Quick Installation Guide

MegaRAID® SAS 9361-16i RAID Controller

Thank you for purchasing the MegaRAID controller. Please take a few minutes to read this quick installation guide before you install the controller.

ATTENTION: Perform all installation work at an electrostatic discharge (ESD)-safe workstation that meets the requirements of EIA-625. *Requirements for Handling Electrostatic Discharge Sensitive Devices*. You must perform all actions in accordance to the latest revision of the IPC-A-610 ESD-recommended practices.

Overview

The MegaRAID SAS 9361-16i RAID controller is a PCI Express® (PCIe®) 3.0, low-profile controller with RAID control capability, based on the LSISAS3316 RAID On-a-Chip (ROC) device. The controller uses 2 GB of DDR3 1866-MHz memory and controls 16 internal Serial Attached SCSI (SAS)/Serial Advanced Technology Attachment (SATA) ports through four SFF-8643 mini-SAS HD-4i internal connectors. This capability lets you use a system that supports both enterprise-class SAS drives and desktop-class SATA III drives. The MegaRAID SAS 9361-16i RAID controller supports data retention by using NAND flash memory down on the controller, backed up by a CacheVault Power Module 02 (CVPM02).

The CVPM02 module is a super-capacitor pack that provides power for the backup of your data in case of host power loss or server failure. The CVPM02 module is connected to the controller remotely by cable. The data is backed up to the NAND flash memory available on the MegaRAID controller board.

The CVPM02 kit (sold-separately) includes the super-capacitor, cable, and a mounting clip. The CVPM02 module can be installed into the clip on a BBU-BRACKET-05 remote mount board (sold-separately) or into the clip installed at another available location in the system. Once installed, the CVPM02 module is cabled over to the RAID controller card. For more information on the CVPM02 module, refer to the *CVPM02 Kit Quick Installation Guide*.

Installing the MegaRAID SAS 9361-16i RAID Controller

To install the 12Gb/s MegaRAID controller, follow these steps:

1. **Unpack the RAID controller.** Unpack the controller in a static-free environment. Remove it from the antistatic bag, and inspect it for damage. A low-profile bracket is included with the RAID controller. If you notice any damage, contact Avago or your reseller support representative.

ATTENTION: To avoid the risk of data loss, back up your data before you change your system configuration.

2. **Prepare the host computer.** Turn off the host computer, and unplug the power cords from the rear of the power supply.

CAUTION: Disconnect the computer from the power supply and from any networks to which you will install the controller, or you risk damaging the system and experiencing electrical shock.

3. **Remove the cover from the host computer.**
4. **Insert the controller into an available PCIe slot.** Locate an empty x8 PCIe slot adequate for your board. Remove the blank bracket panel on the rear of the computer that aligns with the empty PCIe slot. Save the bracket screw, if applicable. Align the controller to the PCIe slot. Press down gently, but firmly, to seat the controller correctly in the slot. The following figure shows how to insert the controller into a PCIe slot.

NOTE: The shape, size, and locations of the components on the controller and its bracket might vary from this illustration. The controller requires a PCIe x8 slot.

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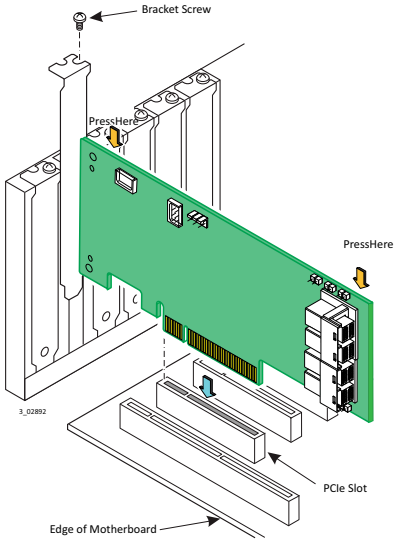
Figure 1. Installing the MegaRAID SAS 9361-16i RAID Controller in a PCIe Slot



5. Connect SAS cables between the controller and the SAS backplane or any other SAS or SATA device. To avoid the risk of data loss, back up your data before you change your system configuration. This 12Gb/s SAS controller has four SFF-8643, internal x4, mini-SAS HD connectors. Use cables with an internal mini-SAS HD connector on one end (to connect to the controller) and the appropriate connector on the other end to attach to the backplane or SAS/SATA devices.

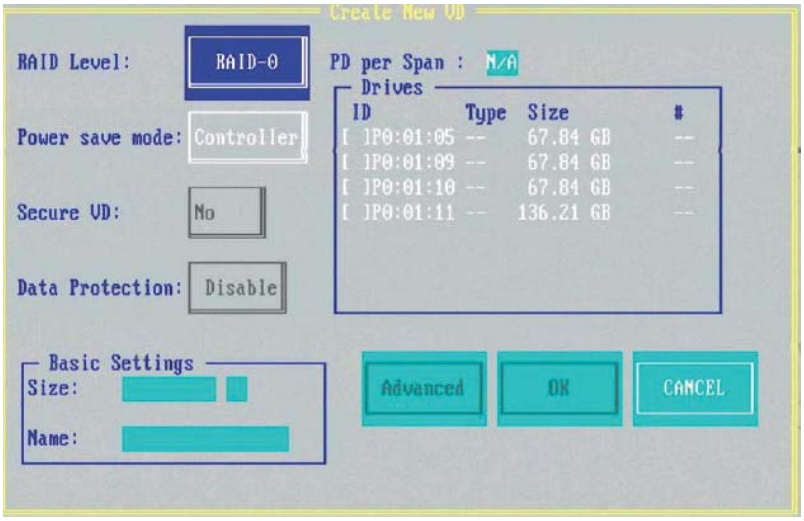
6. Make sure the system provides the required airflow for the controller. Airflow must be at least 300 linear feet per minute (LFM) at 55 °C inlet temperature to avoid operating the LSISAS3316 processor above the maximum junction temperature.

7. Replace the cover and reconnect any cords and cables, and power up the system. Replace the chassis's cover, reconnect any power cords, and reconnect any network cables. Turn on the power.

8. Run the MegaRAID BIOS Configuration Utility. Run the MegaRAID BIOS Configuration Utility to configure the groups and the virtual drives. When the message about the configuration utility appears on the screen, immediately press Ctrl+R to run the utility. The following screen is an example of this utility.

NOTE: Refer to the *12Gb/s MegaRAID SAS Software User Guide* for detailed steps on configuring drive groups and virtual drives.

Figure 2. Create New Virtual Drive Screen



Driver Installation

All driver installation instructions are available at http://www.avagotech.com/support/download-search. Select **12Gb/s SAS+SATA RAID > MegaRAID SAS 9361-16i > Driver**.

Replacing the Bracket

To replace the bracket for the RAID controller, follow these steps:

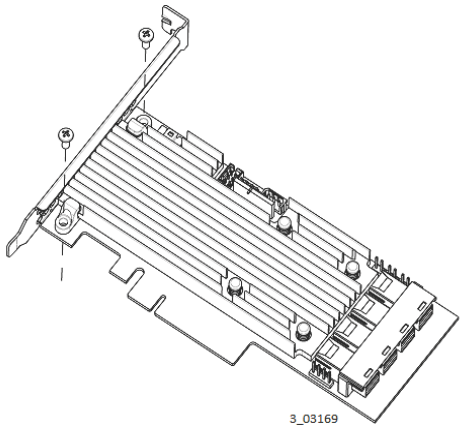
1. At an ESD-safe workstation, remove the board from its ESD protective bag.

ATTENTION: Never apply pressure to the bracket or the heat sink when inserting the board. Do not handle the board by the bracket. Do not handle the heat sink at any time. Do not bend or twist the board at any time.

2. Use an ESD-safe #1 Phillips screwdriver to carefully remove the two Phillips screws that connect the bracket to the board. The following figure shows how to unscrew the two screws located at the top edge and bottom edge of the board.

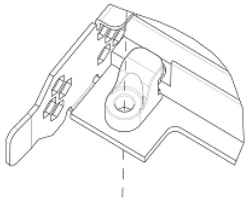
CAUTION: Damaging the screw can void the warranty. To prevent damage to the screw, make sure that the screwdriver is centered in the top of the screw.

Figure 3. Removing the Screws



3. Keep the board on a level surface to make sure you do not lose any retaining clips. The heat sink is held in place by the same screws that attach the bracket. The black retaining clips shown in the following figure can come loose when the screws are removed.

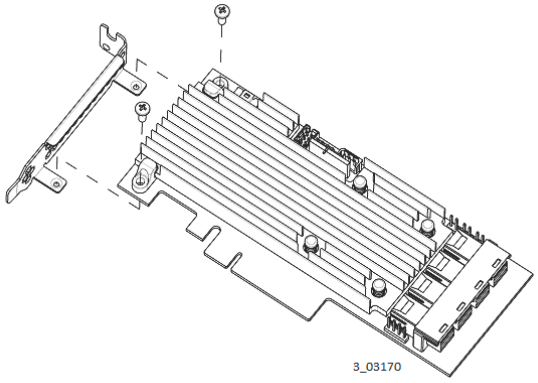
Figure 4. Heat Sink Held in Place by Retaining Clips Attached by Bracket Screws



CAUTION: Do not move or rock the heat sink after you remove the bracket screws. Doing so might damage the thermal interface material, which causes the board to overheat during operation. Damage to the heat sink or the interface material while changing the bracket might void the board warranty.

4. Place the controller on top of the replacement bracket. Place the RAID controller on top of the replacement bracket. Make sure to position the bracket so that the screw holes in the tabs are aligned with the openings in the board as shown in the following figure.

Figure 5. Replacing the Bracket



5. Use an ESD-safe #1 Phillip screwdriver to set the screws to a maximum torque of 4.8 ± 0.5 inch pounds to replace the two Phillips screws that you removed in step 2.

6. Replace the board in its ESD-protective bag and seal the bag appropriately.

ATTENTION: Exceeding this torque specification can damage the board, connectors, or screws, and can void the warranty on the board.

TECHNICAL SUPPORT

For assistance installing, configuring, or running the controller, contact Avago Technical Support:

Web Site: www.avagotech.com

WARRANTY NOTICE

1. Warranty does not cover the return of parts damaged by changing the bracket.

2. Warranty does not cover ESD damage to the controller. Controllers returned without a bracket mounted on the board will be returned without return merchandise authorization (RMA) processing.

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