

Emulex[®] Drivers for VMware ESXi

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| Release | ESXi 6.5 | 12.8.317.0 |
| | ESXi 6.7 | 12.8.351.29 |
| | ESXi 7.0 | 12.8.534.0 |
| | ESXi 7.0 NVMe | 12.8.534.0 |

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 12.8.534.0)

- The VVols adaptive queue depth for a protocol endpoint is by default set to 254.
- A change was made to support performance optimization.

New Features (Versions 12.8.317.0/12.8.351.29/12.8.351.30/12.8.351.28)

- Added support for the VMware ESXi 7.0 U2 operating system.
- Added support for LPe36000 and LPe36002 64Gb/s HBAs (ESXi 7.0 and later only).
- Added support for large vVOLS.

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 12.8.534.0)

- The VMware driver now responds to Process Logins (PRLIs) from other initiators.
- The ESXi 7.0 host can now login to any target using the NVMe over FC driver.
- Issuing an `authconfig remove esxcli` management command with option `-e all` to delete the entire authentication configuration no longer interrupts `elxmgmt` performance.

Resolved Issues (Versions 12.8.317.0/12.8.351.29/12.8.351.30/12.8.351.28)

After NVMe over FC is enabled by setting the `lpfc_enable_fc4_type` parameter to 3, Emulex HBAs are now identified by the ESXi 7.0 operating system.

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:

LPe32002 adapter is shown as the Emulex LightPulse LPe32000 PCIe Fibre Channel Adapter.

LPe36004 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 or LPe36000-series adapters, as described in the following table.

Table 1: Operating System and Support for LPe35000-Series or LPe36000-series Adapters

| Operating System | Support for LPe35000-Series or LPe36000-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 Diffie-Hellman Challenge Handshake Authentication Protocol (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, LPe35000-series, or LPe36000-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.

12. ESXi 6.7 does not support 64Gb/s HBAs.

Workaround

None.

13. On the VMware ESXi 7.0 U1 operating system, if you attempt to boot from SAN using an LPe36000-series HBA, you cannot update the driver or change driver parameters.

Workaround

Update to the VMware ESXi 7.0 U2 operating system.

NVMe over FC Driver Known Issues

The `localcli nvme info get` and `esxcli nvme info get` commands do not return a hostNQN.

Workaround

Provide a unique qualified hostname for the ESXi host. Reboot the system for changes to take effect.

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 Fabric Assigned Port World Wide Name (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.

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