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MegaRAID® SAS 9271-4i and SAS 9271-8i RAID Controllers

Quick Installation Guide

July 2014

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Revision History

Version and Date	Description of Changes
53822-00, Rev. B, July 2014	Revised the board layout graphic to show pin 1. Removed the CacheVault® installation section and the LSIiBBU09 section. Added references to the documentation for the CacheVault modules and the LSIiBBU09 unit. Updated the Technical Support information.
53822-00, Rev. A, June 2012	Initial release of the document.

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MegaRAID® SAS 9271-4i and SAS 9271-8i RAID Controllers Quick Installation Guide

Thank you for purchasing the LSI® MegaRAID® SAS 9271-4i RAID controller or the MegaRAID SAS 9271-8i RAID controller. Your MegaRAID controller provides reliability, high performance, and fault-tolerant drive subsystem management.

Before you install your RAID controller, take a few minutes to read this quick installation guide. This guide describes the RAID controller and the related components (sold separately), which include the LSICVM01 CacheVault® Kit and the intelligent Battery Backup Unit 09 (LSIiBBU09). The LSICVM01 kit contains the CVFM02 CacheVault Flash Module, the CVPM02 CacheVault Power Module, the clip, and the cable.

This guide also describes how to install the MegaRAID SAS 9271-4i RAID controller and the MegaRAID SAS 9271-8i RAID controller.

If you need more information about any topic covered in this guide, refer to the related documents on your *MegaRAID Universal Software Suite* CD. See Section 3, Technical Support for contact information for LSI Technical Support.

NOTE This section shows the installation of the MegaRAID SAS 9271-8i RAID controller. You can install the MegaRAID SAS 9271-4i RAID controller in the same way.

1 Product Overview

The MegaRAID SAS 9271-8i RAID controller is a PCI Express® 3.0, low-profile RAID controller that offers a 6-Gb/s transfer rate. It controls eight internal SAS+SATA ports through two SFF-8087 mini SAS 4i internal connectors.

The MegaRAID SAS 9271-4i RAID controller is a PCI Express 3.0, low-profile RAID controller that offers a 6-Gb/s transfer rate. It controls four internal SAS+SATA ports through one SFF-8087 mini SAS 4i internal connector.

The MegaRAID SAS 9271-4i RAID controller does not support the J5B1 port connector, which the MegaRAID SAS 9271-8i RAID controller supports. Otherwise, the MegaRAID SAS 9271-4i RAID controller supports the same connectors as the MegaRAID SAS 9271-8i RAID controller.

NOTE This RAID controller supports SATA I, SATA II, and SATA III.

NOTE Record your controller serial number in a safe location in case you need to contact your LSI® Technical Support representative.

1.1 CacheVault Flash Module and CacheVault Power Module

The MegaRAID 9271 RAID controllers support CacheVault Module Kit LSICVM01, which includes a CacheVault Flash Module (CVFM02), a CacheVault Power Module (CVPM02), a clip, and a cable. The CVFM02 product is a USB flash module that provides cache offload capability to protect cached data in case of a host power loss or a server failure. The CVFM02 module connects to a remote CVPM02 module, which is a super-capacitor pack that provides power for the backup of your data in case of a host power loss or a server failure.

For more information about the CacheVault modules and how to install them, refer to the *CacheVault Flash Module 02 and CacheVault Power Module 02 Quick Installation Guide* or the *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide* on the *MegaRAID Universal Software Suite* CD.

1.2 LSIiBBU09 Intelligent Battery Backup Unit

The MegaRAID 9271 RAID controllers support the LSIiBBU09 unit, which you can attach directly to the RAID controller or connect remotely to the RAID controller by cable. The MegaRAID LSIiBBU09 unit is based on the Lithium ion (LiON) battery cell technology. The LSIiBBU09 unit protects the integrity of the cached data on a MegaRAID RAID controller for up to 48 hours (depending on the derated retention time selected) in case of a complete AC power failure or a brief power outage.

For more information about the LSIiBBU09 unit and how to install the unit, refer to the *MegaRAID LSIiBBU09 Intelligent Battery Backup Unit Quick Installation Guide* or the *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide* on the *MegaRAID Universal Software Suite* CD.

2 Installing the RAID Controller

CAUTION Back up your data before changing your system configuration. Otherwise, you might lose data.

1. **Unpack the RAID controller.**

   Unpack the RAID controller in a static-free environment. Remove it from the antistatic bag, and inspect it for damage. If the RAID controller appears to be damaged, or if the *MegaRAID Universal Software Suite* CD is missing, contact LSI or your MegaRAID OEM support representative.

   The CD contains utility programs, device drivers for various operating systems, and the following documentation:

   - *6Gb/s MegaRAID SAS RAID Controllers User Guide*
   - *MegaRAID SAS Software User Guide*
   - *MegaRAID SAS Device Driver Installation User Guide*
   - *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide*
   - *CacheVault Flash Module 02 and CacheVault 02 Power Module Quick Installation Guide*
   - *MegaRAID LSIiBBU09 Intelligent Battery Backup Unit Quick Installation Guide*
   - Software license agreement

2. **Prepare the computer.**

   Turn off the computer, and unplug the power cords from the rear of the power supply. Remove the cover from the computer.

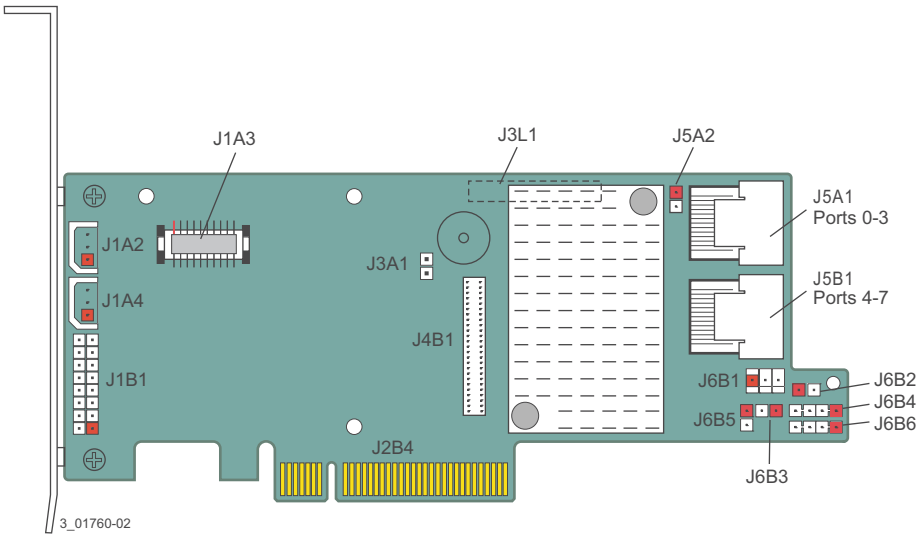
   CAUTION Before you install the RAID controller, make sure that the computer is disconnected from the power and from any networks.

3. **Review the jumpers and the connectors.**

   The following figure shows the location of the jumpers and the connectors on the RAID controller. The jumpers are set at the factory, and you usually do not need to change them.

   Refer to the *6Gb/s MegaRAID SAS RAID Controllers User Guide* for more information about the connectors and headers.

Figure 1 Layout of the MegaRAID SAS 9271-8i RAID Controller



NOTE Pin 1 on the headers and connectors is highlighted in red in this figure.

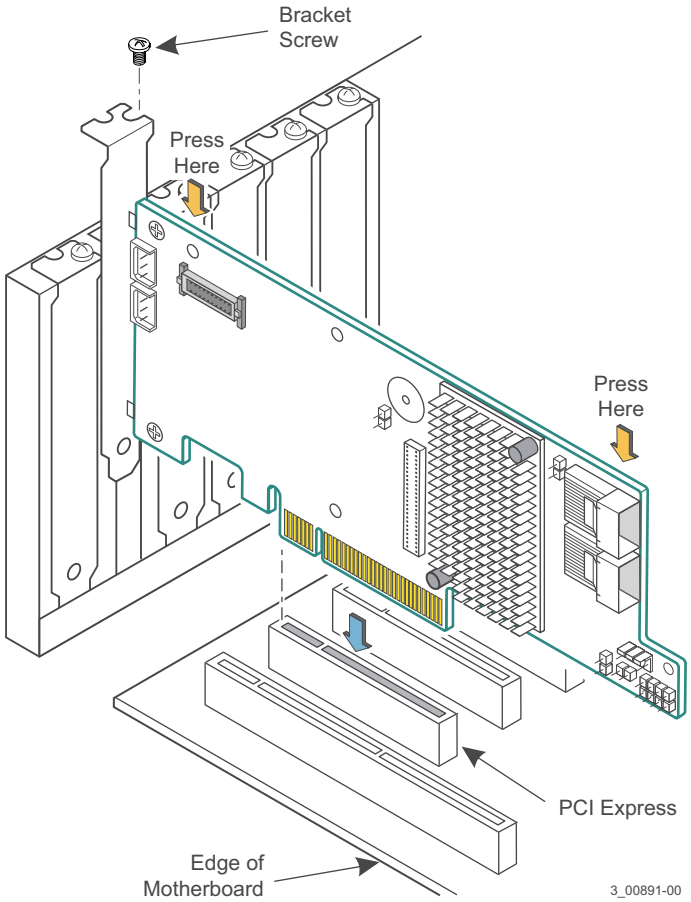
4. **Install the RAID controller.**

   Insert the controller into a PCI Express slot on the motherboard, as shown in the following figure. Press down gently, but firmly, to seat the controller correctly in the slot. Secure the controller to the computer chassis with the bracket screw.

NOTE This controller is a PCI Express x8 card, and it can operate in x8 or x16 slots. However, some PCI Express slots support only PCI Express graphics cards; a RAID controller installed in one of these slots will not function.

NOTE Refer to the guide for your motherboard for information about the PCI Express slot.

Figure 2 Installing the MegaRAID SAS 9271 RAID Controller



5. **Configure and install SAS devices, SATA devices, or both in the host computer case.**

   Refer to the documentation for the devices for any preinstallation configuration requirements.

6. **Connect the RAID controller to SAS devices, SATA devices, or both in the host computer case.**

   Use SAS cables to connect the RAID controller to SAS devices, SATA devices, or both. See Figure 1 to view the connector locations.

   NOTE Refer to the *6Gb/s MegaRAID SAS RAID Controllers User Guide* on the *MegaRAID Universal Software Suite* CD for detailed information about the SAS cables.

7. **Turn on the power to the computer.**

   Reinstall the computer cover, and reconnect the power cords. Turn on the power to the computer. Make sure that the power is turned on to the SAS devices and the SATA devices before or at the same time that the power to the host computer is turned on. If the power is turned on to the computer before it is turned on to the devices, the computer might not recognize the devices.

   The firmware takes several seconds to initialize. During this time, the controller scans the ports.

8. **Run the WebBIOS™ Configuration Utility.**

   Run the WebBIOS Configuration Utility to configure the groups and the virtual drives. When the message `Press <Ctrl><H> for WebBIOS` appears on the screen, immediately press Ctrl+H to run the utility.

NOTE Refer to the *MegaRAID SAS Software User Guide* for detailed steps on configuring groups and virtual drives.

9. **Install the operating system driver.**

   The controller can operate under various operating systems, but you must install the software drivers first.

   The *MegaRAID Universal Software Suite* CD includes the software drivers for the supported operating systems, along with documentation. You can view the supported operating systems and download the latest drivers for RAID controllers from the LSI website at http://www.lsi.com/cm/DownloadSearch.do. Access the download center, and follow the steps to download the driver.

   Refer to the *MegaRAID SAS Device Driver Installation User Guide* on the *MegaRAID Universal Software Suite* CD for more information about installing the driver. Be sure to use the latest service packs that are provided by the operating system manufacturer and to review the `readme` file that accompanies the driver.

3 Technical Support

For assistance in installing, configuring, or running your MegaRAID SAS 9271 RAID controller, contact an LSI Technical Support representative.

Click the following link to access the LSI Technical Support page for storage and controller support:

http://www.lsi.com/about/contact/pages/support.aspx

This page contains links to the following URLs for support by email, support request, or phone. In addition, you can hover over the *Support* heading on the Technical Support page, and click the support option you want.

Email Requests:

http://www.lsi.com/support/email/Pages/megaraid.aspx

Support Requests:

http://www.lsi.com/support/Pages/submitsupportrequest.aspx

Phone Support:

http://www.lsi.com/support/Pages/call-us.aspx

You can download the latest documentation, management applications, and drivers for these controllers from http://www.lsi.com/support/Pages/download-search.aspx. You can hover over the *Support* heading on the Technical Support page, and then click *Find Support Documents & Downloads by Product* to access this page.

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