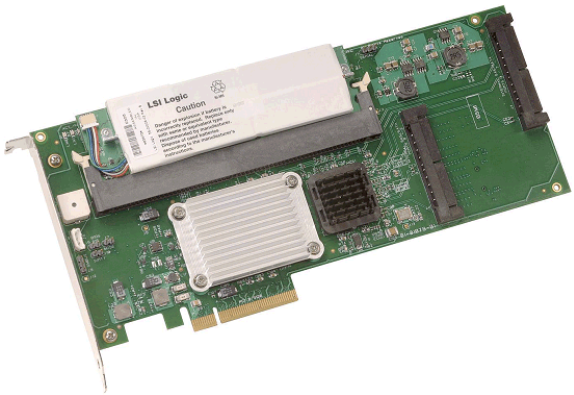
MegaRAID® SAS 8408E RAID Controller

Quick Installation Guide



Thank you for purchasing the MegaRAID® SAS 8408E RAID Controller. Please take a few minutes to read this quick installation guide before you install the controller. If you need more information about any topic covered in this guide, refer to the other documents on your *MegaRAID Universal Software Suite* CD.

Note: The iTBBU02 Transportable Battery Backup Unit can be used with the MegaRAID SAS 8408E RAID Controller. For more information about the iTBBU02, refer to the *MegaRAID Battery Backup Unit User's Guide* or the *MegaRAID iTBBU02 Transportable Battery Backup Unit Quick Installation Guide* on the *MegaRAID Universal Software Suite* CD.

MegaRAID SAS 8408E RAID Controller Installation

CAUTION Back up your data before you change your system configuration, to ensure no loss of data.

Perform the following steps to install the MegaRAID SAS 8408E RAID Controller.

Step 1 Unpack the Controller

Unpack the controller in a static-free environment. Remove it from the antistatic bag and inspect it for damage.

If the controller appears to be damaged, or if the *MegaRAID Universal Software Suite* CD is missing, contact LSI Logic or your MegaRAID OEM support representative.

The *MegaRAID Universal Software Suite* CD contains utility programs, device drivers for various operating systems, and the following documentation:

- *MegaRAID SAS Storage Adapters User's Guide*
- *MegaRAID SAS Software User's Guide*
- *MegaRAID SAS Device Driver Installation User's Guide*
- Software license agreement

Step 2 Prepare the Computer

Turn off the computer and unplug the power cord(s) from the back of the power supply. Remove the cover from the chassis.

CAUTION Make sure the computer is disconnected from the power and from any networks before installing the controller.

Step 3 Review the Jumpers and Connectors

Figure 1 shows the location of the jumpers and connectors on the MegaRAID SAS 8408E RAID Controller. The jumpers are set at the factory and you usually do not need to change them.

Figure 1 MegaRAID SAS 8408E Board Layout

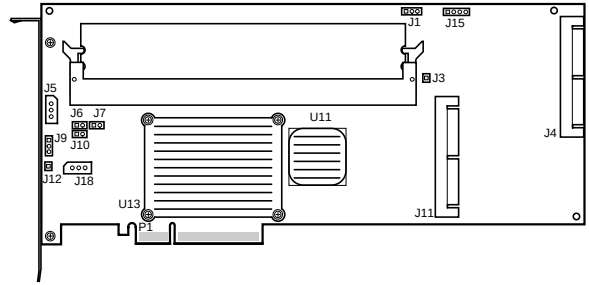


Table 1 describes the jumpers and connectors on the controller.

Table 1 Jumpers and Connectors

Jumpers	Type	Description
J1	Universal Asynchronous Receiver/Transmitter (UART) debugging	3-pin connector Reserved for LSI Logic internal use.
J3	GND connector	Reserved for LSI Logic internal use.
J4	x4 SAS ports 4–7	SFF 8484 x4 connector for connection to physical drives and expanders.
J5	Keyed I^2C connector	3-pin connector Used for enclosure management. Reserved for LSI Logic internal use.
J6	On-board BIOS Enable	2-pin connector The optional BIOS function is enabled or disabled in software depending on the status of this jumper. No jumper: BIOS is enabled (default). Jumper: BIOS is disabled.
J7	Firmware Initialization Mode Select	2-pin connector If the firmware flashed onto the board is corrupted, you need to jumper J7 (this holds the CPU core in reset), so you can flash the firmware. Remove the jumper after you flash the new firmware. No jumper: This is the setting during normal operation (Mode 3). This is the default. Jumper: This holds the CPU core in reset (Mode 0). Note: The card does not function as a RAID controller if this jumper is mounted.
J8	GND connector	Reserved for LSI Logic internal use.
J9	Unkeyed I^2C connector	3-pin connector Used for enclosure management. Reserved for LSI Logic internal use.
J10	Write Pending Indication LED	2-pin connector Connector for enclosure LED. When lit, it indicates the on-board cache contains data and a write from the cache to the hard drives is pending. Optional.
J11	x4 SAS ports 0–3	SFF 8484 x4 connector for connection to physical drives and expanders.
J12	GND connector	Reserved for LSI Logic internal use.
J13	GND connector	Reserved for LSI Logic internal use.
J14	GND connector	Reserved for LSI Logic internal use.
J15	Keyed I^2C connector	4-pin connector Used for enclosure management. Reserved for LSI Logic internal use.
J18	SMBUS header for enclosure management	3-pin header Used for enclosure management. Reserved for LSI Logic internal use.

Step 4 **Check the Memory Module**

Ensure that the memory is present and seated firmly in the DIMM socket.

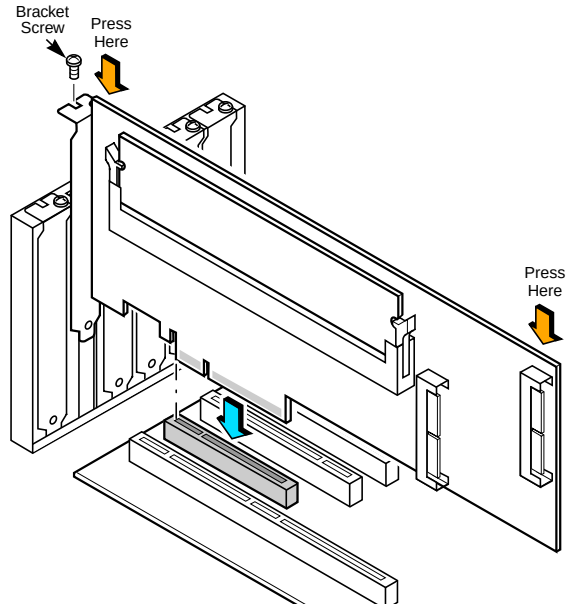
Step 5 **Install the MegaRAID SAS 8408E RAID Controller on the Mainboard**

Insert the MegaRAID SAS 8408E RAID Controller in a PCI Express slot on the motherboard, as shown in Figure 2. Press down gently but firmly to ensure the card is properly seated in the slot. Secure the SAS 8408E to the computer chassis with the bracket screw.

Note: See your mainboard guide for information about the PCI Express slot.

CAUTION *Never* apply pressure to the memory module when inserting the adapter. Applying pressure could break the module.

Figure 2 Installing the MegaRAID SAS 8408E RAID Controller



Step 6 **Configure and Install the SAS and/or SATA II Devices**

Configure the SAS and/or SATA II devices and install them in the host system computer case.

Note: See the device documentation for pre-installation configuration requirements.

Step 7 **Connect the Devices to the Controller**

Connect the cables between the system onboard SAS controller and the SAS and/or SATA II

devices. Refer to the system documentation to view connector locations for the server.

Note: See the *MegaRAID SAS Storage Adapters User's Guide* for diagrams of the cables and connectors.

Step 8 **Power-Up the Computer**

Replace the computer cover and reconnect the power cord(s). Turn on the computer. Ensure that the SAS and/or SATA II devices are powered up before or at the same time as the host computer. If the host computer is powered up before the SAS or SATA II devices, the devices might not be recognized.

During boot, a MegaRAID BIOS message appears similar to the following displays:

```
LSI MEGARAID BIOS VERSION xxxx [date]
Copyright(c) 2005, LSI Logic Corporation
HA-1 (Bus x Dev y) MegaRAID SAS 8408E
PCI-Express RAID Controller
Standard FW xxxx DRAM=xxx MB(SDRAM)
```

The firmware takes several seconds to initialize. During this time the adapter scans the bus(es).

Step 9 **Run the WebBIOS Configuration Utility**

Run the WebBIOS Configuration Utility to configure the physical arrays and logical drives. When the message `Press <Ctrl><H> for WebBIOS` displays on the screen, press CTRL+H immediately to run the utility.

Note: Refer to the *MegaRAID SAS Software User's Guide* on the *MegaRAID Universal Software Suite* CD for detailed steps on configuring physical arrays and logical drives.

Step 10 **Install the Operating System Driver**

The SAS 8408E can operate under various operating systems. To operate under these operating systems, you must install software drivers.

The *MegaRAID Universal Software Suite* CD includes drivers for the supported operating systems, along with documentation. You can view the supported operating systems and download the latest drivers for RAID adapters on the LSI Logic web site at: http://www.lsilogic.com/downloads/main.do.

Access the download center and follow the steps to download the driver.

Refer to the *MegaRAID SAS Device Driver Installation User's Guide* on the *MegaRAID Universal Software Suite* CD for details on installing the driver. Be sure to use the latest Service Packs provided by the operating system manufacturer and review the `readme` file that accompanies the driver.

SUPPORTED RAID LEVELS

The MegaRAID SAS 8408E RAID Controller supports disk arrays using the following RAID levels:

- **RAID 0 (Data Striping):** Data is striped across all disks in the array, enabling fast data throughput. There is no data redundancy. All data is lost if any disk fails.
- **RAID 1 (Disk Mirroring):** Data is written simultaneously to two disks, providing complete data redundancy if one disk fails. The maximum array capacity is equal to the available size of the smaller of the two hard drives.
- **RAID 5 (Disk Striping with Distributed Parity):** Data is striped across all disks in the array. Each disk stores parity information that reconstructs data if a disk fails. Provides good data throughput for applications with high read request rates.
- **RAID 10 (RAID 1 and RAID 0 in Spanned Arrays):** Uses mirrored pairs of disks to provide complete data redundancy. Provides high data throughput rates.
- **RAID 50 (RAID 5 and RAID 0 in Spanned Arrays):** Uses both parity and disk striping across multiple disks to provide complete data redundancy. Provides high data throughput rates.

TECHNICAL SUPPORT

For assistance installing, configuring, or running the SAS 8408E, contact LSI Technical Support:

E-mail:

support@lsil.com

eurosupport@lsil.com (Europe)

Phone Support:

1-800-633-4545 (North America)

+44 1344 413 441 (Europe)

Web Site:

http://www.lsilogic.com/support/

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Find a list of LSI Logic Corporation's U.S. distributors, international distributors, sales offices, and design resource centers on the LSI Logic web site at:

http://www.lsilogic.com/contacts/index.html