CVFM03 and CVPM02 CacheVault Modules

Quick Installation Guide

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For a comprehensive list of changes to this document, see the Revision History.

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CVFM03 and CVPM02 CacheVault Modules Quick Installation Guide

Thank you for purchasing the Avago® MegaRAID® CacheVault™ Flash Module, CVFM03, and the CacheVault Power Module, CVPM02. The CacheVault modules provide on-board memory and power backup to protect cache data.

Before you install your CacheVault modules, take a few minutes to read this quick installation guide. This guide describes the CacheVault modules, and it documents how to attach the CVFM03 module to a RAID controller, and then connect the CVFM03 module to the CVPM02 module. If you need more information about any topic covered in this guide, refer to the related documents on your *MegaRAID Universal Software Suite* CD.

1 Product Overview

The MegaRAID SAS 9265CV-8i RAID controller supports the CVFM03 module, which provides on-board memory to protect cache data. The CVFM03 module connects by cable to a remote CVPM02 module. The CVPM02 module is a super-capacitor pack that provides power to offload cached data from the DRAM to the nonvolatile Flash memory on the CVFM03 module if a power failure or outage occurs. The DRAM contents are then restored to the CVFM03 module the next time the RAID controller is powered on. Cached data can then be written to the storage devices.

The MegaRAID SAS 9265CV-8i RAID controller is a SAS2208 RAID-on-Chip (ROC)-based, PCIe® 3.0 internal RAID Host Bus Adapter (HBA) with internal HDD connectors and nonvolatile memory module with cache offload.

1.1 CacheVault Module Descriptions

The CVFM03 module is an on-board 1-GB DDR3 1333 MT/s CacheVault Flash Module, plus 2 GB of NAND flash memory that can store the cache contents in case of power loss, capacitor charge maintenance, and capacitor health monitoring functions. You can attach the CVFM03 module directly to the RAID controller and connect it by cable to a remote CVPM02 module.

The CVPM02 module is a super-capacitor pack that provides the power to offload cached data from the DRAM to the nonvolatile Flash memory on the CVFM03 module if a power failure or outage occurs. The CVPM02 module is installed on a remote mount board by using the included CVPM02 clip.

For more information about the CacheVault Flash Memory Module and the CacheVault Power Module, refer to the *Cache Backup Products for MegaRAID SAS+SATA RAID Controllers User Guide* on the *MegaRAID Universal Software Suite* CD.

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

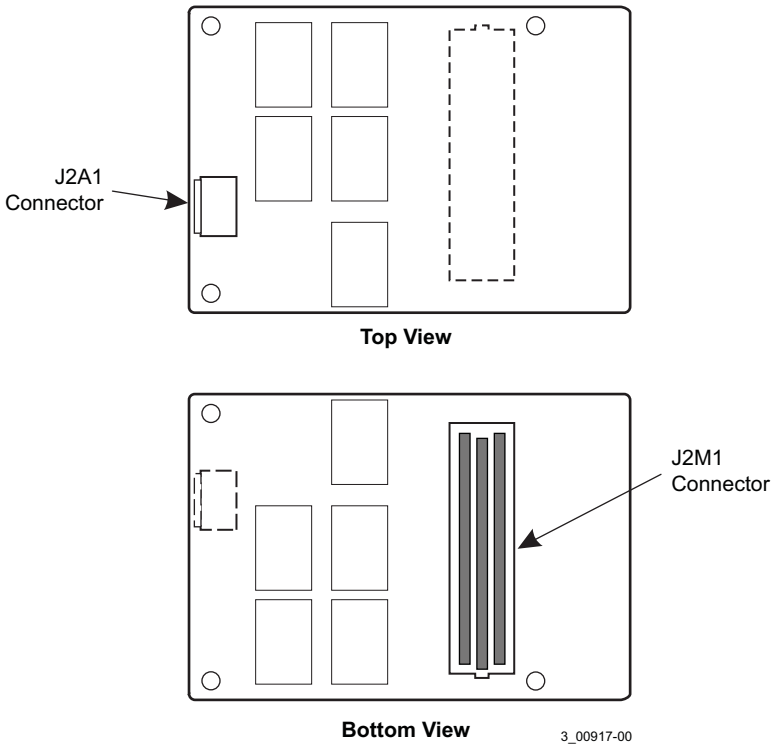
2 Attaching a CVFM03 Module to a MegaRAID SAS 9265CV-8i RAID Controller and Connecting to a Remote CVPM02 Module

This section describes how to attach the CVFM03 module to the MegaRAID SAS 9265CV-8i RAID controller, and then connect the CVFM03 module by cable to a remote CVPM02 module.

2.1 Top View and Bottom View of the CVFM03 Module

The following figure shows the top view and the bottom view of the CVFM03 module. The top view is the side that you can see when the unit is installed on a RAID controller.

Figure 1 Top View and Bottom View of the CVFM03 Module



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

2.2 Installing the CVFM03 Module Directly on the MegaRAID SAS 9265CV-8i RAID Controller

Follow these steps to install the CVFM03 module directly on the MegaRAID SAS 9265CV-8i RAID controller.

1. Remove the RAID controller from the computer. For this procedure, see Removing the RAID Controller from the Computer.
2. Attach the CVFM03 module directly to the RAID controller. For this procedure, see Attaching the CVFM03 Module Directly to the RAID Controller on page 6.

NOTE Electrostatic discharge can damage the CVFM03 module and the MegaRAID SAS 9265CV-8i RAID controller. Make sure that you install the CVFM03 module at an ESD-safe workstation that meets the EIA-625 Standard. When you install the CVFM03 module, follow the ESD-recommended practices in the latest revision of the IPC-A-610 Standard.

2.2.1 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 allow 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 controller on a flat, clean, static-free surface, and continue with the next procedure.

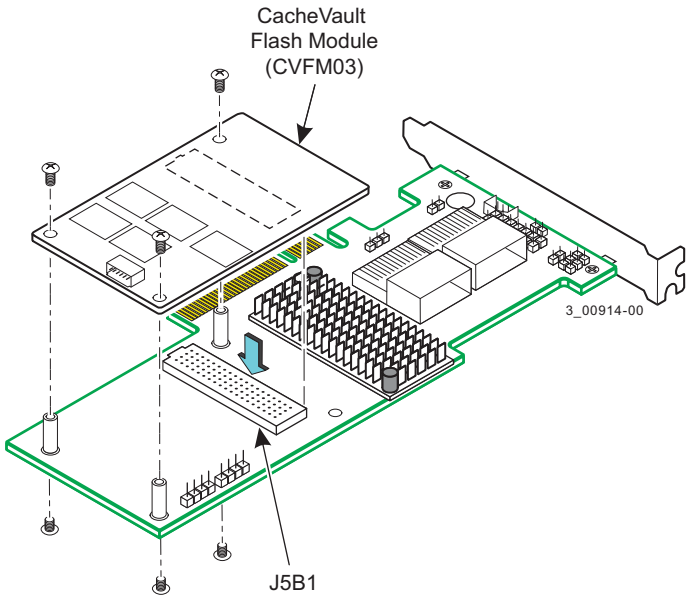
2.2.2 Attaching the CVFM03 Module Directly to the RAID Controller

Follow these steps to attach the CVFM03 module directly to the RAID controller.

NOTE There is danger of an explosion if the battery is incorrectly replaced. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

1. Ground yourself, and make sure that the system is grounded.
2. Remove the CVFM03 module from the package.
3. Place the CVFM03 module front-side-up on a flat, clean, static-free surface.
4. Place the RAID controller on a flat, clean, static-free surface.
5. Install three screws into the board-to-board standoffs on the back of the controller, as shown in the following figure.
6. Hold the CVFM03 module so that the top side is facing upward, and align the J2M1 connector on the CVFM03 module with the J5B1 connector on the RAID controller.

Figure 2 Attaching the CVFM03 Module Directly to the RAID Controller



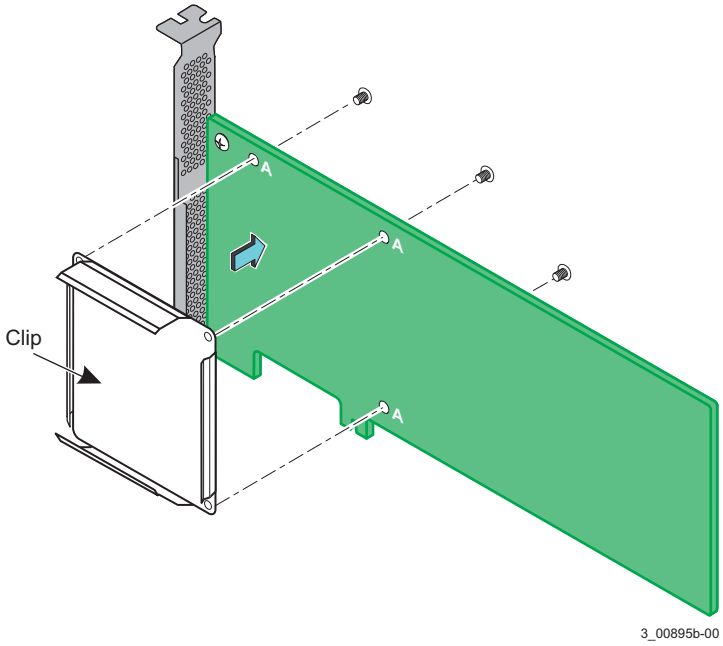
7. Carefully press the CVFM03 module onto the RAID controller so that the two connectors are firmly joined.
8. Secure the CVFM03 module to the RAID controller by installing the screws into the board-to-board standoffs through the three screw holes in the CVFM03 module.
9. Center the screwdriver carefully to avoid stripping the screw heads. Do not over-tighten the screws.

2.3 Installing the Clip Directly on the Remote Mount Board

Follow these steps to install the clip directly on the remote mount board.

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

Figure 3 Installing the Clip Directly on the Remote Mount Board



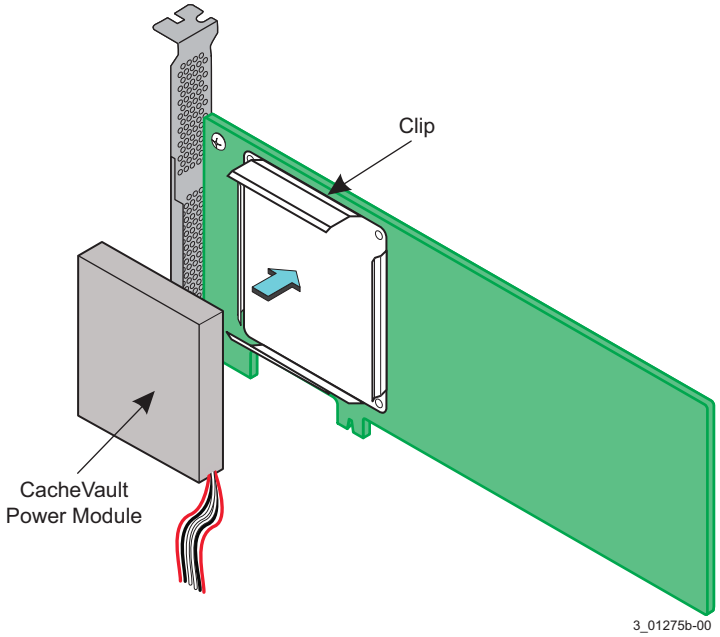
6. Secure the clip to the remote mount board in three screw holes with the screws and the nuts.
   The screws thread through the front of the clip and the remote mount board.
7. Center the screwdriver carefully to avoid stripping the screw heads. Do not over-tighten the screws.

2.4 Attaching the CVPM02 Module to the Clip on the Remote Mount Board

Follow these steps to attach the CVPM02 module to the clip on the remote mount board.

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

Figure 4 Attaching the CVPM02 Module to the Clip on the Remote Mount Board



2.5 Connecting the CVFM03 Module to the Remote CVPM02 Module

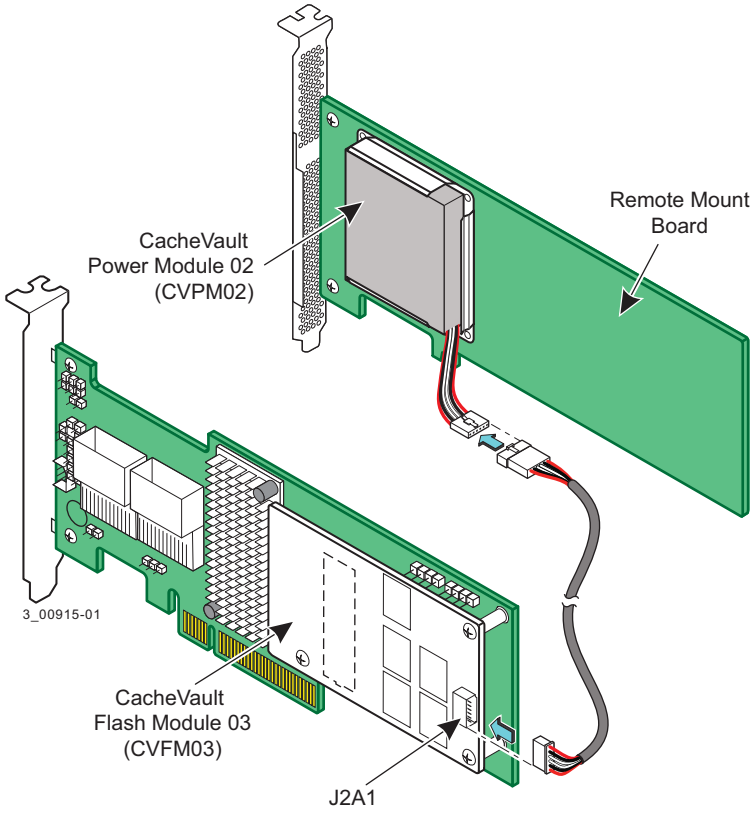
Follow these steps to connect the CVFM03 module on the MegaRAID SAS 9265CV-8i RAID controller by cable to the remote CVPM02 module on the remote mount board.

1. Place the controller on a flat, clean, static-free surface.
2. Ground yourself and make sure the system is grounded.
3. Remove the cable included in the RAID controller box.
4. Insert the cable connector on one end of the cable into the J2A1 cable connector on the CVFM03 module.
5. Insert the other end of the cable into the cable connector for the remote CVPM02 module on the remote mount board, as shown in the following figure.

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

NOTE You can insert the cable connector on the remote CVPM02 unit into the larger 6-pin connector on the cable connector if the latch on the cable connector aligns with the slot on the other cable connector. The cable end inserts into the connector with minimal resistance.

Figure 5 Connecting the CVFM03 Module on the RAID Controller to the CVPM02 Module on the Remote Mount Board



2.6 Reinstalling the RAID Controller on the Motherboard

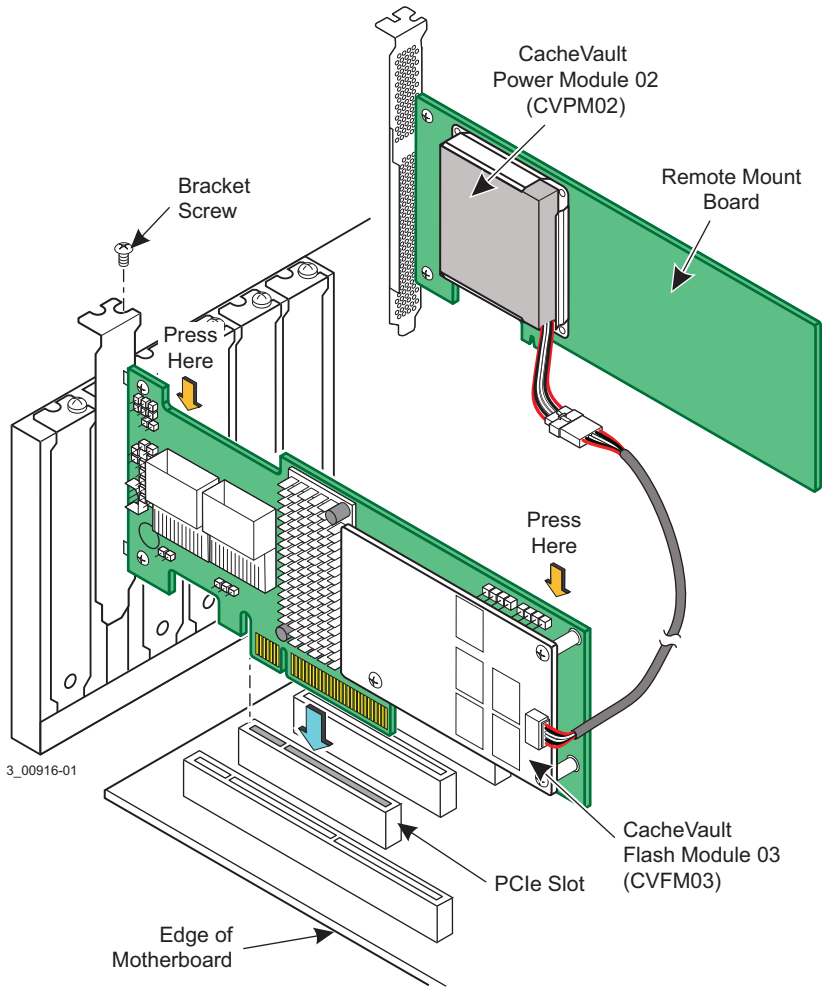
Follow these steps to reinstall the RAID controller on the motherboard.

1. Make sure 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 PCI Express® slot on the motherboard, as shown in the following figure.

NOTE Some PCI Express slots support only PCI Express graphics cards. If a RAID controller is installed in one of these slots, the controller does not function. Refer to your computer documentation for information about the PCI Express 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 6 Reinstalling the RAID Controller on the Motherboard



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

2.7 Installing the Remote Mount Board in the System

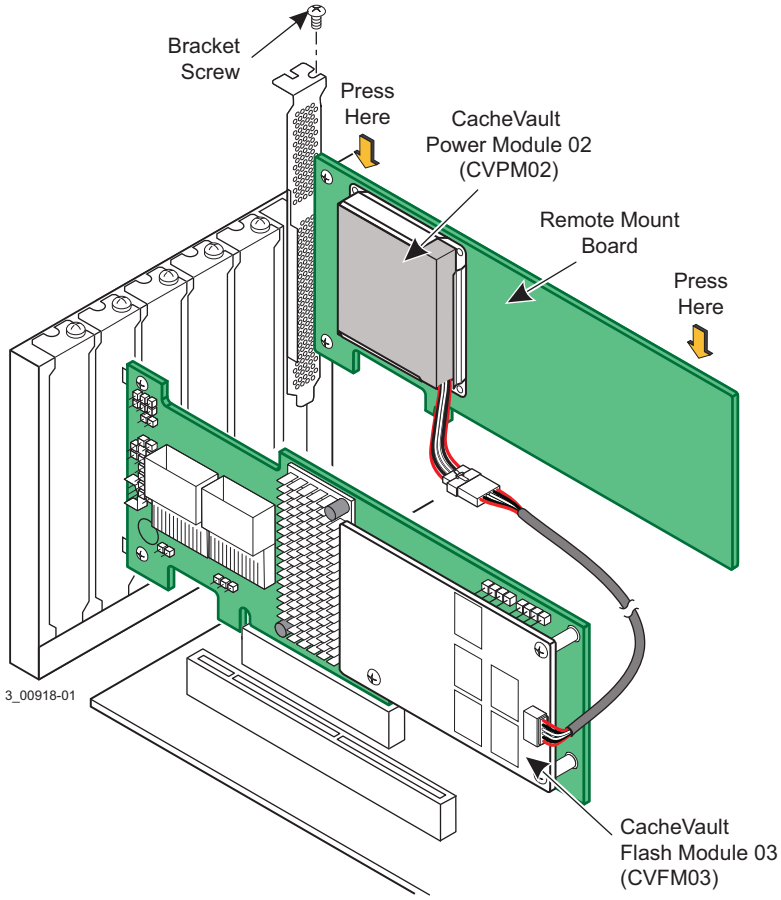
Follow these steps to install the remote mount board in the system.

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 PCI Express slot on the motherboard, as shown in the following figure.

NOTE Some PCI Express slots support only PCI Express graphics cards. If a RAID controller is installed in one of these slots, the controller will not function. Refer to your computer documentation for information about the PCI Express slot.

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 computer chassis.

Figure 7 Installing the Remote Mount Board in the System



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.

3 Technical Support

For assistance in installing, configuring, or running the MegaRAID SAS 9265CV-8i RAID controller, contact an Avago Technologies Technical Support representative.

Click the following link to access the Avago Technologies 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.

4 Revision History

4.1 Version 1.0, June 2015

Initial release of this document.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