

Release Notes for Cisco UCS Virtual Interface Card Drivers, Release 3.1

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Introduction

This document contains information on new features, resolved caveats, open caveats, and workarounds for Cisco UCS Virtual Interface Card (VIC) Drivers, Release 3.1 and later. This document also includes the following:

- Updated information after the documentation was originally published.
- Related firmware and BIOS on blade, rack, and modular servers and other Cisco Unified Computing System (UCS) components associated with the release.

The following table shows the online change history for this document.

Revision Date	Description
January 20, 2016	Created release notes for Cisco UCS Software Release 3.1(1e).
September 6, 2016	Updated release notes for UCS Software Release 3.1(2).
April 27, 2017	Updated release notes for UCS Software Release 3.1(3) and ENIC/FNIC driver updates.
June 14, 2017	Updated release notes with CSCvc71862.
July 26, 2017	Updated release notes with native ENIC Version 1.0.6.0. driver updates.

System Requirements

For a complete list of supported hardware and software, see the *Hardware and Software Interoperability Matrix* for this release located at: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

Operating System Support

For complete information about the operating systems that Release 3.1 supports, see the Hardware and Software Interoperability for UCS Manager Servers document for each Release 3.1 release located here: <http://www.cisco.com/c/en/us/support/servers-unified-computing/unified-computing-system/products-technical-reference-list.html>

New Software Features in Release 3.1

Release 3.1(3) adds support for the following:

- Cisco UCS Manager 3.1(3) release now supports VXLAN with Receive Side-Scaling (RSS) stateless offload on VIC adapters 1340, 1380, 1385, 1387, and SIOC on Cisco UCS C3260 for RHEL 7.0, CENTOS 7.0, SLES 12 SP2 and later releases. VXLAN offload is not supported for IPv6.

Release 3.1(2) adds support for the following:

- Cisco UCS Manager 3.1(2) and higher now supports Virtual Volume Support for ESXi.
- Consistent Device Naming (CDN) support has been expanded to include Red Hat Enterprise Linux 6.X and Red Hat Enterprise Linux 7.X.
- Cisco UCS Manager 3.1(2) release now supports VXLAN with Receive Side-Scaling (RSS) stateless offload on VIC adapters 1340, 1380, 1385, 1387, and SIOC on Cisco UCS C3260 for ESXi 6.0 and later releases. VXLAN offload is not supported for IPv6.
- FNIC tunables now has two new options that are available for fiber channel adapter policies for Windows environments. This new feature only works with UCS Manager version 3.1(2) and higher with the FNIC driver (2.4.0.19).
 - IO Retry Timeout — This option adjusts the IO retry timeout after a pending command expires on a network device.
 - LUN Queue Depth — This setting adjusts the initial queue depth for all LUNs on the adapter.

Release 3.1(1e) adds support for the following:

- Cisco UCS VIC 1385 adapter — A dual port UCSC-PCIE-C40Q-03 card for C-series rack servers. With only VIC 1385 installed, there is a 40 GB connection to the CS 6332 Fabric Interconnect (FI) or the UCS 6332-16UP FI.
- Cisco UCS VIC 1387 adapter — A UCSC-MLOM-C40Q-03 card with two 40 GB (DCE or Ethernet) network interfaces for the C-series rack servers. With only the VIC 1387 installed, there is a 40 GB connection to the CS 6332 Fabric Interconnect (FI) or the UCS 6332-16UP FI.
- Adds support for connecting the Cisco UCS VIC 1385 adapter and the Cisco UCS VIC 1387 adapter to the Cisco UCS FI 6248 and 6296.

VIC Driver Updates

ESX ENIC Driver Updates

Native ENIC Version 1.0.6.0

Native ENIC (nenic) driver versions 1.0.X.0 are for ESXi 6.5 and later releases. This driver update addresses the following issues:

- Netqueues were not evenly populated across CPUs with ESX 6.5.
- Unable to configure more than 2 VNICs with a 4096 WQ/RQ buffer size.
- On ESXi 6.5, a native ENIC driver reload with parameters followed by MTU change can lead to a crash.
- When RSS is enabled, the "queues supported" list value in vsish command does not return a value of 1.

Native ENIC Version 1.0.2.0

Native ENIC driver versions 1.0.X.0 are for ESXi 6.5 and later releases.

- This driver update addresses a defect where a virtual machine may lose connectivity when the fabric interconnect is rebooted or upgraded.

ENIC Version 2.3.0.13

ENIC driver versions 2.3.0.X are for ESXi releases before ESXi 6.5.

- This driver update addresses a defect on a net queue enabled network card, where the vmkernel log message was corrected to display only the bdf info of the vmnic and not the incorrect vmnic name. This update applies to ESXi 6.0 and 5.5 updates.

ESX FNIC Driver Updates

FNIC Version 1.6.0.33 and up

- This driver update now supports Virtual Volume Support for ESXi.
- This driver update supports up to ESXi 6.5.
- An abort timeout no longer causes multiple abort retries for ESXi.
- Fixed the issue of slow I/O path fail over in the case of an I/O aborted with FCPIO_TIMEOUT. The Fnic driver did not return the I/O to ESX, causing the ESX mid-layer to retry abort continuously with the same behavior until finally freeing the I/O after some retries resulting in slow I/O path failover.
- Fixed an issue where an "out of order case" occurred when the IO completed which could cause an HBA reset.
- This driver update enhances IO statistics by adding time statistics for IO completions.

Linux ENIC Driver Updates

ENIC Version 2.3.0.39

- VXLAN is supported only on RHEL 7.0, CENTOS 7.0, SLES 12 SP2 and above releases.

ENIC Version 2.3.0.35

- This driver update adds support for RHEL 7.3.
- This driver update contains missing instructions for the Ubuntu driver in the README.

ENIC Version 2.3.0.31

- This driver update adds support for Ubuntu 16.04.2.

Linux FNIC Driver Updates

FNIC Version 1.6.0.31

- This driver update adds support for RHEL 7.3.
- This driver update adds support for SLES 12 SP2.
- This driver enhances IO stats by adding stats for time taken for IO completions.
- Fixed an issue where an "out of order case" occurred when the IO completed which could cause an HBA reset.

Windows Driver Updates

Windows Server 2012 and 2012 R2 FNIC Version 2.4.0.20

- This driver update fixes issues with the driver being able to handle crash dumps.

Windows Server 2012 and 2012 R2 ENIC Version 3.5.0.18

- This driver update addresses a crash that may occur while running RoCE stress tests.

Windows Server 2016 ENIC Version 4.0.0.3

- This driver update addresses a crash that may occur while running RoCE stress tests.

Libfabric and Open MPI

Cisco usNIC support in the Libfabric and Open MPI open source packages is readily available from their community web sites (<http://libfabric.org/> and <http://www.open-mpi.org/>, respectively).

Cisco UCS Manager Release 3.1(3) and later releases no longer include Open MPI binary packages. Future UCS software driver bundles distributed through the usual Cisco software channels may not include binaries for the libfabric packages. Cisco engineers continue to be active, core contributors in both the Libfabric and Open MPI communities, and will actively develop and support users through the usual community or commercial ISV support mechanisms (e.g., IBM Spectrum MPI).

Resolved Caveats

The following table lists the resolved caveats in Release 3.1(2).

Defect ID	Description	First Bundle Affected	Resolved In
CSCuz96855	UCS M71KR cards no longer crashes with the error "E4194871".	2.2(6f)A	3.1(2)B
CSCva30433	Netflow is now supported on UCS VIC 1225 and later adapters with fiber channel VNIC presence.	2.2(7a)C	3.1(2)C

There are no resolved caveats in Release 3.1.

Open Caveats

The following table lists the open caveats in Release 3.1.

Defect ID	Description	Workaround
CSCvc71862	With RHEL 7.3 ISCSI boot and ISCSI initiator configured for static IP address, the second path does not come up after a reboot if the asynchronous ENIC driver is supplied during the RHEL 7.3 ISCSI installation.	Use the RHEL 7.3 Inbox Driver during an OS installation. Both ISCSI paths will come up after reboot. Install the latest enic driver and reboot the server. Use the command <code>multipath -ll</code> to display both paths.
CSCvd79583	Windows FNIC driver version 2.4.0.20 Systems under heavy stress or targets that are slow to respond, result in the following Event IDs on Windows Server 2012 R2 and Windows Server 2016. <ul style="list-style-type: none"> • Event ID 153 for FNIC Driver IO timeouts • Event ID 129 for Storport Driver IO timeouts 	In UCS Manager, modify the Windows Default I/O timeout from 5 seconds to 25 seconds.
CSCvb15143	VMFEX Driver: v171-6.0-1.2.10.1 for ESXi 6.0 U2 and later releases Jumbo frames is not supported on ESXi 6.0 U2 with VMFEX driver version v171-6.0-1.2.10.1. Impacted B-series UCS Releases include 2.2(7), 2.2(8), 3.1(1), and 3.1(2).	There is no available workaround.
CSCvc82843	Driver: Windows 2012 ENIC: 3.5.0.13 Cisco VMFEX "Register filter driver OK" message may be seen upon booting up in the Windows Event Log.	There is no available workaround. This issue does not cause any disruption in functionality or performance.

Defect ID	Description	Workaround
CSCvb77959, CSCvb59635	<p>Drivers:</p> <ul style="list-style-type: none"> • Windows 2012 R2 ENIC: 3.5.0.13 • Windows 2016 ENIC: 4.0.02 <p>Error with event ID 5005 from the ENIC in the event logs may occur on Windows 2012 R2 and Windows 2016.</p>	<p>There is no available workaround. It has been determined that this issue does not cause any disruption in functionality or performance. This issue will not be fixed for the current drivers.</p> <p>A fix for this issue will be made available with the new re-architected driver in a future release.</p>
CSCuu29425	<p>Prior to RHEL 7.0, packets received on the native VLAN were properly processed by the driver and the OS. RHEL 7.0 and 7.1 introduced a regression that does not allow the ENIC driver to properly handle packets received on the native VLAN. These packets are reported by the ENIC driver as received on VLAN 0 and will not be properly processed by the network stack. In particular by software devices such as a bridge. RHEL 7.2 fixes this regression.</p>	<p>Go to https://access.redhat.com/announcements/2058583 to download and apply the RHEL 7.2 upstream patch.</p> <p>You can also click below to apply the following two patches that RedHat applied to RHEL 7.2 to fix the issue.</p> <ul style="list-style-type: none"> • http://lists.openwall.net/netdev/2013/09/10/30 • https://lists.linuxfoundation.org/pipermail/bridge/2015-July/009630.html
CSCuv42027	<p>Cisco UCS VIC 1387 and the VIC 1385 Priority Flow Control (PFC) does not get enabled if PFC mode is on.</p>	<p>Set the switchport priority flow control mode to auto to enable PFC.</p>
CSCuw10248	<p>When using the Cisco UCS VIC 1387 adapter, the iSCSI functionality does not work if you enable NetFlow, usNIC, VM-FEX, VMQ or iSCSI when VXLAN is enabled on the vNIC, and you attempt to use the VXLAN functionality.</p>	<p>Do not use stateless offloads with VXLAN with NetFlow, usNIC, VM-FEX, VMQ, and iSCSI.</p>
CSCuw75647	<p>The Cisco UCS VIC 1387 adapter allows you to enable the VXLAN offload on any vNIC, and enable VMQ simultaneously.</p>	<p>Do not use stateless offloads with VXLAN with NetFlow, usNIC, VM-FEX, VMQ, and iSCSI.</p>

Defect ID	Description	Workaround
CSCuj20256	Cisco - OEM - USER_MODE_HEALTH_MONITOR (0x9e) BSOD with Ethernet and FC traffic on VMs.	<p>Go to http://support.microsoft.com/kb/2884846 and Install the Windows 2012 R2 Rollup Update.</p> <p>Adjust the following values after the update is completed:</p> <ul style="list-style-type: none"> • ClusSvcHangTimeout—Controls how long to wait before determining that the Cluster Service stopped responding. The default value is 60 seconds. • To change the setting, issue the cluster /cluster:clustername /prop ClusSvcHangTimeout=x command * where x is in seconds <<-- default is 60 seconds increase it as needed. • HangRecoveryActionControls Controls the action to take if the user-mode processes stopped responding. HangRecoveryAction has four settings and designates 3 as the default: <ul style="list-style-type: none"> • 0 = Disables the heartbeat and the monitoring mechanism. • 1 = Logs an event in the system log of the Event Viewer. • 2 = Terminates the Cluster Service. • 3 = Causes a Stop error (Bugcheck) on the cluster node. <<-- default. • To change the setting, issue the cluster /cluster:clustername /prop HangRecoveryAction=x * command where x is the action to take. Set it to 1 to create an event log and for the system to continue working without BSOD.

Known Limitations and Behavior

Linux ENIC Driver Known Issue

For Linux ENIC driver versions 2.3.0.39 and higher, there is difference between the displayed interface names in the host when the `ifconfig -a` command is issued and when the `cat /proc/interrupts` is used.

VXLAN Stateless Offloads

VXLAN stateless hardware offloads are not supported with Guest OS TCP traffic over IPv6 on UCS VIC 13XX adapters. To run VXLAN encapsulated TCP traffic over IPV6, disable the VXLAN stateless offloads feature.

- To disable the VXLAN stateless offload feature in UCS Manager, disable "Virtual Extensible LAN" field in the Ethernet Adapter Policy.
- To disable the VXLAN stateless offload feature in the CIMC of a Cisco C-Series UCS server, uncheck the "Enable VXLAN" field in the Ethernet Interface pane vNIC properties area.

Related Cisco UCS Documentation

Documentation Roadmaps

For a complete list of all B-Series documentation, see the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: <http://www.cisco.com/go/unifiedcomputing/b-series-doc>.

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: <http://www.cisco.com/go/unifiedcomputing/c-series-doc>.

For information on supported firmware versions and supported UCS Manager versions for the rack servers that are integrated with the UCS Manager for management, refer to [Release Bundle Contents for Cisco UCS Software](#).

Other Documentation Resources

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