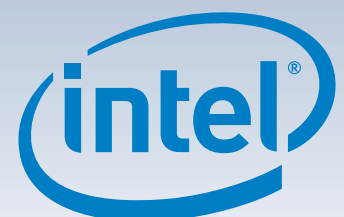# Intel® RAID Controller RS3DC040/ RS3DC080
Quick Installation User's Guide

Thank you for buying an Intel® RAID Controller. Your Intel® RAID Controller provides reliability, high performance, and fault-tolerant drive subsystem management, and it offers an ideal RAID solution for the internal storage of workgroup, departmental, and enterprise systems. The following information will help you assemble your Intel® RAID Controller and install components.

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.

This guide and other supporting documents are located on the web at:
http://www.intel.com/support.

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Warning

⚠️ Read all caution and safety statements in this document before performing any of the instructions. Also see the *Intel® Server Board and Server Chassis Safety Information* document at: http://www.intel.com/support/motherboards/server/sb/cs-010770.htm for complete safety information.

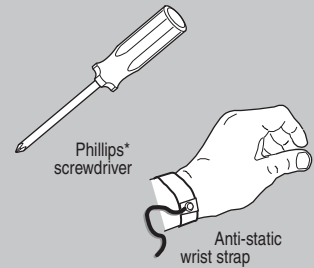## Warning

⚠️ Installation and service of this product to be performed only by qualified service personnel to avoid risk of injury from electrical shock or energy hazard.

Caution

⚠️ Observe normal ESD [Electrostatic Discharge] procedures during system integration to avoid possible damage to server board and/or other components.

Tools Required

Phillips* screwdriver

Anti-static wrist strap

Product Overview

The Intel® RAID Controller RS3DC040/RS3DC080 is a PCI-Express® (PCIe®) 3.0, low-profile controller with RAID control capability, based on the LSISAS3108 RAID On-a-Chip (ROC) device.

The Intel® RAID Controller RS3DC040 uses 1 GB of DDR3 1866-MHz memory and controls four internal Serial Attached SCSI (SAS) / Serial Advanced Technology Attachment (SATA) ports through one SFF-8643 mini-SAS HD-4i internal connector.

The Intel® RAID Controller RS3DC080 uses 1 GB of DDR3 1866-MHz memory and controls eight internal Serial Attached SCSI (SAS) / Serial Advanced Technology Attachment (SATA) ports through two 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.

These 12Gb/s Intel® RAID Controllers are based on the LSI first-to-market SAS IC technology and proven MegaRAID technology. As third-generation PCIe RAID controllers, these controllers address the growing demand for increased data throughput and scalability requirements across midrange and enterprise-class server platforms. These RAID controllers provide these features:

- 12.0 Gb/s SAS III performance

- 6.0 Gb/s SATA III performance

- Eight-lane 8 GT/s PCIe host interface

SAS technology brings a wealth of options and flexibility with the use of SAS devices and SATA devices within the same storage infrastructure. However, SAS devices and SATA devices bring individual characteristics that make each one a more suitable choice depending on your storage needs. MegaRAID products give you the flexibility to combine these two similar technologies on the same controller, within the same enclosure, and in the same virtual drive.

NOTE: These RAID controllers support SATA II and SATA III technologies.

For more information, including the technical specifications for your RAID controller, refer to the *12Gb/s Intel® RAID Controllers User Guide* on the Intel website http://www.intel.com/support.

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

General Installation Process

1 Unpack the RAID Controller

⚠ CAUTION: It is good practice to back up your data before adding hardware, such as a RAID controller, to your system.

Unpack the RAID controller in a static-free environment. Remove the controller from the antistatic bag, and inspect it for damage. A low-profile bracket is included with the RAID controller. If the RAID controller appears to be damaged or the low-profile bracket is missing, contact Intel or your reseller support representative.

The latest versions of the documentation, drivers, and firmware are available on the Intel website at http://www.intel.com/support. See Reference Documents for more information.
The website contains utility programs, device drivers for various operating systems, and related documentation.
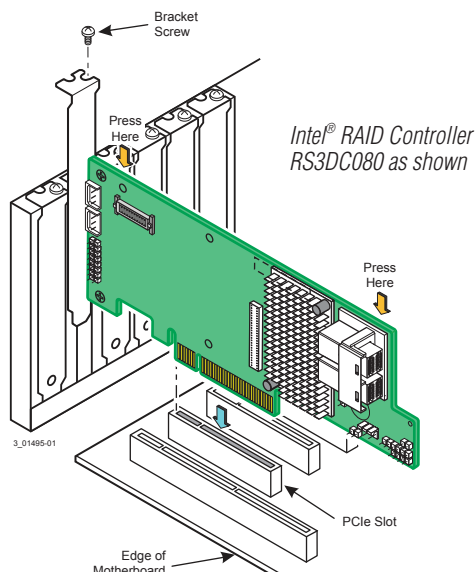
2 Prepare the Host Computer

⚠ CAUTION: Before you install the RAID controller, make sure that the host computer is disconnected from the power and from any networks.

Turn off the host computer, and unplug the power cords from the rear of the power supply. Remove the cover from the host computer.

3 Install the RAID Controller

Insert the RAID controller into a PCIe slot on the motherboard in the host computer, as shown in the following figure. Press down gently, but firmly, to seat the RAID controller correctly in the slot. Secure the RAID controller to the host computer chassis with the bracket screw.

⚠ NOTE: This RAID controller is a PCIe x8 card, and it can operate in x8 or x16 slots. Some PCIe slots, however, support only PCIe graphics cards; if a RAID controller is installed in one of these slots, the RAID controller will not function. Refer to the guide for your motherboard for information about the PCIe slot.

Bracket Screw

Press Here

Intel® RAID Controller RS3DC080 as shown

Press Here

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PCIe Slot

Edge of Motherboard

4 Configure and Install the SAS/SATA Devices

Configure and install the SAS devices, SATA devices, or both in the host computer case.

Refer to the documentation for the devices for any preinstallation configuration requirements.

5 Connect the RAID Controller to the SAS/SATA Devices

Use SAS cables to connect the RAID controller to SAS devices, SATA devices, or both. Refer to *12Gb/s Intel® RAID Controller User Guide* on the Intel website http://www.intel.com/support for information about the connector locations.

⚠ NOTE: Refer to the *12Gb/s Intel® RAID Controller User Guide* on the Intel website http://www.intel.com/support for detailed information about the SAS cables.

General Installation Process

6 Power up the System

Reinstall the computer cover, and reconnect the power cords. Turn on the power to the host computer. Make sure that the power is turned on to the SAS devices and the SATA III devices before or at the same time that the power to the host computer is turned on. If the power is turned on to the host computer before it is turned on to the devices, the host computer might not recognize the devices.

The firmware takes several seconds to initialize. During this time, the RAID controller scans the ports.

7 Run the Intel® RAID BIOS Configuration Utility

Run the Intel® RAID 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+G to run the utility.

⚠ NOTE: Refer to the *Intel® RAID Software User Guide* for detailed steps on configuring drive groups and virtual drives.

8 Install the Operating System Driver

The RAID controller can operate under various operating systems, but you must install the software drivers first.

You can view the supported operating systems and download the latest drivers for RAID controllers from the Intel website at http://www.intel.com/support.

Refer to the *Intel® RAID Software User Guide* on http://www.intel.com/support for more information about installing the driver. Be sure to use the latest service packs that are provided by the operating system manufacturer and to review the `readme` file that accompanies the appropriate driver.

Reference Documents

If you need more information about any topic covered in this guide, refer to the following documentation on the Intel website at http://www.intel.com/support:

- *12Gb/s Intel® RAID Controllers User Guide*
- *Intel® RAID Software User Guide*
- *Software license agreement*

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