Emulex® Drivers for VMware ESXi

Release

ESXi 6.5		12.8.317.0
ESXi 6.7		12.8.317.0
ESXi 7.0		12.8.340.12

Purpose and Contact Information

These release notes describe the new features, resolved issues, known issues, and technical tips associated with these Emulex® drivers for VMware releases.

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

New Features (Version 12.8.340.12)

There are no new features in this release.

New Features (Versions 12.8.317.0 and 12.8.329.0)

1. Added support for the VMware ESXi 7.0 U1 operating system.

2. Added support for loop topology on LPe35000-series adapters.

3. The default LUN queue depth value in the Emulex drivers for VMware has changed from 30 to 64 outstanding I/Os per LUN.

   You can override the default value using the `lpfc_lun_queue_depth` driver parameter. Refer to your storage array documentation or support contact for the recommended LUN queue depth settings for your array.

4. Deprecated `esxcli elxmgmt` commands that do not comply with VMware CLI formatting.

5. Added the following `esxcli elxmgmt` commands for WWN management and diagnostics:
   – `wwn change`
   – `wwn getcap`
   – `wwn read`
   – `wwn restore`
   – `hbaport pcidata`
   – `hbaport vpd get`

6. Added NVMe over FC support for Brocade® and Cisco VMID on LPe31000-series, LPe32000-series, and LPe35000-series adapters.

7. NVMe over FC is enabled by default on LPe31000-series and LPe32000-series adapters.

8. NVMe over FC support on ESXi 7.0 earlier documented as a stand-alone user guide is now included in the *Emulex Drivers for VMware ESXi User Guide*.

9. BFS on NVMe over FC is supported on the ESXi 7.0 U1 operating system.

10. Added support for setting NVMe over FC boot parameters in the existing `bootparams set` esxcli management command.

NOTE: The Emulex OneCommand® Manager application has been renamed as the Emulex HBA Manager application.

NOTE: The esxcli plug-in (also called the esxcli diagnostic tool) is frozen at the release 12.6 level. No new functionality will be added to the plug-in.

Resolved Issues (Version 12.8.340.12)

1. Rebooting ESXi 7.0 targets with LPe31000-series, LPe32000-series, or LPe35000-series adapters no longer result in an unrecoverable operating system fault.

Resolved Issues (Versions 12.8.317.0 and 12.8.329.0)

1. The trunking speed is no longer incorrectly displayed as 0 when you execute the `esxcli storage san fc list` command.

2. A timing issue might cause some controllers to disappear from the controller list after the NVMe driver has been unloaded and then reloaded.

3. The issue of `authconfig lst` esxcli management command displaying the entity list even after running the `authconfig delete` command is fixed.

4. The issue of `initiateauth` command incorrectly returning an error message when DH-CHAP is disabled on the switch is fixed.

5. LPe31000-series, LPe32000-series, or LPe35000-series adapters, when connected to an NVMe-only target, no longer result in an unrecoverable operating system fault, if the target is rebooted while the initiator is waiting for a command response from the target.

FC Driver Known Issues

1. The adapter model name and description do not match the vendor brand name field.

    The VMware vSphere client shows only the adapter family model names with a single port.

    For example:

    An LPe31000-series or LPe32000-series adapter is shown as the `Emulex LightPulse LPe32000 PCIe Fibre Channel Adapter`.

    An LPe35000-series adapter is shown as the `Emulex LightPulse LPe36000 Fibre Channel Adapter`.

    This issue occurs with the `lspci` native tool as well. The vSphere client gets the adapter model name and description from the XML package files installed with the operating system or with an out-of-box kit, rather than from the adapter vital product data (VPD). Other native tools work in a similar manner.

Workaround

To show all available Key Value (KV) instances, use the following command:

`/usr/lib/vmware/vmkmgmt_keyval/vmkmgmt_keyval -d`

For storage adapters, look for `vmhbaX/Emulex`.

2. Revision A of the FOIT AFCT-57F3TMZ-ELX (16GFC longwave optic transceiver) does not support D_Port (also called ClearLink®) for Brocade switches and MDS Diagnostic for Cisco switches.

   Workaround

   None.

3. Neither Revision A nor Revision B of the FOIT AFCT-57F3TMZ-ELX (16GFC longwave optic transceiver) or AFCT-57G5MZ-ELX (32GFC longwave optic transceiver) supports D_Port for Brocade switches.

   Workaround

   None.

4. Some inbox drivers do not support LPe35000-series adapters, as described in the following table.

Table 1: Operating System and Support for LPe35000-Series Adapters

Operating System	Support for LPe35000-Series Adapters
ESXi 6.5	No; use the latest I/O Vendor Partner (IOVP) certified driver.
ESXi 6.7	No; use the latest IOVP certified driver.
ESXi 7.0	Yes

   Workaround

   Follow the guidelines in Table 1.

5. Brocade switches that use Fabric OS® version 8.2.1B and earlier might encounter the following issues with DH-CHAP authentication:

   – You might not be able to configure the secret pair between the switch and the HBA. When authentication is enabled on the switch, and authentication is disabled on the HBA, the switch disables the port, but it does not issue the expected status messages.

   – The Brocade switch authenticates the HBA port when authentication is disabled on the switch or when a frame is dropped.

   Workaround

   None.

6. Dependency errors might occur when you use the `esxcli` command to upgrade from the release 12.2 `elxmgmt` VIB to the release 12.6 or later `elxmgmt` VIB.

   Workaround

   Remove the existing release 12.2 VIB, and install the release 12.6 or later VIB.

7. A delay in processing ELS commands might be observed if the `enable_mds_diags` module parameter is enabled.

   Workaround

   Disable `enable_mds_diags`. This parameter must be enabled only when attempting a Cisco MDS diagnostic test.

8. Upgrading from ESXi 6.7 with the latest 6.7 asynchronous `lpfc` driver installed will result in ESXi 7.0 retaining the 6.7 driver. Although the ESXi 6.7 driver will work in ESXi 7.0, it does not contain complete ESXi 7.0 feature capability.

    Workaround

    For instructions on updating to the ESXi 7.0 driver, refer to the VMware Knowledge Base article that discusses updating from older versions of the operating system to newer versions.

9. Issuing an `authconfig remove` esxcli management command with option `-e all` to delete the entire authentication configuration might interrupt elxmgmt performance.

    Workaround

    Individually remove authentication configuration for each entity pair.

10. The `bootparams set` command, in Table 11: esxcli Management Commands, in the *Emulex Drivers for VMware ESXi User Guide*, is missing the following information on NVMe Boot Device Parameters:

    NVMe Boot Device Parameters

    – NamespaceID

    EFI

    {Value [BootDev Value2]}

    – NVMeWWPN

    EFI

    {Value [BootDev Value2]}

    – NVMeWWNN

    EFI

    {Value [BootDev Value2]}

    – SubNQN

    EFI

    {Value [BootDev Value2]}

11. On ESXi 7.0 hosts with LPe31000-series, LPe32000-series, or LPe35000-series adapters even when NVMe devices are down, the NVMe controller list incorrectly continues to display the NVMe devices.

    Workaround

    Perform the following steps to manually disconnect NVMe devices:

    a. Make a note of the adapter and controller number of the NVMe devices that are down, using the following command:
    ```
    esxcli nvme controller list
    ```
    b. Disconnect the NVMe devices that are down, using the following command:
    ```
    esxcli nvme fabrics disconnect  --adapter=vmhba<number> --controller-number=<controller number>
    ```
    For example:
    ```
    esxcli nvme fabrics disconnect  --adapter=vmhba67 --controller-number=340
    ```
    Where `67` is the adapter number and `340` is the controller number.

FC Driver Technical Tips

1. When the Virtual Machine Identifier (VMID) feature is used in an ESXi environment with ESXi mobility (vMotion), the VMID strings might not be available from the operating system on the backup server (the server to which vMotion moved) for 10 to 20 minutes. During this time, the VMID strings are not available for registration on the fabric switch.

   Workaround

   After the vMotion action, wait until the operating system settles and the VMID strings are available.

2. ESXi servers can appear to have the same VMID Application ID. The VMID is the combination of the Application ID appended to the end of the N_Port ID, which provides uniqueness within the fabric.

3. To view VMID information on all VMs in a multipathing configuration, set the path policy to `Round Robin`.

4. The server must be in ESXi maintenance mode to safely change the firmware in flash memory.

   For operations, such as firmware download, bring the server into ESXi maintenance mode prior to flashing the firmware.

5. Dynamic D_Port is enabled by default and cannot be simultaneously enabled with FA-PWWN or DH-CHAP.

   Workaround

   Disable Dynamic D_Port before enabling FA-PWWN or DH-CHAP using the Emulex HBA Manager application. You can disable DH-CHAP using the `lpfc_enable_auth` parameter.

6. When the `authconfig delete` esxcli management command is issued, a message similar to the following might be displayed.
   ```
   A driver reload is required to activate changes before re-enabling authentication.
   ```
   Workaround

   Ignore the driver reload message; the changes are effective immediately.