

# Emulex<sup>®</sup> NVMe over Fibre Channel for Windows

Release

 Windows Server 2016 and Windows Server 2012:
 12.0.257.9

 Windows Server 2019:
 12.0.298.0

## **Purpose and Contact Information**

These release notes describe the interoperability matrix, new features, resolved issues, and current known issues associated with the Emulex<sup>®</sup> NVMe over FC initiator drivers for the Windows Server 2019, Windows Server 2016, and Windows Server 2012 operating systems on the LPe31000-series, LPe32000-series, and LPe35000-series HBAs.

For the latest product documentation, go to www.broadcom.com. If you have questions or require additional information, contact an authorized Broadcom<sup>®</sup> Technical Support representative at ecd-tech.support@broadcom.com.

# **NVMe over FC Interoperability Matrix**

You can build NVMe over FC end-to-end solutions with initiators from SUSE servers or Windows servers, with a Linux target "just a bunch of flash" (JBOF) based on SUSE. This capability enables you to build low-cost, high-performance NVMe over FC storage systems. The following table provides the required initiator and target pairs across the supported out-of-box Emulex NVMe over FC drivers.

If You Are Using This Initiator Driver	Use This Target Driver
Version 12.0.298.0 for Windows Server 2019 or version	Version 12.0.261.26 or later for SLES 12 SP3 or the inbox driver for
12.0.257.9 for Windows Server 2016 or Windows Server 2012	SLES 12 SP4 GA

**NOTE:** Install firmware version 12.0.261.15 or later for LPe31000-series and LPe32000-series HBAs, or 12.0.261.17 or later for LPe35000-series HBAs, to ensure interoperability and to include the latest standards and performance updates.

## **New Features**

- Adds support for LPe35000-series adapters.
- Adds support for the Windows Server 2019 operating system.

NOTE: Do not use a driver earlier than the drivers documented in these release notes with LPe35000-series adapters.

## **Resolved Issues**

An issue in which the Windows NVMe driver might reject a process login (PRLI) was resolved.

# **Known Issues**

1. I/O might fail if the maximum data transfer size (MDTS) of the target NVMe subsystem is smaller than the maximum transfer size of the Windows driver. By default, the maximum transfer size of the Windows driver is set to 512 KB.

## Workaround

Change the Windows LimTransferSize driver parameter to be smaller than or equal to the MDTS of the target NVMe subsystem. The following values apply to this parameter:

- 0 = Use the size of the Windows ExtTransferSize driver parameter
- 1 = 64 KB
- 2 = 128 KB
- 3 = 256 KB

The default setting is 0.

You must reboot the computer after changing the value.

Refer to the *Emulex Drivers for Windows for LightPulse Adapters User Guide* for more information about the Windows driver parameters.

- 2. The OneCommand<sup>®</sup> Manager GUI does not currently support NVMe management, except to modify the NVMe-specific driver parameters described in Section 4.1 of the *Emulex NVMe over Fibre Channel User Guide*.
- 3. The OneCommand Manager CLI does not provide remote support for NVMe commands. The NVMe-specific commands described in Section 4.2.2 of the *Emulex NVMe over Fibre Channel User Guide* can only be issued locally from Windows initiators.
- 4. If the configuration on a Linux NVMe target is changed, the Windows NVMe initiator does not discover the changes.

#### Workaround

Disable and reenable each target port at the switch. These actions allow the switch to discover the changes.

- 5. The OneCommand Manager nvme-get-feature CLI command does not retrieve the following features from a SLES 12 SP3 NVMe target:
  - Arbitration (0x1)
  - Power management (0x2)
  - Temperature threshold (0x4)
  - Write atomicity normal (0xA)
  - Asynchronous event configuration (0xB)
  - Host identifier (0x81)
  - Reservation notification mask (0x82)
  - Reservation persistence (0x83)

### Workaround

None.

- 6. OneCommand Manager CLI commands do not support vPort WWPNs for NVMe over FC.
- 7. When configuring the NVMe target system, you can determine the NVMe qualified name (NQN) of the initiator ports by using the following formula:

nqn.2017-01.com.broadcom:ecd:nvmf:fc:<factory WWPN>[:vport WWPN]

#### **NOTE:** Do not include colons when specifying the WWPNs.

8. Windows cluster shared volumes are not supported by the Linux target.

Broadcom, the pulse logo, Connecting everything, Avago Technologies, Avago, the A logo, Emulex, LightPulse, and OneCommand are among the trademarks of Broadcom and/or its affiliates in the United States, certain other countries, and/ or the EU.

Copyright © 2017–2018 Broadcom. All Rights Reserved.

The term "Broadcom" refers to Broadcom Inc. and/or its subsidiaries. For more information, please visit www.broadcom.com.

Broadcom reserves the right to make changes without further notice to any products or data herein to improve reliability, function, or design. Information furnished by Broadcom is believed to be accurate and reliable. However, Broadcom does not assume any liability arising out of the application or use of this information, nor the application or use of any product or circuit described herein, neither does it convey any license under its patent rights nor the rights of others.

