Emulex® LightPulse® Host Bus Adapters

Quick Installation Guide
Release 12.0

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Chapter 1: Introduction

This manual describes how to install an Emulex® LightPulse® host bus adapter (HBA).

NOTE: Illustrations in this manual are examples only. The actual hardware might vary.

Figure 1: Two-Port Adapter

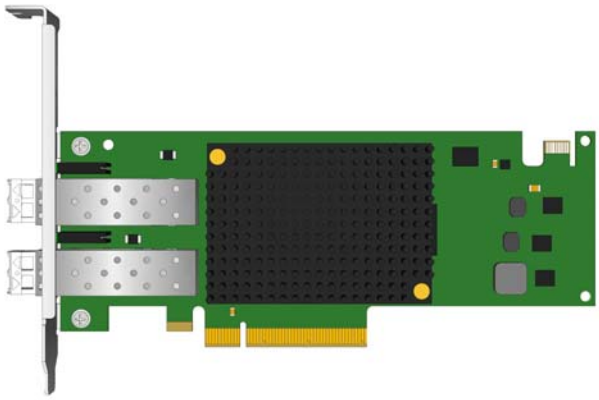
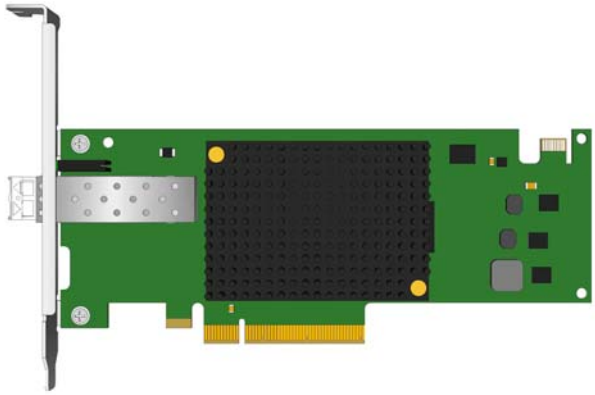


Figure 2: Single-Port Adapter



1.1 Adapter Identification

Each adapter ships with several numbers clearly marked on the board. Record these numbers before installation for later reference.

- **IEEE address** – a unique 64-bit identifier used for system configuration.
- **WWN** – derived from the IEEE address; the Fibre Channel (FC) industry uses the WWN for FC connectivity.
- **Serial number** – assigned by Broadcom® and used when communicating with Broadcom.

NOTE: If the adapter has two ports, it has two IEEE addresses and two WWNs, one for each port.

Chapter 2: Installation

The Emulex LightPulse adapter can be connected to fiber optic cables (used with embedded optical transceivers). Additional information for these cable connections and other installation procedures are described in the following sections.

2.1 Preparing the Adapter for Installation

Before installing the adapter, perform one or both of the following procedures:

- Change the bracket to a low-profile version as explained in Section 2.1.1, Changing the Bracket.
- Disable or enable the Secure Firmware feature available on selected adapters using the instructions in Section 2.1.2, Enabling or Disabling the Secure Firmware Feature.

If changes to the adapter are not required, proceed to Section 2.2, Installing the Adapter.

2.1.1 Changing the Bracket

A standard, full-height PCIe bracket is factory-installed; however, a low-profile bracket is included in the box with any adapter that supports the low-profile bracket change. The low-profile mounting bracket is shorter than the standard bracket: approximately 3.11 in. (7.9 cm) compared to 4.75 in. (12.06 cm) long.

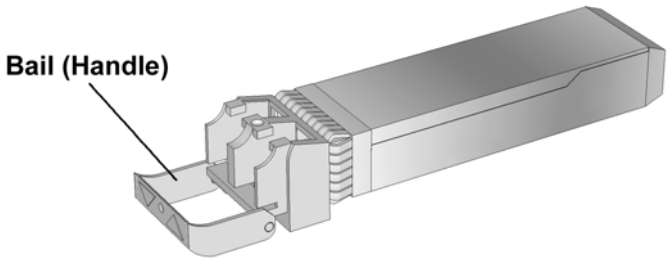
To change the bracket:

1. Some adapters have optical transceivers embedded in their cage assemblies. These optical transceivers must be removed before the bracket can be removed. If the adapter contains optical transceivers, continue with the following steps; otherwise, proceed to step 4.

CAUTION! This is a delicate operation. Take care not to damage the optical transceiver.

The adapter uses different types of optical transceivers. Figure 3 shows an example of one type with the bail (handle) extended.

Figure 3: Typical Optical Transceiver



2. To remove a transceiver, pull the bail (handle) out and down to release the latch and gently pull the transceiver out. Do not force it. After the latch is released, the transceiver slides out easily.

   Figure 4 shows a transceiver with the latch released (bail extended) and another transceiver latched in place.

Figure 4: Releasing the Latch on an Optical Transceiver

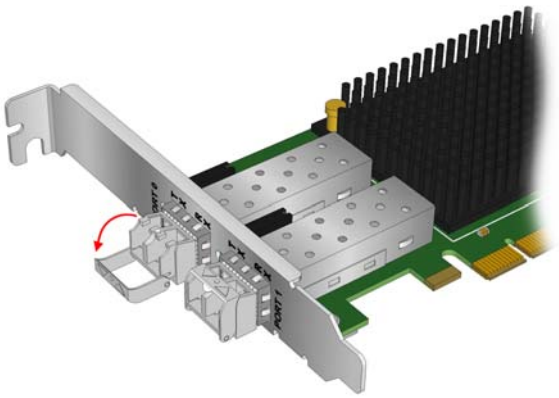
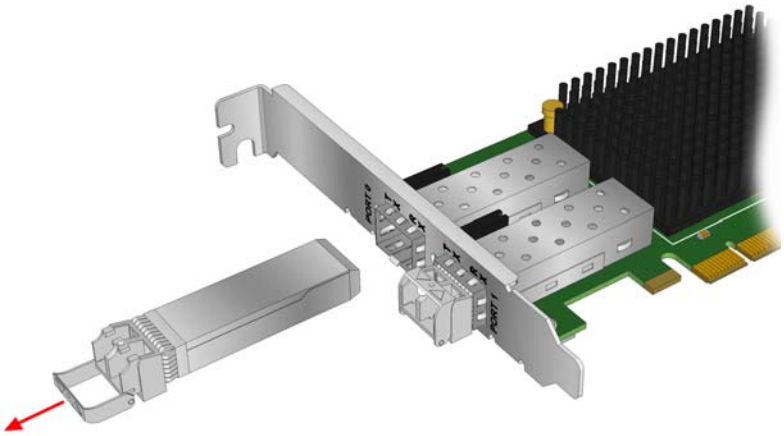


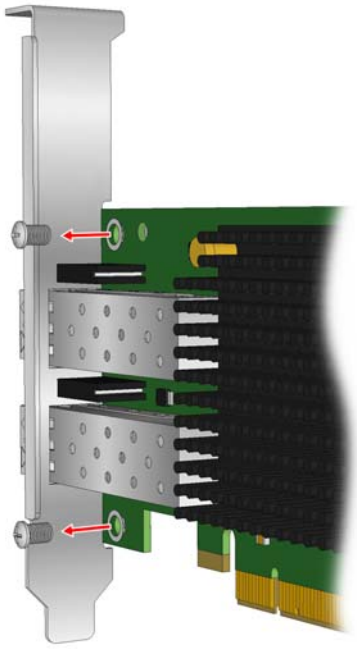
Figure 5 shows an extracted transceiver and another transceiver latched in place.

Figure 5: Removing an Optical Transceiver



3. Observing Electrostatic Discharge (ESD) precautions, store the transceiver in an ESD-safe place.
4. Remove the mounting bracket screws from the top of the adapter. Figure 6 shows the screws that are removed from the bracket.

Figure 6: Removing the Bracket



5. Remove the bracket and store it for future use.
6. Align the new mounting bracket tabs with the holes in the adapter.

NOTE: Be careful not to push the bracket past the EMI compression tabs of the SFP+ cage. Ensure that the light emitting diodes (LEDs) are properly aligned with the holes in the bracket.

7. Reinstall the screws that attach the adapter to the bracket.
8. Reinstall the transceiver by sliding it into the housing. When the latch engages, it clicks.
9. Push the bail back into place.

2.1.2 Enabling or Disabling the Secure Firmware Feature

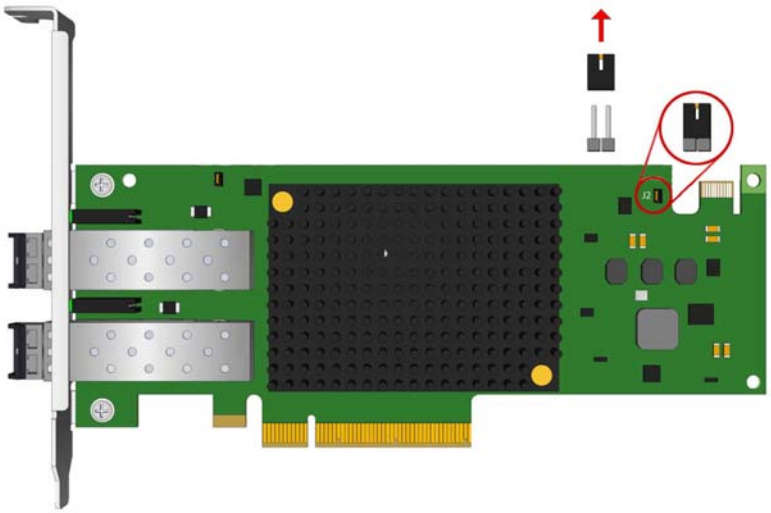
The LPe31000-series and LPe32000-series adapters have a jumper that enables or disables the Secure Firmware feature as required.

To update the firmware using a tool such as the OneCommand® Manager application, boot utilities, or Elxflash utilities, there is no need to remove the jumper. The Secure Firmware feature can remain enabled as long as the update is from a secure firmware version to another secure firmware version. To change the firmware version from a secure firmware version to an unsecured firmware version, you must remove the jumper before updating the firmware.

Replace the jumper after the firmware update is complete.

Figure 7 provides an example of a common location of the Secure Firmware jumper.

Figure 7: Secure Firmware Jumper Location J3



2.2 Installing the Adapter

To install the adapter:

1. Turn off the computer.
2. Remove the computer case.
3. For a stand-up adapter, remove the blank panel from an empty PCIe bus slot.

NOTE: To prevent damage to the adapter, select a slot that will not cause the adapter to interfere with the case.

4. Insert the adapter into the selected slot. Press firmly until the adapter is seated.
5. Secure the adapter mounting bracket to the case with a panel screw or clip.
6. Replace the computer case and tighten the case screws.

The adapter is now installed in the server and is ready for a device attachment.

2.3 Attaching Media

You can connect fiber optic cables to the adapter.

An adapter does not allow normal data transmission on optical links unless it is connected to a compatible optical interface connection.

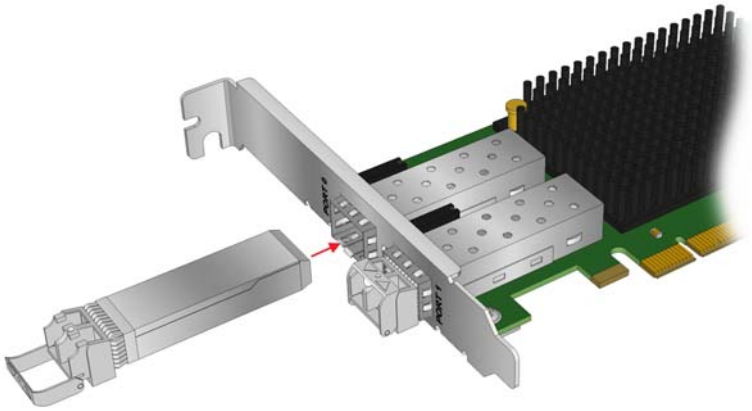
NOTE: Use short range (SR), direct-connecting receptacle (DCR) multimode fiber cable for interface connections to a network.

To attach devices to the adapter:

1. Connect the appropriate cable to the adapter.

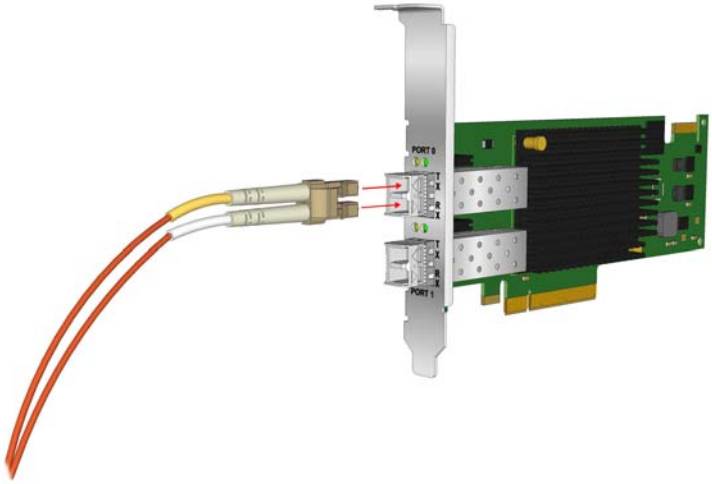
   When connecting an optical cable, ensure that the cages have optical transceivers installed in them (see Figure 8).

Figure 8: Installing an Optical Transceiver



After the optical transceivers are installed, insert the optical cable into the LC connectors on the adapter (see Figure 9).

Figure 9: Connecting a Fiber Optic Cable



2. After the appropriate cable is connected to the adapter, connect the other end to the FC device.
   When the cable is connected to the adapter, you are ready to apply power to the system.

2.4 Applying Power

To apply power:

1. Verify that the adapter is securely installed in the system.
2. Verify that the correct media is attached.
3. Plug in and turn on the system.
4. Observe the boot banner for power-on self-test (POST) results.

2.5 Viewing the LEDs

You can view the green and yellow LEDs through openings in a stand-up adapter's mounting bracket. The green LED indicates firmware operation, and the yellow LED indicates port activity or link speed. Each port has a corresponding set of green and yellow LEDs. (see Figure 10).

Figure 10: Optical Adapter LED Indicators

The following table summarizes POST conditions and results:

NOTE: For the Link Rate conditions, there is a 1 second pause when the LED is off between each group of fast blinks (2, 3, 4, or 5). Observe the LED sequence for several seconds to be sure you have correctly identified the pattern.

Table 1: POST Conditions and Results

Green LED	Yellow LED	State
Off	Off	No SFP module installed or boot failure (dead board)
Off	On	POST failure (dead board)
Off	Slow blink	Boot failure after POST
Off	Flashing	POST processing in progress
On	Off	Failure in common code module
On	On	Failure in common code module
On	1 fast blink	Normal (link up at 2 gigabit FC [GFC]) (legacy compatibility only)
On	2 fast blinks	Normal (Link up at 4GFC)
On	3 fast blinks 4 fast blinks (LPe12002-M8 adapters only)	Normal (Link up at 8GFC)
On	4 fast blinks	Normal (Link up at 16GFC)
On	5 fast blinks	Normal (Link up at 32GFC)
Slow blink	Off	Normal – link down
Fast blink	Fast blink	Beaconing

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