

# **Emulex® LPe31000-Series and LPe32000-Series HBA Firmware and Boot Code Releases 12.8.614.17 and 12.8.614.23**

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## **Purpose and Contact Information**

These release notes describe the new features, resolved issues, known issues, new firmware features or resolved issues that require a host reboot, technical tips, and license notices associated with this firmware and boot code release for Emulex® LPe31000-series and LPe32000-series HBAs.

For the latest product documentation, go to [www.broadcom.com](http://www.broadcom.com). If you have questions or require additional information, contact an authorized Broadcom® Technical Support representative at [ecd-tech.support@broadcom.com](mailto:ecd-tech.support@broadcom.com).

## **New Features**

### **Release 12.8.614.23**

No new features were added to this release.

### **Release 12.8.614.17**

- Support for NVMe over FC SLER (Sequence Level Error Recovery) is added to the firmware.
- The flash part manufacturer has been added to the firmware dump output.

**NOTE:** In some cases, a firmware update requires either a firmware reset or a basic PCIe reset, depending on the features available in the new firmware. A firmware reset is performed automatically if it is needed, regardless of the operating system. In some cases, a full reboot is required to activate new firmware, to enable a new feature, or to take advantage of a resolved issue. In such a case, the application that updated the firmware produces a message indicating what is needed.

See the [New Firmware Features or Resolved Issues That Require a Host Reboot](#) section for a list of new features or resolved issues that require a host reboot after a firmware update.

## Resolved Issues

### Firmware

#### Release 12.8.614.23

LPe31002 links are no longer reset multiple times.

#### Release 12.8.614.17

On a two-port HBA, generating a port-level dump no longer cause both ports to enter error states.

### x86 Boot Code

#### Release 12.8.614.23

No x86 boot code issues were resolved in this release.

#### Release 12.8.614.17

1. The value for FA-PWWN displayed by the Emulex FC BIOS utility now matches the value set in the Emulex HBA Manager application.
2. The system now boots from SAN in x86 boot mode if more than one boot device is mapped.

### UEFI Boot Code (Releases 12.8.614.17 and RT12.8.614.23)

No UEFI boot code issues were resolved in these releases.

## Known Issues

### Hardware and Drivers

On LPe31000-series and LPe32000-series adapters, the system might stop responding when the HBA tries to send commands to the HBA driver. This issue occurs in a system with a large number of LUNs when the driver lags behind the HBA in processing I/Os.

#### Workaround

Limit the number of outstanding I/Os that each LUN can have by changing the LUN queue depth using the `lpfc_lun_queue_depth driver` parameter. For example:  
`lpfc_lun_queue_depth=6`

Alternatively, you can limit the number of outstanding I/Os that each HBA can have by changing the HBA queue depth using the `lpfc_hba_queue_depth driver` parameter:  
`lpfc_hba_queue_depth=64`

**NOTE:** The optimal array configuration is affected by a variety of factors, including the following:

- Number of LUNs configured
- LUN queue depth setting
- HBA queue depth setting
- Response time of the array
- CPU speed

## Firmware

Performing a firmware update using `sysfs` on certain inbox Linux operating systems might cause the misleading message `3199 Firmware write complete: Firmware reset required to instantiate to be displayed`.

The following Linux inbox drivers are affected:

- RHEL 7.7
- RHEL 7.8
- SLES 12 SP5
- SLES 15 SP2

### Workaround

Instead of performing a firmware reset, perform a PCI bus reset to activate newly downloaded firmware. For instructions on issuing a PCI bus reset, refer to the *Emulex Drivers for Linux User Guide*.

## x86 Boot Code

There are no known issues in the x86 boot code.

## UEFI Boot Code

1. Updating the NVMe BFS installation from RHEL 8.1 to a later RHEL 8.x release requires the `rhel8u1_upgrade.sh` script, which ensures that the NVMe BFS setup is maintained through the update process.

The `rhel8u1_upgrade.sh` script is packaged in the `nvme-fc-dm--1.rhel8.tar.gz` kit inside the `elx-nvme-fc-dm-<build>-n.tar.gz` preinstallation kit. For more information about the preinstallation kit, refer to the *Emulex Boot for the Fibre Channel and NVMe over FC Protocols User Guide*.

Before you run the script, you must configure the `yum` repository for the new operating system. You can update the operating system at any time after you have run the script.

2. When configured for NVMe boot support, the Emulex UEFI driver does not understand the various levels of Asymmetric Namespace Access (ANA), also called I/O multipathing. It assumes that all boot devices are fully accessible and active. If a boot device that is in an ANA unoptimized or inaccessible state is configured, or if the boot device transitions to such a state over time, the UEFI boot environment might significantly slow or stop its boot sequence. Messages such as `Option ROM POST Error: 2110... Controller I/O timeout failure...` might appear.

### Workaround

When you configure UEFI boot devices with storage that supports NVMe ANA, attempt to have optimized paths configured ahead of nonoptimized or inaccessible device paths. If the storage array state changes for boot devices, reconfigure the boot device list to order optimized paths ahead of nonoptimized or inaccessible storage. For further information, search for Knowledge Base article #1211251400308 on the Broadcom website at the following URL:

[www.broadcom.com/support/knowledgebase](http://www.broadcom.com/support/knowledgebase)

## New Firmware Features or Resolved Issues That Require a Host Reboot

This section lists the new firmware features or resolved issues that require a host reboot to be activated after they are installed through a firmware update.

### Firmware Release 12.8.614.23

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.614.17

The flash part manufacturer has been added to the firmware dump output.

### Firmware Release 12.8.542.37

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.542.32

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.542.26

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.351.47

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.351.43

Support was added for new flash devices.

### Firmware Release 12.8.351.32

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.8.340.8

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.6.240.42

No firmware features in this release require a host reboot after a firmware update.

### Firmware Release 12.6.240.40

No firmware features in this release require a host reboot after a firmware update.

## Firmware Release 12.6.240.22

No firmware features in this release require a host reboot after a firmware update.

## Technical Tips

1. Some LPe31000-series and LPe32000-series adapters were shipped without the shunt that allows you to enable the secure firmware jumper.

### Workaround

Refer to the section on setting the secure firmware jumper in the *Emulex Fibre Channel Host Bus Adapters Installation Guide* for instructions.

To obtain a replacement shunt, contact an authorized Broadcom Technical Support representative, as described in [Purpose and Contact Information](#).

2. When you add an initiator NVMe qualified name (NQN) to attach an Emulex adapter to an NVMe array, the adapter will not connect to the array if you use any uppercase letters.

### Workaround

Use only lowercase letters when adding an initiator NQN to attach an Emulex adapter to an NVMe array.

3. Locked optics are not supported on Broadcom 16Gb/s transceivers with serial numbers prior to SN:x@1319xxxxx. The serial number (SN:) is located above the barcode on the Broadcom manufacturer's label that is affixed to the transceiver.

4. If a firmware update requires a system reboot, you cannot perform a firmware dump until the reboot has occurred.

### Workaround

None.

5. Using the Brocade® `portdporttest` command with the `stop` option causes the HBA to stop responding when running D\_Port tests from the switch. Disabling a port while running D\_Port tests from the switch can cause the switch port to get stuck in D\_Port mode.

### Workaround

Do not stop D\_Port tests while they are running from the switch. Do not disable a port while D\_Port tests are running from the switch.

If the HBA stops responding, remove the D\_Port configuration from the switch port by issuing the following commands. Refer to the Brocade switch documentation for more information.

```
portdisable <portnumber>
portcfgdport --disable <portnumber>
portenable <portnumber>
```

If the switch port is stuck in D\_Port mode, use the `portdporttest --exit` command to clear the configuration.

6. The Emulex UEFI configuration utility does not immediately display the adapter's default values after they have been set.

### Workaround

Reset or reconnect the adapter. The Emulex UEFI configuration utility displays the new values.

7. After logging in to the switch, connected adapter ports appear as G\_Ports until you log in to the fabric.

### Workaround

None.

8. The adapter firmware notifies the Cisco switch that the transceiver optical test is not supported when the reflector loopback capabilities are queried. Cisco HBA Link Diagnostics (Cisco MDS Tests) are not supported when the `Xcvr-optical` parameter is not supported.

#### Workaround

Replace the adapter's SFP with a supported SFP.

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