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LSICVM02 Kit

Quick Installation Guide

May 2014

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Revision History

Version and Date	Description of Changes
54063-00, Rev. B, May2014	Added the MegaRAID SAS 9380-4i4e RAID controller and the MegaRAID SAS 9380-8e RAID controller, which support the LSICVM02 kit.
54063-00, Rev. A, October 2013	Initial release of the document.

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LSICVM02 Kit Quick Installation Guide

Thank you for purchasing the LSI® CacheVault™ Module 02 (LSICVM02) Kit. Before you install the LSICVM02 kit, please take a few minutes to read this guide. This guide describes the CacheVault Module Kit LSICVM02, which contains a MegaRAID® CacheVault Flash Module 04 (CVFM04), a MegaRAID CacheVault Power Module 02 (CVPM02), a clip, and a cable, and explains how to install these components.

The CVFM04 product is an Open NAND Flash Interface (ONFI) flash module that provides cache off-load capability to protect cached data in case of host power loss or server failure. The remote CVPM02 module is a super-capacitor pack that provides the power to off-load cached data from the DRAM to the nonvolatile FLASH memory on the CVFM04 module if a power failure or outage occurs. Cached data is restored from the CVFM module to DRAM the next time the RAID controller is powered. Cached data can then be written to the storage devices.

To install the kit, you attach the CVFM04 module directly to a RAID controller, insert the CVPM02 module into the clip on a BBU-BRACKET-05 remote mount board (sold separately), and then connect the CVFM04 module by cable to the remote CVPM02 module. Next, install the RAID controller and the remote mount board in PCI Express® (PCIe®) slots in the system.

The following MegaRAID controllers support the LSICVM02 CacheVault Kit:

- MegaRAID SAS 9361-4i RAID controller
- MegaRAID SAS 9361-8i RAID controller
- MegaRAID SAS 9380-4i4e RAID controller
- MegaRAID SAS 9380-8e RAID controller

NOTE This guide documents installation of the CacheVault modules using the MegaRAID SAS 9361-8i RAID controller in Installing the LSICVM02 Kit on page 5. You can install the CacheVault modules the same way on the MegaRAID SAS 9361-4i, 9380-4i4e, and 9380-8e RAID controllers.

If you need more information about any topic covered in this guide, refer to the related documents on your *MegaRAID Universal Software Suite* CD:

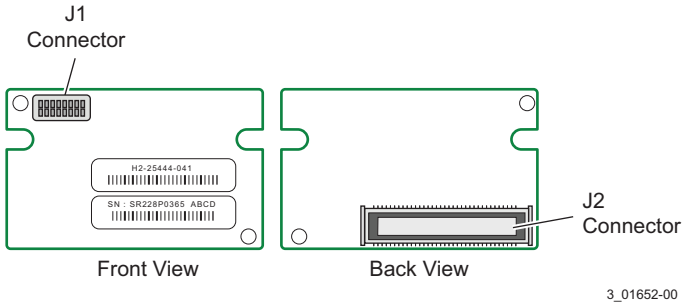
- *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide*
- *MegaRAID SAS 9361-4i and SAS 9361-8i RAID Controllers Quick Installation Guide*
- *MegaRAID SAS 9380-4i4e RAID Controllers Quick Installation Guide*
- *MegaRAID SAS 9380-8e RAID Controllers Quick Installation Guide*
- *12Gb/s MegaRAID SAS RAID Controllers User Guide*
- *MegaRAID SAS Software User Guide*
- *MegaRAID SAS Device Driver Installation User Guide*
- Software license agreement

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

CVFM04 Module

The following figure shows the front view and the back view of the CVFM04 module. The front view is the side that you can see when the unit is installed on a RAID controller.

Figure 1 Front View and Back View of the CVFM04 Module



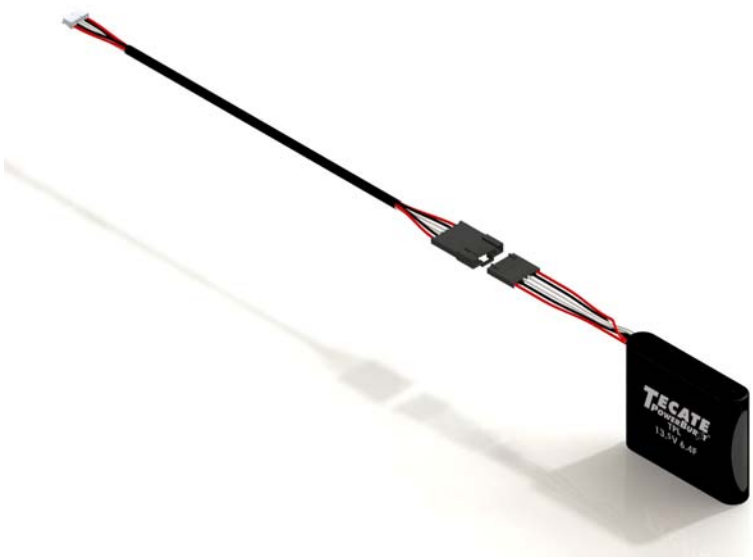
1. J1 – 9-pin Connector to the Remote CVPM02 Module
2. J2 – 80-pin Board-to-Board Connector

NOTE Record your controller serial number in a safe location, in case you need to contact LSI.

CVPM02 Module

The following figure shows the CVPM02 module and the cable that connects the module to a CVFM04 module installed on the RAID controller.

Figure 2 CVPM02 Module and Cable



Installing the LSICVM02 Kit

This section describes how to install the CVFM04 module and the CVPM02 module, connect the modules, and then insert the RAID controller and the remote mount board into PCIe slots on the motherboard.

When you remove the CacheVault modules from their antistatic bags, inspect them for damage. Unpack the modules in a static-free environment. If a module appears to be damaged, or if the *MegaRAID Universal Software Suite* CD is missing, contact your place of purchase.

NOTE Back up your data before you change your system configuration, or you could lose data.

CAUTION Electrostatic discharge (ESD) can damage the CacheVault modules and the RAID controller. Make sure that you install the CacheVault modules at an ESD-safe workstation that meets the EIA-625 standard. When you install the CacheVault modules, follow the ESD-recommended practices in the latest revision of the IPC-A-610 standard.

Perform the following tasks to attach the CVFM04 module directly to your RAID controller, install the CVPM02 module on the remote mount board, connect the modules by cable, and then install the RAID controller and the remote mount board on the motherboard.

NOTE This section shows installation of the CacheVault modules using the MegaRAID SAS 9361-8i RAID controller. You can install the CacheVault modules the same way using the MegaRAID SAS 9361-4i, 9380-4i4e, and 9380-8e RAID controllers.

1. Remove the RAID controller from the computer. See Removing the RAID Controller from the Computer on page 5.
2. Attach the CVFM04 module directly to the RAID controller. See Attaching the CVFM04 Module Directly to the RAID Controller on page 6.
3. Install the clip on the remote mount board. See Installing the Clip on the Remote Mount Board on page 7.
4. Attach the CVPM02 module to the clip. See Attaching the CVPM02 Module to the Clip on page 8.
5. Connect the CVFM04 module to the remote CVPM02 module. See Connecting the CVFM04 Module to the Remote CVPM02 Module on page 9.
6. Reinstall the RAID controller on the motherboard. See Reinstalling the RAID Controller on the Motherboard on page 10.
7. Install the remote mount board on the motherboard. See Installing the Remote Mount Board on the Motherboard on page 11.

Removing the RAID Controller from the Computer

Follow these steps to remove the RAID controller from the computer.

1. Turn off the power, and unplug the power cords.
2. Ground yourself, and make sure that the system is grounded.
3. Remove the cover from the computer, according to the instructions in the system user's manual, to permit access to the controller.
4. Unplug all cables from the controller, remove the screw that attaches the bracket to the computer chassis, and carefully remove the controller from the slot.
5. Place the RAID controller on a flat, clean, static-free surface.

Attaching the CVFM04 Module Directly to the RAID Controller

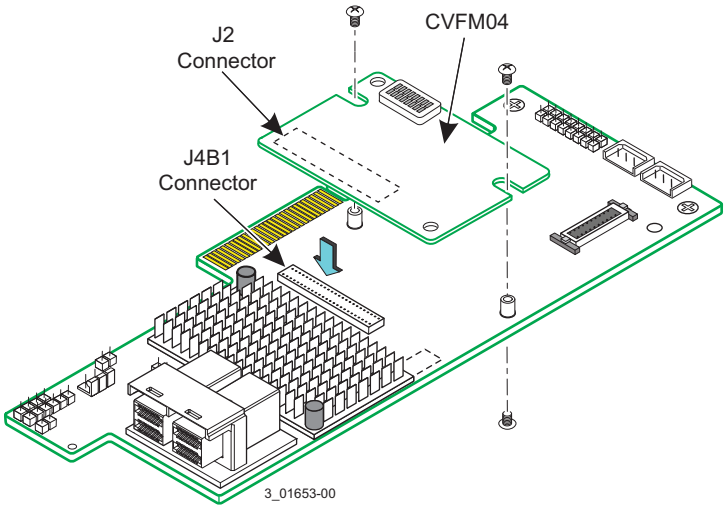
Follow these steps to attach the CVFM04 module to the front of the RAID controller.

1. Ground yourself, and make sure that the system is grounded.
2. Remove the CVFM04 module from the package.
3. Place the CVFM04 module front-side-up on a flat, clean, static-free surface.
4. Mount the two standoffs on the front side of the controller by screwing in two screws from the back side of the controller, as shown in the following figure.

   The standoffs are threaded at both ends, and the screws thread from the back side of the controller into the board-to-board standoffs.

   NOTE Center the screwdriver carefully to avoid stripping the screw heads. Do not over-tighten the screws.
5. Hold the CVFM04 module so that the front side faces upward, and align the J2 connector on the CVFM04 module with the connector on the RAID controller.

Figure 3 Attaching the CVFM04 Module Directly to the MegaRAID SAS 9361-8i RAID Controller



6. Carefully press the CVFM04 module onto the RAID controller so that the two connectors are firmly joined.
7. Secure the CVFM04 module to the RAID controller by screwing in the two screws from the top side of the controller.

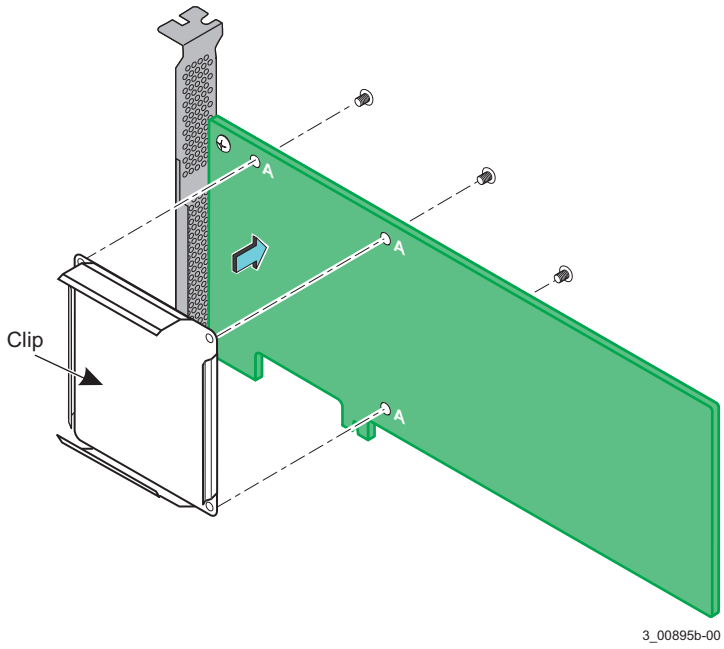
   The standoffs are threaded at both ends, and the screws thread from the front side of the controller into the board-to-board standoffs.

Installing the Clip on the Remote Mount Board

Follow these steps to attach the clip to a BBU-BRACKET-05 remote mount board.

1. With the remote mount board on a flat, clean, static-free surface, ground yourself, and make sure that the system is grounded.
2. Remove the clip and the remote mount board module from the package.
3. Place the clip and the remote mount board module front-side-up on a flat, clean, static-free surface.
4. Hold the clip so the screw holes on the clip line up with the screw holes on the remote mount board, as shown in the following figure.

Figure 4 Installing the Clip on the Remote Mount Board



5. Secure the clip to the three screw holes with the screws and the nuts.
   The screws thread through the front of the clip and the remote mount board.

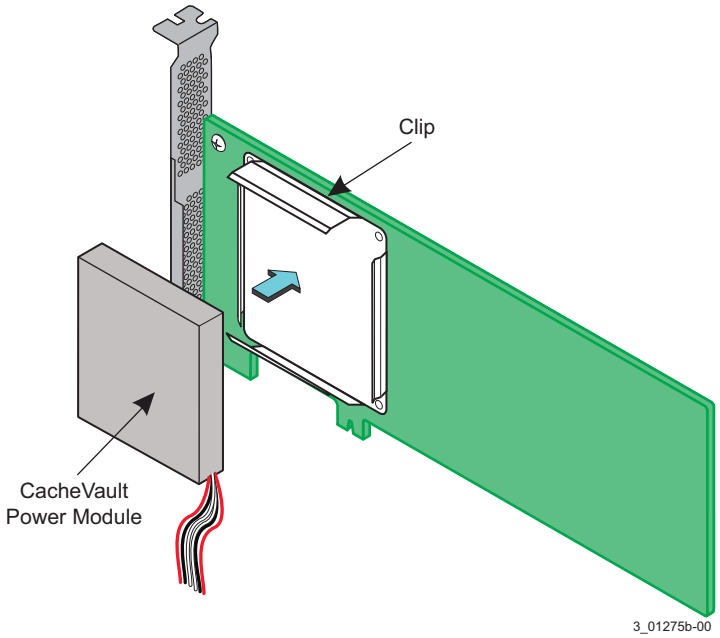
NOTE Center the screwdriver carefully to avoid stripping the screw heads. Do not over-tighten the screws.

Attaching the CVPM02 Module to the Clip

Follow these steps to attach the CVPM02 module to the clip.

1. Ground yourself, and make sure that the system is grounded.
2. Remove the CVPM02 module from the package.
3. Place the CVPM02 module front-side-up on a flat, clean, static-free surface.
4. Press the CVPM02 module into the clip until the module clicks firmly into place, as shown in the following figure.

Figure 5 Attaching the CVPM02 Module to the Clip



Connecting the CVFM04 Module to the Remote CVPM02 Module

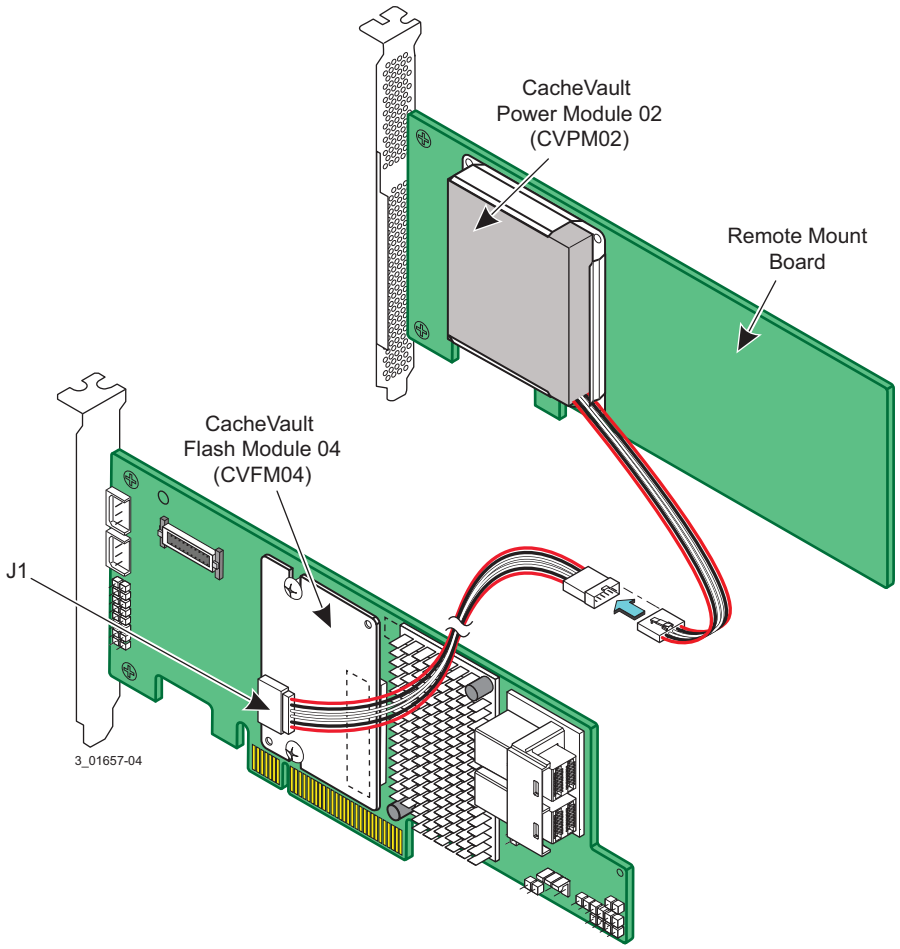
Follow these steps to connect the CVFM04 module on your MegaRAID SAS 9361 RAID controller by cable to the remote CVPM02 module.

1. Place the controller on a flat, clean, static-free surface.
2. Ground yourself, and make sure that the system is grounded.
3. Remove the cable that is included in the LSICVM02 kit box.

   The cable has a 9-pin connector on one end and a 6-pin connector on the other.
4. Insert the 9-pin connector on the cable into the 9-pin J1 connector on the CVFM04 module, as shown in the following figure.
5. Insert the 6-pin connector into the 6-pin connector on the cable from the remote CVPM02 module.

   Align the cable connectors to make sure that they are connected correctly.

Figure 6 Connecting the CVFM04 Module by Cable to the Remote CVPM02 Module



Reinstalling the RAID Controller on the Motherboard

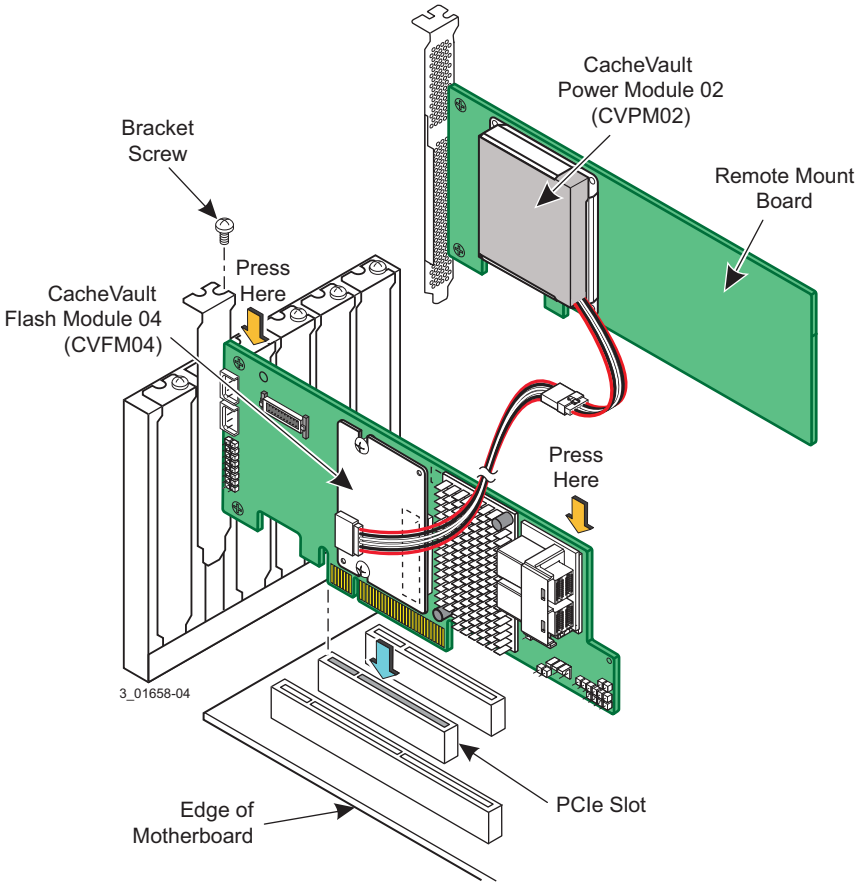
Follow these steps to reinstall your MegaRAID SAS 9361-8i RAID controller in a PCIe slot on the motherboard.

1. Make sure that the power to the chassis is still turned off, the power cords are unplugged, and the chassis is grounded and has no AC power.
2. Install the RAID controller in a PCIe slot on the motherboard, as shown in the following figure.

   NOTE Some PCIe slots support only PCIe graphics cards; a remote mount board installed in one of these slots will not function. Refer to your computer documentation for information about the PCIe slot.

3. Press down gently, but firmly, to seat the card correctly in the slot.
4. Secure the controller to the computer chassis with the bracket screw.

Figure 7 Reinstalling the RAID Controller

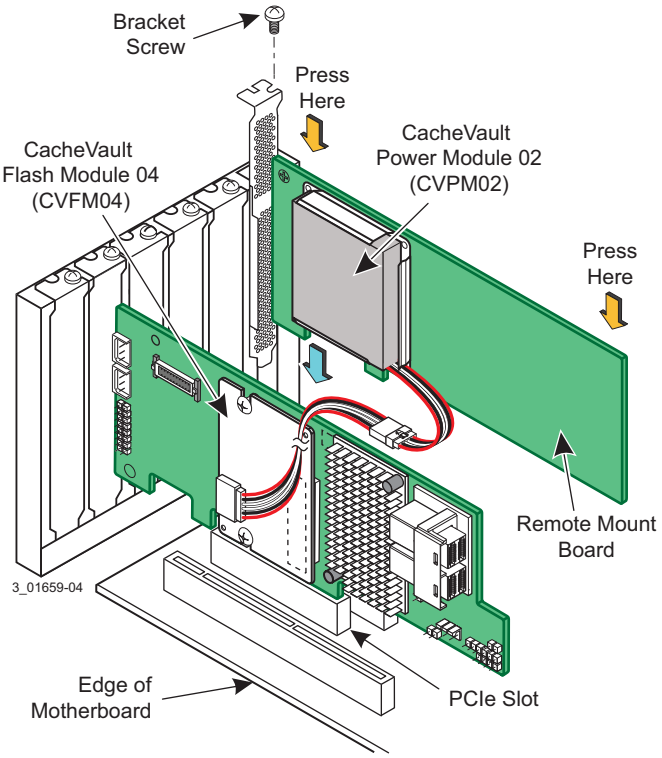


Installing the Remote Mount Board on the Motherboard

Follow these steps to install the remote mount board on the motherboard.

1. Make sure that the power to the chassis is still turned off, the power cords are unplugged, and the chassis is grounded and has no AC power.
2. Insert the remote mount board in a PCIe slot on the motherboard, as shown in the following figure.
3. Press down gently, but firmly, to seat the board correctly in the slot.
4. Use the bracket screw to secure the remote mount board to the system chassis.

Figure 8 Installing the Remote Mount Board



5. Reinstall the computer cover, and reattach the power cords.
6. Turn on the power to the computer.

Refer to the *MegaRAID SAS Software User Guide* for information about running the RAID configuration utility and installing the software drivers.

Technical Support

For assistance in installing, configuring, or running the CVFM04 module or the CVPM02 module, 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

1-800-633-4545 (North America)

00-800-5745-6442 (International)

NOTE The international toll-free number does not require country-specific access codes.

Documents and Downloads:

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

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