Quick Installation Guide
9400-8i8e Tri-Mode 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 Tri-Mode HBA, follow these steps:

1. **Unpack the adapter, and inspect it for damage.** Unpack the adapter in a static-free environment. Remove the adapter from the antistatic bag, and carefully inspect the device for damage. If you notice any damage, contact a Broadcom® representative or your reseller sales and 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 adapter, or you risk damaging the system or experiencing electrical shock.**

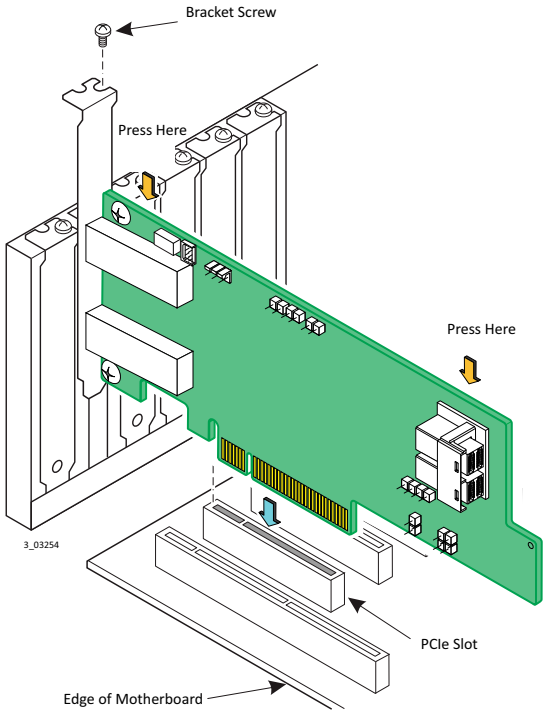
3. **Remove the cover from the chassis.**
4. **Check the mounting bracket on the adapter (system dependent).** If required for your system, replace the full-profile mounting bracket that ships on the adapter with the low-profile bracket supplied. Complete the following steps to attach the low-profile bracket.
   - **a.** Using a No.1 Phillips screwdriver that is ESD safe, remove the two Phillips screws that connect the full-profile bracket to the board. Unscrew the two screws located at the top and bottom edges of the board. Avoid touching any board components with the screwdriver or bracket.
   - **b.** Remove the full-profile bracket. Do *not* damage the adapter.
   - **c.** Place the adapter on top of the low-profile bracket. Position the bracket so that the screw holes in the tabs align with the openings in the board.
   - **d.** Using a No.1 Phillips torque screwdriver that is ESD safe, set it to a maximum torque of 4.8 ± 0.5 inch-pounds. Replace the two Phillips screws removed in step a.

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

5. **Insert the adapter 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 adapter to a PCIe slot. Press down gently, but firmly, to seat the adapter correctly in the slot. The following figure shows how to insert the adapter into a PCIe slot.

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

Figure 1 Install the 9400-8i8e Tri-Mode HBA in a PCIe Slot

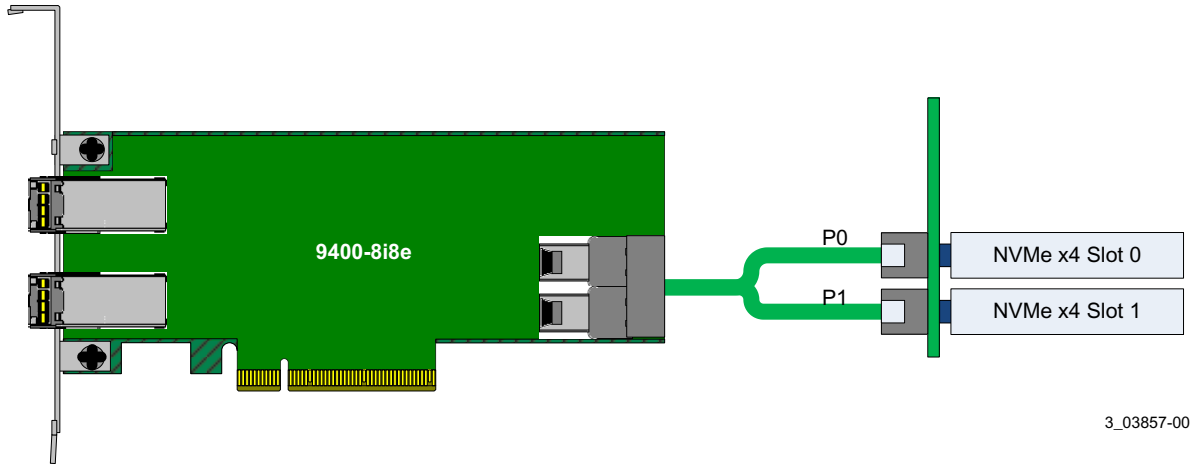


6. Connect the cables between the adapter and the mid-plane or storage devices. The 9400-8i8e Tri-Mode HBA has two SFF-8643 internal x4 mini-SAS HD connectors and two SFF-8644 external x4 mini-SAS HD connectors.

- For SAS/SATA connections, connect standard 12Gb/s SAS cables with internal or external mini-SAS HD connectors on one end to the adapter and the appropriate connector on the other end to attach to the backplane, enclosure, or SAS/SATA devices.
- For PCIe/NVMe connections, use the appropriate U.2 enabler cable to enable connection to the backplane connectors, as shown in the following figure. The U.2 enabler cable routes the REFCLK, sidebands, and PCIe signals to the appropriate pins on the backplane connector. Different U.2 enabler cables are available, depending on the backplane connector type. Using standard 12Gb/s SAS cables for NVMe connections might result in damage to the PCIe adapter or the drive. For more information, refer to the *Storage Adapter Cable Guide* and the *Broadcom MegaRAID® and HBA Tri-Mode Storage Adapters User Guide* at http://www.broadcom.com/support/download-search.

CAUTION: For NVMe connections to an SFF-8639 (U.2) bay or connections to a PCIe switch, use only approved cables with REFCLK forwarded on the proper pins. Improperly connecting a standard 12Gb/s SAS cable to an SFF-8639 bay can damage the adapter and the drive.

Figure 2 9400-8i8e Tri-Mode HBA Connecting by U.2 Enabler Cable to Backplane Connectors



Each leg of the U.2 enabler cable must connect to adjacent drives; otherwise, the LEDs might not work properly. It does not matter which leg of the cable is plugged into which connector pair as long as adjacent pairs are used. For more information on NVMe LED functionality, refer to the *Broadcom MegaRAID and HBA Tri-Mode Storage Adapters User Guide.*

NOTE: NVMe (PCIe) connections are only supported using the internal ports.

7. Make sure that the system provides the required airflow for the adapter. Airflow must be at least 200 linear feet per minute (LFM) at 55°C inlet temperature to avoid operating the board components above their maximum rated junction temperatures.

8. Replace the cover, 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.

9. Install drivers and check for updates. Broadcom routinely post updates for firmware, drivers, and utilities. Check for the latest updates on the support and download center, http://www.broadcom.com/support/download-search

The default firmware loaded on the adapter enables connections to SAS, SATA, and PCIe (NVMe) storage devices.

For more information on connecting SAS, SATA, and PCIe (NVMe) storage devices to the adapter, refer to the *Broadcom MegaRAID and HBA Tri-Mode Storage Adapters User Guide* at http://www.broadcom.com/support/download-search.

The hardware installation of your Tri-Mode HBA is complete.

TECHNICAL SUPPORT

For assistance installing, configuring, or running the HBA, contact Broadcom Technical Support:

Website: www.broadcom.com

WARRANTY NOTICE

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

2. The 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.

Corporate Headquarters
San Jose, CA
Pub Number: 9400-8i8e-IG100

Website
www.broadcom.com

August 31, 2017.