

Lenovo System x Firmware and Boot Code Release Notes for Emulex OCe14000-series Adapters

Version: 10.4.303.14

Date: June 2015

Purpose and Contact Information

These release notes describe the new features, resolved known issues, current known issues, and technical tips associated with this firmware and boot code release for the Emulex OneConnect® OCe14000-series adapters.

Note: Firmware version 10.4 is not supported on Lenovo Bladecenter or Flex systems.

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New Features

1. Adds support for quantized congestion notification (QCN) on RoCE.
2. Adds support for iSCSI Extensions for RDMA (iSER) initiator in Linux.
3. Adds support for mixed and concurrent mode storage. Refer to the documentation on the Emulex website for more information.
4. Added support for Lenovo-branded versions of formerly-IBM-branded products.
5. Added support for Lenovo xClarity for inventory management.

Resolved Issues from Firmware Version 10.3.144.0

Firmware Resolved Issues

1. Corrected an issue where the Ethtool would display port speed as “unknown” when multichannel was enabled and UFP mode was selected.
2. Made changes to enhance performance.
3. Improved handling of ASU/UCM-deployed configurations.

NIC UEFI Resolved Issues

1. Corrected an issue where Erase Configuration would not properly reset the multichannel setting.
2. Corrected an issue on two-port adapters when you had selected the NIC - ETS Disabled setting for NIC Mode and then disabled SR-IOV, NIC Mode would remain set to NIC - ETS Disabled and SR-IOV would not be disabled after a system reboot.

3. Corrected an issue where custom personality commands were not accepted through ASU.

PXE BootBIOS Resolved Issues

1. Corrected an issue on Lenovo System x systems that are UEFI 2.1 compliant where changes to any settings configured using the Emulex PXESelect utility were not persistent across reboots.

Known Issues

Firmware Known Issues

1. The following notes apply to updating firmware for this release:

WARNING: Once an adapter has been flashed to firmware version 10.2.261.36 or later, do not attempt to flash down to an older version without first contacting Lenovo System x support. Lenovo System x support will provide a special required downgrade flash procedure. If this procedure is not followed, there is risk in making the adapter permanently unusable.

- If the adapter in use is currently running firmware 10.0.803.2202 or earlier and iBFT functionality is required, special steps must be followed when upgrading to this release. The recommended flash method is to use the Emulex OneConnect Offline Flash ISO, which will allow flashing in a single step.
- To upgrade and enable iBFT functionality with online tools, the most recent version of NIC driver, OneCommand Manager, and Emulex CIM provider must first be installed. Additionally, the firmware must be flashed twice with a reboot after each flash.

Some online flash utilities, such as the OneCommand Manager application, may instruct you to reboot and flash the firmware a second time. If iBFT functionality is not required, this message can be safely ignored. No additional procedures are necessary when iBFT functionality is not required.

Workaround

None.

2. A Feature on Demand licensing issue may cause incorrect personalities to be displayed in the OneCommand Manager application.

Workaround

None.

3. Large receive offload (LRO) functionality is not working properly on the second port of a 2-port adapter.

Workaround

None.

4. Changing personalities may disable a Cisco switch's operator mode for priority flow control (PFC).

Workaround

Perform the following steps:

- a) Check the operator mode by typing

```
show int eth 1/x priority-flow-control
```
- b) If the operator mode is off, for each affected port you must then toggle the priority-flow-control mode to “off” and then back to “auto”.

At the switch:

```
priority-flow-control mode off  
priority-flow-control mode auto
```

5. **The link for vNIC ports may not appear when Universal Fabric Protocol (UFP) multichannel mode is used along with the iSCSI personality.**

Workaround

In the Emulex NIC Configuration utility, select the Erase Configuration option to reset all NIC settings to the factory defaults. Once the reset is completed, reconfigure the NIC settings as desired. The vNIC ports will then link up as expected.

6. **Concurrent mode storage with UFP multichannel mode is not supported in this release for OCe14000-series and OCm14000-series adapters.**

Workaround

None.

7. **Enabling concurrent personality mode through the Lenovo System x utilities may fail on OCe14000-series and OCm14000-series adapters.**

Workaround

If concurrent personality is being used, configure all settings through the UEFI configuration utility, legacy BIOS PXESelect utility, or the OneCommand Manager application.

FCoE UEFI Known Issues

1. **The FCoE ports listed in the “System Settings > Storage” UEFI menu are ordered backwards.**

The lowest PCI function (the first port) should be the first one on the list.

Workaround

None.

iSCSI UEFI Known Issues

1. **An iSCSI login does not display an error when providing invalid target information.**

Workaround

None.

2. **The iSCSI ports listed in the “System Settings > Storage” UEFI menu are ordered backwards.**

The lowest PCI function (the first port) should be the first one on the list.

Workaround

None.

- 3. The system may hang while attempting to save a non-zero boot LUN within the iSCSI UEFI configuration utility.**

Workaround

Use a boot LUN of zero or boot to the legacy iSCSI configuration BIOS and specify the non-zero boot LUN. Once the non-zero boot LUN has been specified once in the legacy BIOS configuration utility, subsequent boots will complete without additional intervention.

PXE BootBIOS Known Issues

- 1. After a firmware upload, the PXESelect utility may experience a delay of up to three minutes while displaying "Rebooting to Apply PCI Function Mapping Changes".**

Workaround

None.

iSCSI BootBIOS Known Issues

- 1. IPv6 formatting does not following RFC standards, which results in invalid IP address error message and a pop-up dialog box requesting that you re-enter the IP address.**

Workaround

None.

- 2. Changing the target's digest parameters may cause the boot LUN to revert to LUN 0.**

Workaround

None. You must re-select the appropriate boot LUN.

- 3. Discovery login CHAP authentication must be provided multiple times – once during discovery, once during log in, and when the boot flag is enabled.**

Workaround

None.

- 4. iSCSISelect utility may attempt to connect to target even when "connect" option is not selected in iSCSI UEFI utility.**

Workaround

None.

- 5. Adapter failover using multipath I/O (MPIO) with iSCSI boot may not work properly on VMware ESXi 5.0 systems.**

Workaround

None.

6. **When entering the iSCSI BIOS on Windows 2008 x86 SP2 systems, an iSCSI Initiator Name mismatch error message may be displayed.**

The error message states:

“Error: There is an iSCSI Initiator Name mismatch for the OneConnect controllers in this system. Please use the iSCSI Initiator Configuration screen to set a single iSCSI Initiator Name for all controllers in the system.”

Workaround

None.

FCoE x86 BootBIOS Known Issues

1. **The Configure Boot Devices menu only scans for the next 16 LUNs from the starting LUN, which limits the LUNs displayed.**

Workaround

None.

Technical Tips

1. **Under SLES 11, the bond 5 and 6 modes must be configured properly to work with the firmware.**

When configuring the bond mode, change the default setting to include “updelay=100”. For example, the correct setting for bond 6 is `BONDING_MODULE_OPTS='mode=6 miimon=100 updelay=100'`.

2. **For Cisco switches, the access mode must be set in trunk mode, and native VLAN cannot be FCoE VLAN, that is, the FCoE VLAN must be in the allowed list. For example, if VLAN 2 is the FCoE VLAN and VLAN 1 is the Ethernet VLAN, you would enter the following:**

- `Switchport mode trunk`
- `Switchport trunk native vlan 1`
- `Switchport trunk allowed vlan 1-2`

3. **For Brocade switches, trunk mode must be set in converged mode. For example, if VLAN 2 is the FCoE VLAN, you would enter the following:**

- `Switchport mode converged`
- `Switchport converged allowed vlan add 2`

4. **For best performance, disable the Spanning Tree Protocol (STP) on all networked switches if you are using the following:**

- Adapter fault tolerance (AFT)
- Automatic load balancing (ALB)
- Static link aggregation teaming

5. **Only three functions are available on each port when using the Custom personality mode with multichannel disabled.**

The OCe14000-series adapters support the Custom personality mode when multichannel is disabled. The OCe14000-series adapters support NIC, iSCSI, and FCoE protocols on a single port. While the normal NIC, iSCSI, and FCoE personalities support only NIC, NIC+iSCSI, or

NIC+FCOE configuration on both ports, the Custom mode allows support for NIC, iSCSI, and FCoE on both ports.

With multichannel disabled, each port can be configured with one of the following configurations:

- One NIC function
- One NIC function and one iSCSI function
- One NIC function and one FCoE function
- One NIC function, one iSCSI function, and one FCoE function

Notes

- Two of the same storage protocols are not supported on a single port.
- Two NIC functions are not supported on a single port.

Therefore, on a 2-port controller you can potentially have 6 functions, while a 4-port controller can have up to 12 functions. The function-to-port mapping is displayed in the following tables.

Table 1 Function-to-Port Mapping for 4-port OCe14000-series Adapters

Port 0	Port 1	Port 2	Port 3
0	1	2	3
4	5	6	7
8	9	10	11

Table 2 Function-to-Port Mapping for 2-port OCe14000-series Adapters

Port 0	Port 1
0	1
2	3
4	5

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