# Quick Installation Guide
# Avago SAS 9305-16i PCI Express® to 12Gb/s Host Bus Adapter

**Thank you for purchasing the Host Bus Adapter (HBA). Please take a few minutes to read this quick installation guide before you install the HBA.**

**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.

## Hardware Installation Instructions

To install the Avago 12Gb/s Serial Attached SCSI (SAS) HBA, follow these steps:

1. **Unpack the HBA, and inspect it for damage.** Unpack the HBA in a static-free environment. Remove the HBA from the anti-static bag, and carefully inspect the device for damage. 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 computer.** Turn off the computer, and disconnect the power cord from the rear of the power supply.

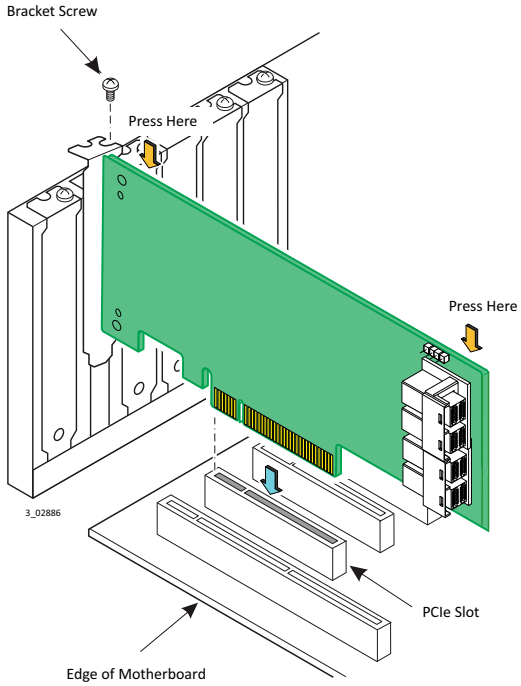
**CAUTION:** **Disconnect the computer from the power supply and from any networks to which you will install the HBA, or you risk damaging the system or experiencing electrical shock.**

3. **Remove the cover from the chassis.**

4. **Insert the HBA 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 this bracket screw, if applicable. Align the HBA to a PCIe slot. Press down gently, but firmly, to seat the HBA correctly in the slot. The following figure shows how to insert the HBA into a PCIe slot.

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

Figure 1. Installing the Avago 12Gb/s 9305-16i HBA in a PCIe Slot




5. **Connect SAS cables between the HBA and the SAS backplane or any other SATA or SAS device.** The Avago 12Gb/s SAS HBA has SFF-8643, internal x4, mini-SAS HD connectors. Use cables with an internal mini-SAS HD connector on one end (to connect to the HBA) and the appropriate connector on the other end to attach to the backplane or SAS/SATA devices.

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6. **Make sure the system provides the required airflow for the controller.** Airflow must be at least 200 linear feet per minute (LFM) at 55 °C inlet temperature to avoid operating the Avago SAS 3216 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.

## Driver Installation

All driver installation instructions are available at http://www.avagotech.com/support/download-search. Select **12Gb/s SAS Host Bus Adapters > *SAS 9305-16i Host Bus Adapter* > Software Downloads**.

## Replacing the Bracket

To replace the bracket for the Avago 12Gb/s SAS HBA, follow these steps:

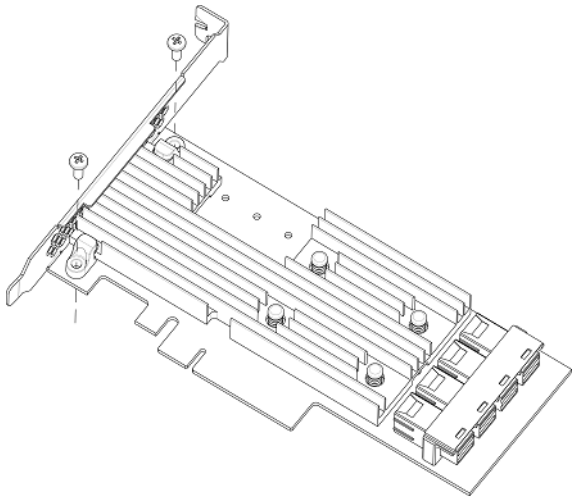
1. **At an ESD-safe workstation, remove the board from its ESD protective bag.**

**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.

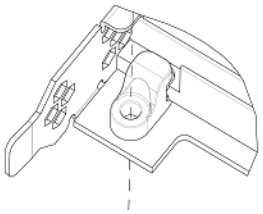
**CAUTION: Damaging the screw can void the warranty. To prevent damage to the screw, make sure that the screwdriver is centered in the top of the screw.**

Figure 2. Removing the Bracket 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.

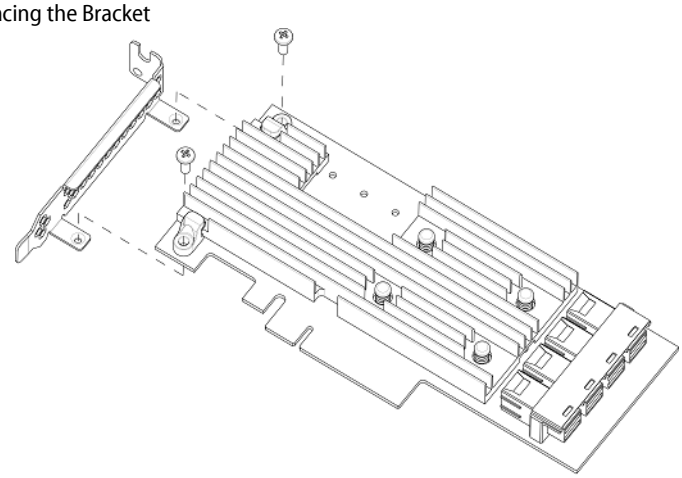
Figure 3. Heat Sink Held in Place by Retaining Clips Attached by Bracket Screws



**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 4. Replacing the Bracket



**5. Use an ESD-safe #1 Phillips torque 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 HBA, 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 HBA. HBAs returned without a bracket mounted on the board will be returned without return merchandise authorization (RMA) processing.



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