

# Emulex OCe14000-series Adapters Firmware Release Notes

Version: 11.0.xxx.xxx

Date: April 15, 2016

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## 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® OCe14000-series adapters.

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## New Features

1. **Added support for the following operating systems:**
  - SuSE Linux Enterprise Server (SLES) 12 SOP1.
  - VMware ESXi 6.0 u1.
2. **The following operating systems do not support new features in this release:**
  - Windows Server 2008
  - Windows Server 2008 R2
  - RHEL 5.x
3. **The OCe14000B-series adapters now have a Secure Firmware feature. For more information refer to the *Emulex OCe14000B-series Adapters Installation Guide*.**
4. **The Secure Firmware feature has been modified to allow updates to older, unsecure firmware. For more information refer to the *Emulex OCe14000B-series Adapters Installation Guide*.**
5. **Link Reconfigurable Adapter support is now available allowing you to select 1x40 versus 4x10 for use with the octopus cable.**
6. **You can now set the firmware to factory defaults through the LpCfg utility. Refer to the *Elxflash and LpCfg Management Utilities User Manual* for details.**
7. **Flow Control settings for WOL and Speed are now persistent.**
8. **Complies with IHV firmware specification A01 for NIC.**
9. **ECC correction is now disabled during memory tests.**
10. **You can now scan iSCSI and FCoE targets from the uEFI HII.**
11. **SR-IOV can now be enabled when NPar is enabled.**

12. All of the attributes present in Legacy x86 preboot configuration utilities, such as PXESelect, iSCSISelect and FCoE Configuration utilities, are now present in the HII menus.
13. You can now remove unused ports.
14. You can now filter VF rings using the destination MAC filter to prevent a DOS attack on a receiving switch with pause/PFC enabled.
15. PXE boot is Enabled by default via PXESelect and uEFI HII on Port 1 for the Vindicator and Pavelow cards.

## Resolved Issues

### Firmware

1. The wake on LAN (WoL) and speed settings are now persistent across warm boot and reboot cycles.
2. iDRAC hardware inventory log now displays all of the MAC addresses and WWPNs for OCm14102-U5-D mezz cards running in NPar mode with concurrent mode settings.

### FCoE UEFI

Crash dump logs now generate properly on an FCoE LUN when the target's WWPN is not assigned.

## Known Issues

### Firmware

1. **Firmware version 11.x includes new features that required new flash regions to support them. Firmware versions earlier than 10.0.727.90 did not have the ability to configure the flash regions to support these new features.**

If you are updating from a firmware version earlier than 10.0.727.90, use only Dell-provided firmware update tools that accompany the new firmware to update the firmware to version 11.x. You must perform the firmware update procedure twice to ensure that the flash regions are properly configured, and you must reboot the system after each firmware update.

If you are updating from firmware version 10.0.727.90 or later, use only Dell-provided firmware update tools that accompany the new firmware to update the firmware to version 11.x, and reboot the system after the firmware update. (It is not necessary to perform the firmware update process twice.)

**Note:** After you have updated the firmware, you must not downgrade the firmware to a version earlier than 10.0.727.90.

### Workaround

None.

2. **Reduced throughput may be observed when NPar is enabled on Linux systems.**

**Workaround**

None.

3. **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
```

4. **Minimum bandwidth may not be shared equally by NIC or iSCSI functions when using DCBX with NPar enabled. -**

The NIC or iSCSI functions minimum bandwidths use the NPar configuration settings rather than what is set on the DCBX peer.

**Workaround**

None.

5. **The link speed setting resets to the default setting after a reboot.**

**Workaround**

None.

6. **Despite the fact that OCe14000B-series adapters do not support firmware versions earlier than 10.6, it is possible to install earlier versions of firmware on these adapters by using firmware update applications earlier than 10.6.**

**Workaround**

If you have attempted to install an earlier firmware version, you can correct this situation by updating the firmware to version 10.6 or later.

7. **Updating the firmware from previous versions to version 11.x may fail if you use previous versions of the OneCommand Manager application or Elxflash utility are used to update the firmware.**

**Workaround**

You must update the OneCommand Manager application or Elxflash utility version to 11.0 or later before updating the firmware.

8. **An unrecoverable error may occur when running converged traffic on ports with NParEP mode enabled.**

**Workaround**

None.

- 9. WOL used in a NPAR/NPAREP is limited to the mac address of the first or second partition of a port.**

When flex addressing is enabled, WOL is limited to the mac address of the first partition.

**Workaround**

Use the MAC address as specified.

- 10. When a virtual MAC address is not configured, iDRAC and the PXESelect utility display an adapter's permanent address in the virtual address field instead of all zeroes.**

**Workaround**

None.

- 11. A link is not coming up when the defaults are loaded from HII when the port was previously disabled using the OneCommand Manager application.**

Disabling a port using the OneCommand Manager application brings the link down on the port. However, port disable is not supported in UEFI HII menu options, nor is it supported in PXE Select. The defaults in UEFI HII are loaded through the VFR meaning each menu item or configuration data field has a default value which is loaded by the browser. So it is not possible to issue an IOCTL to bring the link up.

**Workaround**

Disable and re-enable the port using the OneCommand Manager application.

- 12. Back-to-back VPD reads time out on VFs.**

There is a bug in the system BIOS, which is causing VPD reads beyond the region. Along with this, the BIOS is querying for the VPD data multiple times on the same VF. Which results in a large number of interrupts on the VFs. The firmware is unable to process those interrupts within the ISR context, which is causing the VPD data reads to time out.

**Workaround**

biosdevname can be disabled by passing biosdevname=0 as a boot parameter to the kernel command line.

- 13. In a configuration of two Fabrics composed of teamed NICs in an ESX 5.5 environment, the Fabric A ports will flap if both Fabrics are connected.**

Only NIC0 flapped and only when both ports on the on-board NIC were patched in.

**Workaround**

None.

- 14. The number of VFs parameter in lspci is not getting updated or listed properly.**

num\_vfs is not cleared in sriov\_disable().

**Workaround**

This is a fault associated with earlier versions of the SLES operating system (SLES 11 SP4). Update to a later version of the operating system.

- 15. On OCm14102-U2-D 2-port adapters in systems running SLES 12, an iSCSI boot from SAN crash causes the system to stop responding without the dump files being generated in `/var/crash`.**

**Workaround**

Increase the kernel kdump memory to 512 MB.

- 16. If SR-IOV and nPAR are both enabled, a firmware downgrade to version 10.6 will not be successful. Version 10.6 does not support the concurrent use of SR-IOV and /nPAR. (BZ**

**Workaround**

Disable either SR-IOV or nPAR and attempt the firmware downgrade again.

## General Boot Known Issues

The *Boot Version 11.0 for NIC, iSCSI, FCoE, and RoCE Protocols User Manual* documents the iSCSI boot firmware table (iBFT) feature. This feature is not supported in this release.

**Workaround**

None.

## NIC UEFI Known Issues

- 1. Make sure that the staged CEM or any remote utility configuration settings use 100% of the available bandwidth.**

- When minimum bandwidth per partition is configured through Staged CEM, the total bandwidth for all active partitions cannot exceed 100%. However, values less than 100% are allowed while reconfiguring the bandwidth settings.
- When the personality is changed on a partition (example: Enabling or disabling NIC Mode, iSCSI Offload Mode, or FCoE Mode) the minimum bandwidth on that partition resets to 0. It is the responsibility of the user to reconfigure the minimum bandwidth so that the sum total on all enabled partitions equals 100.
- Configure the minimum bandwidth at the end of the script, after changes to the Virtualization Mode and personality on all the partitions.

**Workaround**

None.

- 2. When all partitions on a port are configured with the default minimum bandwidth (that is, 0%), the total minimum bandwidth on that port is equally distributed among active partitions.**

The converse is also true. When the total minimum bandwidth on a port is equally distributed among all the active partitions (manually or implicitly), the minimum bandwidth on all active partitions is displayed as 0. When the configured values are anything other than the ones defined above, they will be displayed as is and applied to the hardware as is.

**Workaround**

None.

**3. A disabled partition does not appear in the DCIM\_NICView.**

If you disable a partition, you cannot use the `winrm wsman` command to enable it.

**Workaround**

Change `VirtualizationMode` from NPAR to Non-NPAR and then back to NPAR again to re-enable the partition remotely.

**4. The oprom utilities (Legacy\UEFI-HII) may allow you to configure 1G speed on adapters which are in RoCE personality, despite the fact that RoCE isn't supported at 1G speeds.**

**Workaround**

Make sure that any port configured to use the RoCE personality is also configured at a speed of 10G or greater.

**5. The number of VFs set using HII do not match the VF values as shown in `lspci`.**

The number of VF's displayed in the PCI-E configuration space is rounded up to the nearest multiple of 8 over the value provided by the host utilities (i.e. HII, Driver, etc.). You can only configure the number of VF's shown in those utilities.

**Workaround**

none.

## PXE BootBIOS Known Issues

During boot, a system hang may occur if you press the right Ctrl key and P key combination multiple times before the prompt appears to enter the PXESelect utility.

**Note:** This issue occurs only when the right Ctrl key and P key combination are pressed.

**Workaround**

Use the left Ctrl key and P key combination.

## iSCSI BootBIOS Known Issues

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

**Workaround**

None.

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

**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. **When toggling the links, the port link state is not refreshed on the Device Settings menu.**

The port link state is only refreshed when you enter the Device Settings menu, so you must return to the System Setup Main menu and select the Device Settings menu again to view the updated link states.

6. **Out of Box (OOB) Wake on LAN (WoL) is enabled by default with every power cycle. There is no way to change this behavior.**

WoL can be disabled via configuration software. This setting persists across reboots that continue to supply AUX power to the OCe14000-series adapter. A full power cycle of the system or 'warm' boot that results in AUX power disruption to the OCe14000-series adapter results in default behavior being restored.

7. **Due to ASIC limitations, the OCe14000-series adapter can only receive management traffic on one NC-SI channel at a time.**

As part of the integrated Dell Remote Access Controller (iDRAC) shared LOM functionality, the network daughter card (NDC) must support receiving management traffic on multiple NC-SI channels at a time. In the iDRAC mode of shared LOM with failover on all LOMs, iDRAC configures all NC-SI channels to receive management traffic for the purpose of failover. The Emulex rack NDC (rNDC) does not support this functionality at this time.

8. **If the adapter is configured in NPAR mode and the network is DCBX-capable and is advertising bandwidth settings, NPAR bandwidth settings are ignored and DCBX bandwidth settings are applied to the adapter.**

If the adapter is configured in NPAR mode and the network is not DCBX-capable, or if DCBX is disabled on the adapter, NPAR bandwidth settings are applied to the adapter.



9. On Dell D6T93 and F6PCP LAN on motherboard (LOM) systems, changing the personality on any NPar function of a physical port may result in a bandwidth reset across all functions of the remaining physical ports.
10. Firmware version 10.6 supports both OCe14000 and OCe14000B-series adapters.
11. A list of potential DCBX configuration issues is provided below.

**Note:** Refer to the Known Issues section for any exceptions to the issues listed below.

- **Application TLV Configuration Issues**  
OCe14000-series adapters support offloads of the FCoE, iSCSI, and RoCE protocols. When the adapter is in a profile that supports such a protocol offload, the DCBX protocol between the adapter and the peer is expected to negotiate a priority to use for the offloaded protocol. In cases where the peer is not configured to negotiate this correctly, the adapter will fail back and use priority 3 for FCoE, priority 4 for iSCSI, and priority 5 for RoCE by default.
- **ETS TLV (Bandwidth) Configuration Issues**  
OCe14000-series adapters support automatic configuration of bandwidth assignment for FCoE, iSCSI, and RoCE protocols using the DCBX protocol, when the adapter is configured for the corresponding profile. In cases where the DCBX negotiation with the peer is unable to uniquely identify the protocol and assign a bandwidth to it, the adapter will assign a default bandwidth depending on the profile. DCBX negotiations for bandwidth are considered incorrect in the following cases:
  - i) The peer does not assign a priority group (TC) to one of the configured protocols (FCoE, iSCSI, or RoCE).
  - ii) Multiple protocols are being mapped to the same priority group (TC) by the peer.
  - iii) The sum of bandwidth for all priority groups (TCs) from the peer is not equal to 100%.
  - iv) When the number of priority groups supported by peer is less than the number required by the adapter.
- **PFC Configuration Issues**  
OCe14000-series adapters support the use of the PFC for FCoE, iSCSI, and RoCE protocols. This can be automatically configured using the DCBX protocol if the peer is appropriately configured. In cases where DCBX negotiation fails to establish proper PFC operations, the adapter will fail back and force the use of Ethernet Pause for ports running FCoE or RoCE protocols. Use of PFC or Pause is optional for iSCSI.

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