA02 Yes No Ok No
5 ATA KingSpec KSM-mSA02 Yes No Ok No
6 ATA KingSpec KSM-mSA02 Yes No Ok No
7 ATA KingSpec KSM-mSA02 Yes No Ok No
```

3. Select **Manage Volume**, and then press **Enter**.

```
LSI Corp Config Utility v7.25.00.00 (2012.02.17)
Manage Volume -- SAS2008

Identifier LSI Logical Volume 3000
Type RAID 0
Size(GB) 230
Status Optimal
Task None

Manage Hot Spares

Consistency Check

Activate Volume

Delete Volume

Online Capacity Expansion
```

5. Select **Delete Volume**, and then press **Enter**.

```
LSI Corp Config Utility v7.25.00.00 (2012.02.17)
Manage Volume -- SAS2008

WARNING! All data will be lost when the volume is deleted!

Y Delete volume and exit to Adapter Properties
N Abandon volume deletion and exit this menu
```

6. Press **Y** to delete the array, or press **N** to cancel the deletion process.