LSI MegaRAID SAS 9260-8i card installation

Introduction

This document describes how to install the LSI MegaRAID SAS 9260-8i 6Gb SAS RAID-on-Chip (ROC) card in HP Z series Workstations. Procedures are included for connecting SAS hard drives mounted in hard drive bays and optical drive bays to the Redundant Array of Independent Drives (RAID) controller card.

Kit contents

- LSI MegaRAID SAS 9260-8i controller card
- MiniSAS 4i to 4X SATA internal adapter cable (short)
- 4-Port data cable with 90-degree connectors (long)
- 4-Port data cable with straight connectors (long)
- CD with software drivers and manufacturer's documentation
- Hard drive activity LED cable
- Installation instructions (this document)
- Warranty information

Before you begin

To view *QuickSpecs* and determine the compatibility of this product with your HP computer, see http://www.hp.com/go/productbulletin.

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Warnings and cautions

⚠ **WARNING!** ⚠ Any surface or area of the equipment marked with this symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists. To reduce the risk of injury from a hot component, enable the surface to cool before touching.

⚠ **WARNING!** ⚠ Any surface or area of the equipment marked with this symbol indicates the presence of an electrical shock hazard. To reduce the risk of injury from electrical shock, do not open any enclosed area marked with this symbol.

⚠ **WARNING!** To reduce the risk of electric shock or damage to your equipment:

— Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

— Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.

— Disconnect power from the equipment by unplugging the power cord from the electrical outlet.

⚠ **WARNING!** To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper computer setup, posture, health, and work habits for computer users, and provides important electrical and mechanical safety information. This guide is located at http://www.hp.com/ergo and on the documentation CD (if one is included with the product).

⚠ **WARNING!** If a product is shipped in packaging marked with this symbol, 👥, the product must always be lifted by two persons to avoid personal injury due to product weight.

⚠ **CAUTION:** Static electricity can damage the electronic components of the computer. Before beginning these procedures, be sure you discharge static electricity by briefly touching a grounded metal object.

⚠ **CAUTION:** To prevent damage to the computer, observe the following Electrostatic Discharge (ESD) precautions while performing the system parts removal and replacement procedures:

— Work on a static-free mat.

— Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to the ground.

— Create a common ground for the equipment you are working on by connecting the static-free mat, static strap, and peripheral units to that piece of equipment.

📝 **NOTE:** HP accessories are for use in HP computer products. They have been extensively tested for reliability and are manufactured to high quality standards.

Step 1—Preparing for component installation

📝 **NOTE:** Computer models vary. All illustrations are examples only.

Download and install updates

1. Check for available system BIOS updates specified for your HP computer model and operating system at http://www.hp.com/support.

2. Install the system BIOS updates, if available.

Accessing the internal components of the computer

1. If you need help preparing the computer for this installation, consult the removal and replacement procedures in the service guide for your computer at http://www.hp.com/support/manuals.

2. Power down the computer, and then disconnect the power cord.

3. Power down all external devices, and then disconnect them from the computer.

4. Remove the side access panel.

Removing components

1. If present, remove the card support to enable access to the expansion slots and system board connectors.

2. Select an appropriate PCIe2 x16 or x8 expansion slot on the system board. Any other slot may result in sub-optimal performance.

📝 **NOTE:** To identify an available PCIe expansion slot, see the service label on the side access panel.

Figure 1 Removing the expansion slot cover
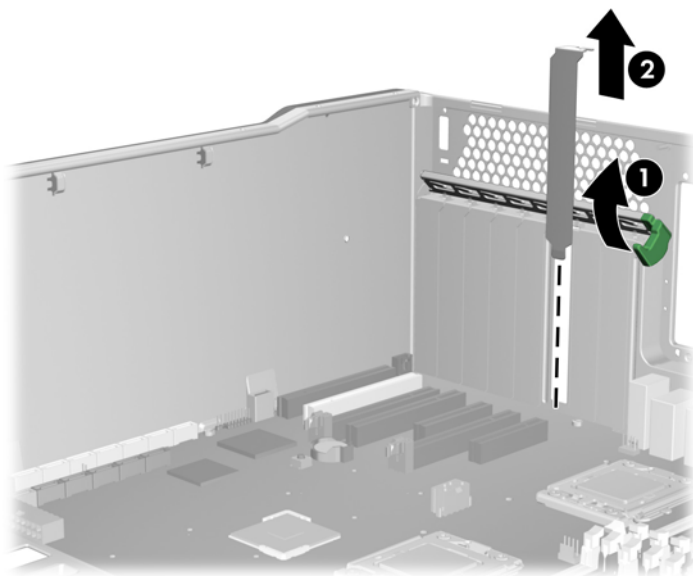
Step 2—Installing the controller card

⚠ **CAUTION:** Do not install the SAS RAID controller card between two high-powered cards.

1. Install the SAS RAID controller card into the selected PCIe expansion slot on the system board. Ensure that the card is fully seated in the expansion slot.

2. Close the expansion slot retention clamp to secure the card in the slot.

Figure 2 Installing the SAS RAID controller card

Step 3—Configuring the cabling

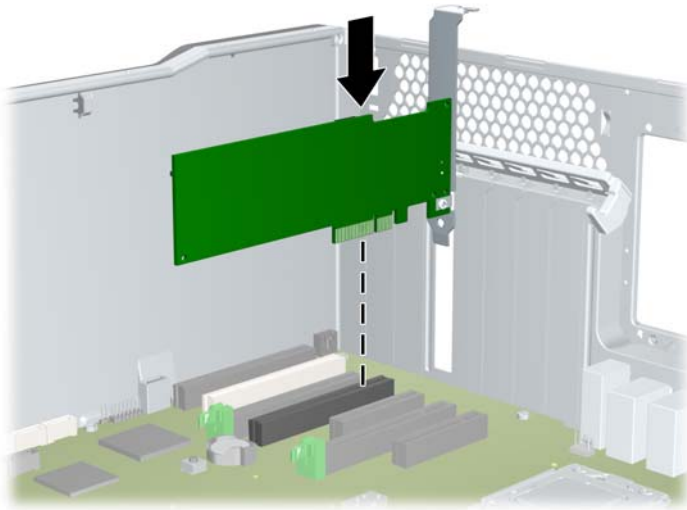The RAID controller card can be used to control SAS hard drives located in the internal hard drive bays, and SAS hard drives located in the optical bays.

The data cable connections for RAID differ between computer models. To determine the correct connection for your hard drives, identify the applicable HP computer model and the location of the hard drive being connected in the following table. To connect existing hard drives, disconnect the existing single data cables from the system board, and then choose the correct connection type.

The LED cable connection is similar for all HP Workstation models.

Table 1 Data cable configuration guide

HP workstation model	Location of hard drive	Connection type	Description
HP Z400 Workstations	Internal hard drive bay	Standard data cable connections on page 8	Use the long 4-port data cable with **90-degree** connectors provided in this kit to connect the hard drives to the RAID controller card.
HP Z400 Workstations	Optical bay	Standard data cable connections on page 8	Use the long 4-port data cable with **straight** connectors provided in this kit to connect the hard drives to the RAID controller card.
HP Z600 Workstations HP Z800 Workstations	Internal hard drive bay	Blind-mate data cable connections on page 6	The blind-mate data cable from the applicable internal hard drive is disconnected from the system board and connected to the appropriate port connector on the short MiniSAS adapter cable. The MiniSAS adapter is then connected to the RAID controller card.
HP Z600 Workstations HP Z800 Workstations	Optical bay	Standard data cable connections on page 8	Use the long 4-port data cable with **straight** connectors provided in this kit to connect the hard drives to the RAID controller card.

RAID controller card features

Each internal connector, labelled (1) and (2), supports up to four SAS hard drives.

The hard drive activity LED is connector (3).

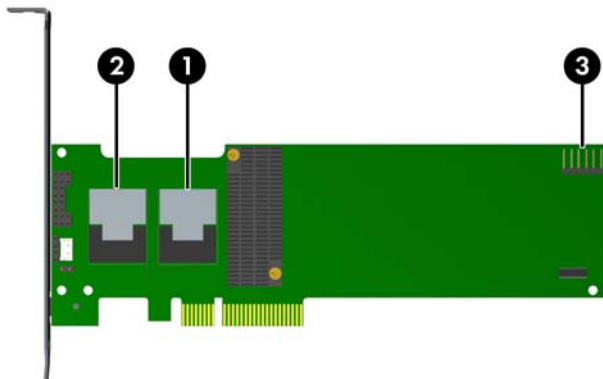**Figure 3** Identifying the SAS controller ports

Table 2 **Port connectors**

Connector	Description
(1)	Internal connector 1 (SFF-8087 MiniSAS labelled JT6)
(2)	Internal connector 2 (SFF-8087 MiniSAS labelled JT7)
(3)	Hard drive LED connector (2-pin connector labelled JT2)

Card BIOS default settings:

● See for information about setting and resetting card BIOS defaults.

# Blind-mate data cable connections

📝 **NOTE:** This procedure assumes that the primary hard drive is located in HDD-BAY-0, and that all internal bays are being connected to the RAID controller.

• It is not necessary to connect all internal drives or use all four of the connectors on the MiniSAS internal adapter cable.

• The short MiniSAS 4i-4X SATA cable is used only to connect SAS hard drives located in the internal hard drive bays of HP Z Workstations with blind-mate cabling.

• A long MiniSASi data cable is used to connect SAS hard drives located in the optical drive bays. See .

For internal SAS hard drives in HP workstations with preinstalled blind-mate cabling plugged into the system board, such as HP Z600 and HP Z800 Workstations:

1. Locate and disconnect the HDD-BAY-0 cable from the system board SAS connectors.

   **Figure 4** Locating the blind-mate hard drive cables
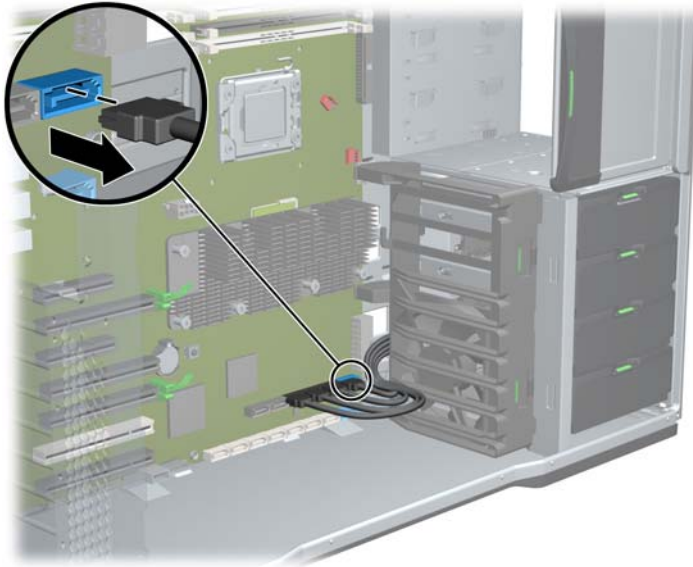
2. To connect the SAS hard drive data cables to the MiniSAS 4i to 4X SATA internal adapter cable:

   a. Connect the HDD-BAY-0 cable to port 0 (P0) on the MiniSAS internal adapter cable.

   b. Match the subsequent HDD-BAY cables to the corresponding port on the MiniSAS internal adapter cable.

   c. For RAID configuration, populate the internal hard drive bays before populating the optical bays with hard drives.

   Figure 5 Connecting the hard drive cables to the MiniSAS adapter cable
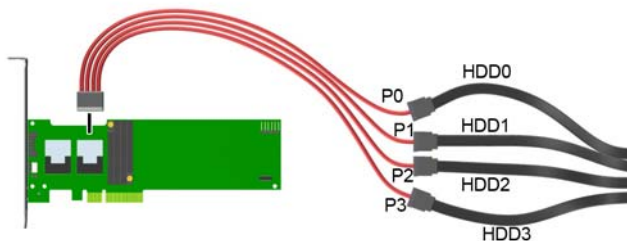
3. Attach the coupled end of the data cable to *Internal connector 1* on the SAS RAID controller card.

**Figure 6** RAID controller with 4 internal hard drives connected
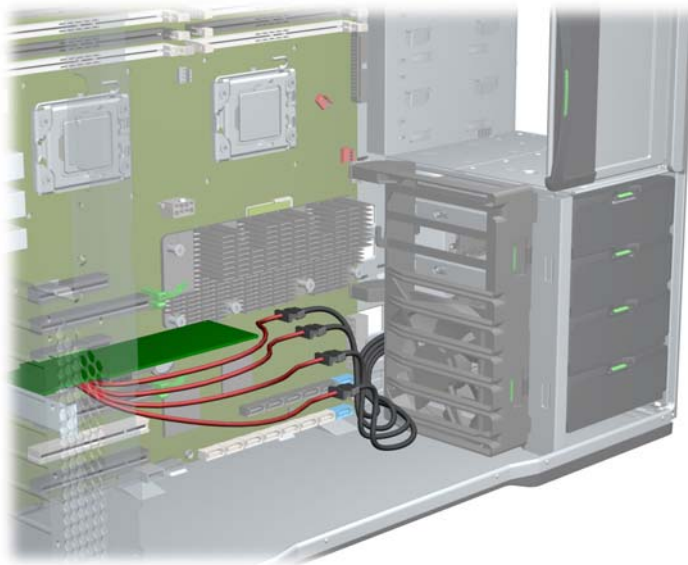
4. If connecting more than four hard drives, attach the second data cable supplied with the controller card kit to *Internal connector 2* on the controller card, and continue with Standard data cable connections on page 8.

5. Continue with Connecting the LED activity indicator on page 10.

Standard data cable connections

This section applies to SAS hard drives installed in all optical bays, and SAS hard drives installed in the internal hard drive bays of HP workstations without blind-mate cabling.

1. Ensure that there is a SAS-to-SATA interconnect cable adapter (supplied with the HP workstation SAS hard drive kit) attached to the data connector on the SAS hard drive.
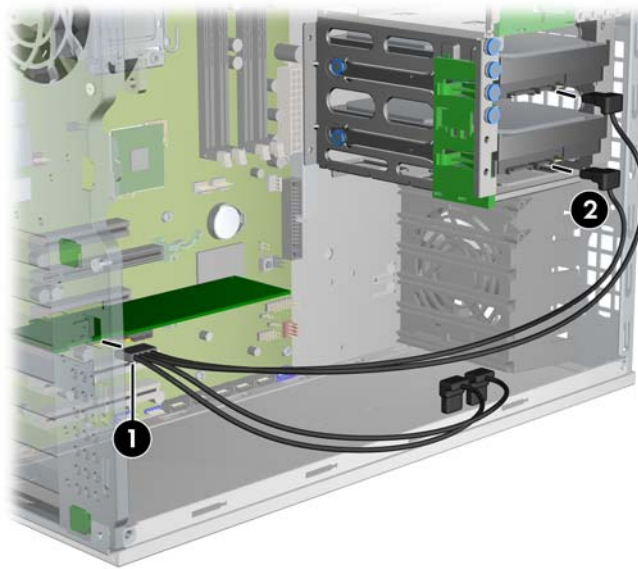
Figure 7 Attaching the SAS-SATA adapter
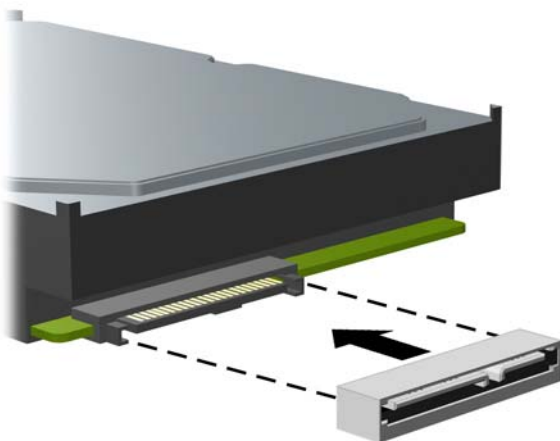
2. Select the long 4-port data cable that best fits the computer. Avoid sharp bends in the data cables. To choose a cable, see Table 1 Data cable configuration guide on page 5.

3. Select the *Internal connector* on the RAID card. *Internal connector 1* is used to connect the first four hard drives (maximum). *Internal connector 2* is used to connect up to four additional drives.

4. To connect the hard drives:

   a. Attach the coupled end of the data cable to the selected *Internal connector* on the RAID controller (1).

   b. Attach the four splitter cables on the other end of the data cable to the data cable connectors on the hard drives (2).

   c. To connect power to the hard drives, see the hard drive product documentation.

   Figure 8 Data cable connections

5. Continue with .

Connecting the LED activity indicator

1. Attach one end of the hard drive activity LED cable to the SAS RAID controller card (1).

2. Attach the other end of the hard drive activity LED cable to the hard drive LED activity connector on the system board (2).
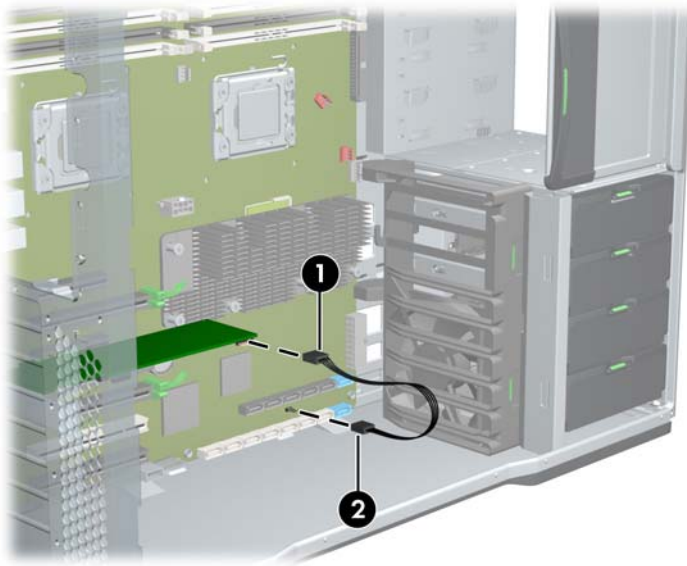
> **NOTE:** To locate the hard drive activity LED (HDD-LED) connector on the system board, refer to the service label inside the side access panel. Use the LED cable appropriate for the computer.

Figure 9 Attaching the HDD-LED cable

Step 4—Reassembling the computer

1. Reinstall the card support, if applicable.

2. Reinstall the side access panel.

3. Reconnect power to the computer and all external devices.

4. Restore power to the computer and all external devices.

Step 5—Loading and setting up driver software

For instructions on loading and setting up the SAS drivers for use with your computer, see the manufacturer's documentation shipped with the SAS RAID controller.

At the time of component installation, look for device firmware and driver updates, designated for your computer model and operating system. You can obtain updates from http://www.hp.com/support.

Step 6—Configuring RAID devices

📝 **NOTE:** Verify the RAID card internal data connectors are enabled. For card setup instructions, see the manufacturer's documentation included in this kit.

For detailed instruction on configuring RAID devices, see the service guide for the HP computer model at http://www.hp.com/support.

Additional information is available at http://www.hp.com/support/RAID_FAQs

Japanese 日本語

This document is available in Japanese. See http://www.hp.com/support/manuals, then select your product and select **Japanese** from the drop down **Manual Language** menu.

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