Emulex® Drivers for Windows for OneConnect® Adapters Release Notes

Versions: FCoE Version 11.2.1135.0
NIC Version 11.2.1153.13
iSCSI Version 11.2.1153.23

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Purpose and Contact Information

These release notes describe new features, resolved known issues, current known issues, and technical tips associated with this release of Emulex® drivers for Windows for OneConnect® adapters.

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 ccx-tech.support@broadcom.com or request assistance online at https://oemsupportportal.emulex.com/web2tech/ccx.html.

New Features

- Beginning with software release 11.2, LightPulse® adapters and OneConnect adapters have independent software kits. Before updating earlier drivers and applications to the software in release 11.2, refer to the *Emulex Software Kit Migration User Guide* for special instructions and considerations for using the 11.2 software kits for LightPulse and OneConnect adapters.

Note: In addition to performing a Windows update, ensure the following Knowledge Base (KB) articles are installed for the Microsoft Storport driver.

  - For Fibre Channel over Ethernet (FCoE) support:
    - Install KB2528357 on Windows Server 2008 x64 systems.
    - Install KB2468345 on Windows Server 2008 R2 systems.
  - For Network Interface Controller (NIC) support:
    - Install KB2846340 on Windows Server 2008 x64, Windows Server 2008 R2, and Windows Server 2012 systems.

Resolved Issues

1. **The description of the virtual local area network (VLAN) option in the Advanced Properties is now correct.**

Known Issues

1. **Virtual Machine (VM) virtual network interface card (vNIC) bandwidth management is not supported in this release.**

   Workaround

   None.

2. **Windows Server 2008 and Windows Server 2008 R2 are supported, although new features are not supported on those operating systems.**

   For documentation of features supported on those operating systems, refer to the *Emulex Drivers Version 10.4 for Windows User Manual*, available in the Documentation and Downloads section of the Broadcom website.

3. **Only a maximum of 64 targets can be discovered using the Add Portal option in the iSCSI Target Discovery dialog box.**

   Workaround

   Targets can be added manually or discovered through the Internet Storage Name Service (iSNS).

4. **While Emulex drivers for Windows 8, Windows 8.1, and Windows 10 are supported, they are signed by Emulex only. You must accept the Emulex certificate to install the client kits.**

   Support is provided by Broadcom but not by Microsoft.

   Workaround

   None.

5. **Disabling remote direct memory access (RDMA) using the PowerShell cmdlet `Set-NetOffloadGlobalSetting -NetworkDirect Disabled` is not supported.**

   Issuing the command can result in an inconsistent (RDMA) state; specifically, RDMA is disabled globally at the operating system-level, but it is still enabled at the adapter level.

   Workaround

   If you run the PowerShell cmdlet `Set-NetOffloadGlobalSetting -NetworkDirect Disabled`, use the following command to enable RDMA at the operating system level once again:

   ```
   Set-NetOffloadGlobalSetting -NetworkDirect Enabled
   ```

   You can also use the following PowerShell cmdlets to disable or enable RDMA:

   ```
   Disable-NetAdapterRdma
   Enable-NetAdapterRdma
   ```

6. **For optimal network virtualization using generic routing encapsulation (NVGRE) performance if Universal Multichannel (UMC) is used, enable a Hyper-V virtual switch on only one NIC function per port.**

   Workaround

   None.

7. **On OCe14401 adapters, the number of VMQueues (VMQs) are reduced when migrating the VMs.**

   Workaround

   Refer to Knowledge Base article 3031598 on the Microsoft website for more information.

8. **A possibility exists of multiple Transmission Control Protocol (TCP) retransmissions when Emulex adapters are part of a software bridge.**

   Workaround

   Disable Receive Segment Coalescing (RSC). From the adapter's Advanced Property page, go to Protocol Offloads and set Recv Segment Coalescing (IPv4) and Recv Segment Coalescing (IPv6) to disabled.

9. **Upgrading the NIC driver from an inbox driver might cause a "Reboot is required message" to appear.**

   Workaround

   Ignore the message. The driver was updated, and you can reboot the system at your convenience.

10. **Server Message Block (SMB) Direct failover limitations exist when using 4-port OCe14000-series adapters.**

    When using 4-port OCe14000-series adapters and one port fails, the RDMA connections are taken down as the result of an out-of-resource failure.

    Workaround

    None.

11. **On OCe14000-series adapters, VFs do not appear in VMs if the virtual switch is created before a profile that supports single root input/output virtualization (SR-IOV) is selected.**

    Workaround

    Destroy and re-create the virtual switch. If you set the adapter to the NIC+SRIOV profile and then create the virtual switch, SR-IOV works as intended.

12. **Some switches strip the VLAN tag from the incoming frame with VLAN 0 or VLAN 1 and send the frame out without a VLAN tag and without VLAN priority, which results in dropped frames.**

    If VLAN 0 or VLAN 1 is configured, the driver posts an informational message that warns you of an incorrect configuration; however, the error still occurs.

    Workaround

    When running the NIC +RDMA over Converged Ethernet (RoCE) personality, if priority-based flow control (PFC) is enabled, always configure the interface with a VLAN to ensure that the VLAN ID is greater than 1.

Technical Tips

1. **SR-IOV and Hyper-V**

   Microsoft has designed SR-IOV as an optional feature in the guest operating system. The SR-IOV virtual function is presented as a lightweight Emulex NIC device to the guest operating system that can leverage hardware acceleration features of the network interface. Windows Server 2016, Windows Server 2012, Windows 10, and Windows 8/8.1 Hyper-V support SR-IOV. Supported guest operating systems include the same versions of Windows Server and the 64-bit versions of Windows client.

   The virtual Peripheral Component Interconnect (PCI) function might be added and removed dynamically from the guest operating system without interrupting the network traffic. With this design, Microsoft supports key features, such as Live Migration and snapshots, even with SR-IOV enabled. These features do not depend on the existence of the SR-IOV hardware; they only save the state of the emulated network interface. When the virtual machine is restored, it tries to re-create the SR-IOV virtual NIC, but, if the hardware is not available, it can continue using the emulated NIC seamlessly.

2. **If you are running Windows Server 2012 R2, ensure that you have installed the latest Windows update. Otherwise, if a shutdown is initiated while RoCE traffic is in progress, an operating system error might occur. The computer might freeze and require restarting to make it operational.**

   While the April 2014 update is specifically required to avoid this issue, you should have Windows Update activated on your servers.

3. **RoCE traffic requires a lossless network. During heavy input/output (I/O), PFC traffic might be dropped at the switch.**

   Increase the size of the switch port egress buffers. Consult your switch vendor or refer to the switch documentation.

4. **When using OCe14000-series adapters with active RDMA operations, completion queue errors occur on the server when the client is rebooted. Ignore these errors.**

5. **It is a best practice to update the firmware and driver to the latest supported version for your server and storage platform.**