EMULEX

Firmware and Boot Code Release Notes for Emulex OneConnect OCe14000-series Adapters

Version: Firmware Version 10.2.370.19

Date: September 2014

Purpose and Contact Information

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

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New Features

1. **Added support for alternative routing-ID interpretation (ARI).**

2. **Added support for RDMA over Converged Ethernet (RoCE) on Windows systems.**

3. **Added support for iSCSI boot firmware table (iBFT).**

4. **Added support for Red Hat Enterprise Linux (RHEL) version 7.0.**

5. **Added support for concurrent storage (iSCSI and FCoE) on an adapter port.**

6. **Added NIC support for OpenBoot (FCode).**

7. **Added support for the OCe14401 converged network adapter (CNA).**

Resolved Issues from Firmware Version 10.0.803.23

Firmware Resolved Issues

1. **Corrected an issue with the port identification not working properly on OCe14401 adapters.**

2. **Corrected an issue where I/O may have failed if the firmware programmed both Ethernet flow control and priority flow control.**

3. **Corrected an issue with PHY and MAC loopback diagnostics failing on Windows Server 2008 R2 systems.**

PXESelect Utility Resolved Issues

1. **Corrected an issue where attempting to enter the PXESelect utility on an AMD-based system would result in an "Illegal Opcode" message and no access to the PXESelect utility.**

2. **Corrected an issue with the PXESelect banner displaying iSCSI and FCoE functions as NIC functions.**

PXE BootBIOS Resolved Issues

1. **Corrected an issue where enabling UMC when SR-IOV was already enabled did not return a notification message stating that SR-IOV must be disabled.**

Known Issues

Firmware Known Issues

1. **Firmware version 10.2.370.19 includes new features that required new flash regions to support them. Firmware versions earlier than 10.0.803.37 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 10.0.803.37, use one of these methods to update the firmware to 10.2.370.19:

   - Use the ISO flash tool.
   - Use the released 10.2 version of the OneCommand GUI or OneCommand CLI application, OneCommand for VMware vCenter application, CIM Provider utility, or online or offline utilities. 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.
   - Use the NIC configuration utility that is currently installed. After the new firmware is installed, run the new NIC configuration utility.

   Note: Do not use Linux inbox drivers when performing the firmware update.

   Note: After you have updated the firmware, you must not downgrade the firmware to a version earlier than 10.0.803.37.

   If you are updating from firmware version 10.0.803.37 or later, use one of these methods to update the firmware to 10.2.370.19:

   - Use the ISO flash tool.
   - Use the released 10.2 version of the OneCommand GUI or OneCommand CLI application, OneCommand for VMware vCenter application, CIM Provider utility, or online or offline utilities, and reboot the system after the firmware update. (It is not necessary to perform the firmware update process twice.)
   - Use the NIC configuration utility that is currently installed, and reboot the system after the firmware update. After the new firmware is installed, run the new NIC configuration utility.

   Note: Do not use Linux inbox drivers when performing the firmware update.

   Note: After you have updated the firmware, you must not downgrade the firmware to a version earlier than 10.0.803.37.

   Workaround

   None.

2. **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 which results in AUX power disruption to the OCe14000-series adapter results in default behavior being restored.

   Workaround

   None.

3. **Firmware 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. **Hardware loopback is disabled for this release.**

   Workaround

   None.

6. **After installing adapter firmware on some IBM systems and rebooting the system, the server may reboot automatically when attempting to enter a UEFI utility.**

   Workaround

   None.

7. **FCoE link is down when UMC or ARI is enabled and concurrent mode storage is used with a Brocade 8000 switch.**

   Workarounds

   - On the Brocade switch, change to the FCoE-only profile.
   - Use a Cisco switch instead of a Brocade switch.

8. **All functions on the adapter may not be displayed after enabling multichannel.**

   Workaround

   To enable all of the functions, use the Custom setting in Personality and explicitly enable all of the higher order functions (PF8–PF15).

9. **Boot from SAN (BFS) may not work properly on systems using XtremIO targets and arrays.**

   Workaround

   Use VNX targets and arrays, if available.

10. **Port link may go down after updating firmware.**

    Workaround

    Perform a cold boot on the system and the port link should work properly.

11. **Maximum bandwidth settings for NIC functions are ignored when multichannel is enabled.**

    The rate limiting features on Emulex OCe14000-series adapters are designed to provide a guaranteed rate to a given function (as noted in the minimum bandwidth setting in the Emulex management interface). The notion of work conservation applies to this approach; specifically, that any bandwidth left unused by other functions will be awarded to the function, even in excess of the guaranteed minimum. The maximum bandwidth parameter in the Emulex management interface is for a rate cap (that is, a bandwidth value must not be exceeded regardless of the behavior of other functions). The maximum bandwidth parameter was placed in the Emulex management interface for other products; it is not currently available in the OCe14000-series adapters.

    Workaround

    None.

NIC UEFI Known Issues

1. **If iBFT boot is non-functional, and version 10.2.370.19 or later firmware is installed, you must update the firmware to version 10.2.370.19 using the ISO flash image or using a version 10.2 management application or firmware update utility. You must reboot the system after the firmware update.**

   If you updated the firmware from a version earlier than 10.0.803.37, you must perform the update process twice using a version 10.2 management application or firmware update utility. You must reboot the system after each firmware update.

   Workaround

   None.

2. **VLAN ID, VLAN mode, or VLAN priority cannot be configured when multichannel mode is disabled.**

   Workaround

   None.

3. **On two-port adapters, if you have selected the NIC - ETS Disabled setting for NIC Mode and then disable SR-IOV, NIC Mode will remain set to NIC - ETS Disabled and SR-IOV will not be disabled after a system reboot.**

   Workaround

   You must set NIC Mode to the NIC Only Profile setting on all ports before disabling SR-IOV.

iSCSI UEFI Known Issues

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

   Workaround

   None.

2. **iSCSI target may not get discovered when using mutual CHAP target secrets set to the maximum 16 characters.**

   Workaround

   Ensure that your mutual CHAP target secret is less than 16 characters.

3. **Discovery login may not work properly for iSCSI target when using mutual CHAP authentication.**

   Workaround

   In certain instances, swapping the initiator CHAP name and secret values and the target CHAP name and secret values has allowed the target to be discovered.

4. **iSCSI initiator name may be restored to the default setting after rebooting on IBM x3550 X4 systems.**

   Workaround

   None.

5. **Dell PowerEdge R720 systems may appear to hang when configuring the adapter in the NIC UEFI utility because pop-up messages are not supported on this specific Dell platform.**

   Note: The system is not in a hang state, but it is actually waiting for the <Esc> key to be pressed.

   Workaround

   If the system appears to be locked up and making configuration changes, press the <Esc> key to see if the system responds.

PXESelect Utility Known Issues

1. **If iBFT boot is non-functional, and version 10.2.370.19 or later firmware is installed, you must update the firmware to version 10.2.370.19 using the ISO flash image or using a version 10.2 management application or firmware update utility. You must reboot the system after the firmware update.**

   If you updated the firmware from a version earlier than 10.0.803.37, you must perform the update process twice using a version 10.2 management application or firmware update utility. You must reboot the system after each firmware update.

   Workaround

   None.

2. **The PXE Boot Support attribute on the PXESelect utility's Port Configuration page does not match the Option ROM attribute on the UEFI NIC Configuration page.**

Workaround

None.

PXE BootBIOS Known Issues

1. **PXE BootBIOS screen displays OCe14400-series adapters as "Emulex 10Gb UNDI" during adapter initialization, which is incorrect.**

   Workaround

   None.

2. **PXE VLAN is not supported in multichannel environments.**

   Workaround

   Set the LPVID to the same value as the PXE VLAN.

iSCSISelect Utility Known Issues

1. **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.

2. **Logging into multiple targets, including the boot target, from a single port may cause the boot target to get logged out after reboot.**

   Workaround

   None.

3. **iSCSI boot target is not persistent when it is logged into from two ports on a 4-port adapter.**

   Workaround

   Only log into the iSCSI boot target from a single port.

4. **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.

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

   Workaround

   None.

6. **An initiator IQN set in the iSCSISelect utility may be reset to an IQN previously set in the UEFI utility after a reboot.**

   Workaround

   None.

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

Workaround

None.

8. **A boot target may not be seen immediately after enabling Discover Boot Target via DHCP.**

   Workaround

   Use the iSCSI UEFI utility to configure the boot target.

9. **The iSCSI initiator name may be restored to the default setting after rebooting on IBM x3550 X4 systems.**

   Workaround

   None.

iSCSI BootBIOS Known Issues

1. **When entering the iSCSI BIOS on Windows Server 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.

2. **iSCSI BootBIOS screen displays OCe14401 adapters as "Emulex 10Gb UNDI" during adapter initialization, which is incorrect.**

   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.

2. **FCoE BIOS displays only a single LUN, even though more than one LUN is configured.**

   Workaround

   Check the LUNs using the OneCommand Manager application.

FCoE FCode/OpenBoot Known Issues

1. **Boot from SAN may fail on OCe14401 adapters installed in Oracle systems.**

   Workaround

   None.

2. **Guest operating system may not boot up when a VF is attached to a logical domain (LDOM) when SR-IOV is enabled.**

   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

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