Release Notes for Cisco UCS Virtual Interface Card Drivers, Release 6.0

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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 6.0 and later releases. 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
March 2026	Initial release of VIC drivers for Cisco UCS Software Release 6.0(2b)
September 2025	Initial release of VIC drivers for Cisco UCS Software Release 6.0(1b)

New Software in Release 6.0

New Software Features in Release 6.0(2b)

Release 6.0(2) adds support for the following:

- MTU 9158 support per vNIC is added in Cisco IMC, Cisco Intersight and Cisco UCS Manager.

  This enhancement enables jumbo frame support for advanced networking and storage use cases on Cisco UCS 15000 VIC adapters,

- NFS over RDMA (NFSoRDMA) enhances storage performance by allowing clients to directly access server memory, bypassing TCP/IP overhead to significantly increase throughput and reduce latency.

  This feature is supported on Linux RHEL10.1 and RHEL 9.7.

  This feature is supported on Cisco UCS VIC 15xxx series adapters.

New Software Features in Release 6.0(1b)

Release 6.0(1) adds support for the following:

- IPv6 iSCSI UEFI boot support using Internet Protocol version 6 (IPv6) for Cisco UCS servers, enabling seamless integration into IPv6-capable IP networks. This addresses IPv4 limitations and offers improved scalability and management for next-generation infrastructure deployments
- NDIS Poll Mode feature support for Windows - Cisco UCS VIC driver supports NDIS Poll Mode feature on Windows Server 2025 onwards. The feature enables the Operating System (OS) to schedule the process of servicing incoming and outgoing traffic, rather than having the driver itself makes the scheduling.

  Further, the OS executes the driver's processing service at a lowered execution level, which makes the system more responsive to external events.

  The feature is enabled by default on Windows Server 2025 and is supported by Cisco UCS VIC 15000 Series adapters.



Note For more information on NDIS Poll Mode with Windows Driver, see Microsoft > Windows Driver > Network documentation.

Also, see the section **NDIS Poll Mode support for Windows** in Cisco UCS Manager VIC Configuration Guide.

- Multi TX Queues with RSS - This configuration enables Receive Side Scaling (RSS) and multiple transmit (Tx) and receive (Rx) queues for improved network performance in VMware ESXi 8.0 U3 and later versions, using Ethernet Adapter Policy in Cisco UCS Manager.

  This configuration is supported in eNIC driver 2.0.17.0 for Cisco UCS VIC 1400, 14000, and 15000 series adapters.

  For more information, see the section **Configuring an Ethernet Adapter Policy to Support RSS and Multiple Transmit Queues on VMware ESXi** in Cisco UCS Manager Network Management Guide.

VIC Driver Updates for Release 6.0

VIC Driver Updates for Release 6.0.2



Note VIC drivers for all operating systems listed in the HCL are cryptographically signed by Cisco.

ESX ENIC Driver Updates

ESX NENIC Version 2.0.17.0

NENIC_ENS version 1.0.18.0 is supported with ESX 8.0 and above.

ESX NENIC_ENS Version 1.0.18.0

NENIC_ENS version 1.0.9.0 is supported with ESX 8.0 and above.

ESX FNIC Driver Updates

Native FNIC Version 5.0.0.50

Native FNIC driver version 5.0.0.50 is supported with ESX 8.0 and above.

Note Driver version 5.0.0.x supports both native FC and FC NVME functionality

ESX FC NVME is supported with VIC 1400 and 15000 series adapters.

FDMI is supported with Native FNIC driver version 5.0.0.x on VIC 1400 and 15000 series adapters.

Interrupt mode INT-x is not supported with ESX nfnic and nenic drivers.

FPIN feature is supported on ESXi 8.0U3 and ESX 9.0.

Linux ENIC Driver Updates

ENIC Version 4.9.0.11-x

This driver supports the following Linux Operating System versions:

- Red Hat Enterprise Linux 8.8, 8.10, 9.2, 9.4, 9.6, 10.0
- SUSE Linux Enterprise Server 12.5, 15.4, 15.5, 15.6, 15.7
- Ubuntu Server 22.04, 22.04.1, 22.04.2, 22.04.3, 22.04.4, 22.04.5, 24.04, 24.04.1, 24.04.2, 24.04.3
- Oracle Linux with UEK R6U2, R6U3, R7, R7U1, RyU2, R7U3, R8, R8U1

  For UEFI secure boot in Oracle Linux OS, install cisco-ucs-shim_certificate.rpm prior to installing Cisco ENIC or FNIC driver.
- Rocky Linux 8.10, 9.6, 9.7, 10.0, 10.1

ENIC version 4.10.366.0-x

This driver supports the following Linux Operating System versions: Red Hat Enterprise Linux 9.7 and 10.1.

In addition to the existing features, NFS over RDMA is supported on Red Hat Enterprise Linux 9.7 and 10.1.

ENIC Version 939.x

This driver supports the following Linux Operating System versions:

- -Citrix Hypervisor 8.4 LTSR

ENIC-DKMS Version 4.9.0.11-x

- Ubuntu Server 22.04, 22.04.1, 22.04.2, 22.04.3, 22.04.4, 22.04.5, 24.04, 24.04.1, 24.04.2, 24.04.3

  Refer to DKMS_README for installation instructions.

  Installing ENIC-DKMS will install both enic and enic-rdma functionality.

Linux FNIC Driver Updates

Unified FNIC Driver 2.0.0.116-x

This driver supports the following Linux Operating System versions:

- Red Hat Enterprise Linux 8.8, 8.10, 9.2, 9.4, 9.6, 9.7, 10.0, 10.1

  SUSE Linux Enterprise Server 12.5, 15.4, 15.5, 15.6, 15.7

  Ubuntu Server 22.04, 22.04.1, 22.04.2, 22.04.3, 22.04.4, 22.04.5, 24.04, 24.04.1, 24.04.2, 24.04.3

  Oracle Linux with UEK R6U2, R6U3, R7, R7U1, RyU2, R7U3, R8, R8U1

  For UEFI secure boot in Oracle Linux OS, install cisco-ucs-shim_certificate.rpm prior to installing Cisco ENIC or FNIC driver.

  Rocky Linux 8.10, 9.6, 9.7, 10.0, 10.1

Unified FNIC Driver 2.0.0.90-x

This driver supports the following Linux Operating System versions:

- Citrix Hypervisor 8.4 LTSR

FNIC-DKMS Version 2.0.0.116-x

Ubuntu Server 22.04, 22.04.1, 22.04.2, 22.04.3, 22.04.4, 22.04.5, 24.04, 24.04.1, 24.04.2, 24.04.3

Refer to README.txt for installation instructions.

Note

- RDMA and ENS features are not supported with VIC 13xx adapters from the release 4.3(4a) and later releases.
- RDMA and ENS Features are supported with VIC 14xx adapters onwards.
- fnic multiqueue is supported on RHEL 8.4+, 9.0+ , SLES 12SP5+
- FC-NVME is supported for Cisco UCS VIC 14xx and VIC 15xxx adapters on RHEL 8.4+, RHEL 9.0+, SLES 15SP12+
- FDMI is supported for VIC 14xx and VIC 15xxx adapters on RHEL 8.4+, 9.0+, SLES 12 SP5, SLES 15 SP4 and SLES 15 SP6.
- SLES 15 FC-NVMe is supported with DM multi-pathing and native multi-pathing is not supported.

For the latest set of software and hardware, check the support matrix: https://www.cisco.com/c/en/us/products/servers-unified-computing/interoperability.html.

Windows 2025, 2022 and 2019 NENIC/ENIC Driver Updates

Windows Server 2025 and 2022 NENIC Version 5.17.0.12

MTU 9158 supports only for Cisco UCS VIC 15xxx series adapters.

NDIS Poll Mode feaure is supported only on Windows server 2025 with Cisco UCS VIC 15000 series adapters.

Recommendation:

Please update the latest Microsoft KB for both Microsoft Windows 2022 and Windows 2025 OS.

Update the below version or later:

Microsoft Windows 2025 kb5072033: https://www.catalog.update.microsoft.com/Search.aspx?q=KB5072033

Microsoft Windows 2022 kb5073457: https://www.catalog.update.microsoft.com/Search.aspx?q=KB5073457

Windows Server 2019 NENIC Version 5.15.17.4

- This driver update provides an VMMQ & RDMA driver for VIC 1400, 14000 and 15000 Series Adapters and Supported QoS Changes.

Windows 2025, 2022 and 2019 FNIC Driver Updates

Windows Server 2025, 2022 FNIC Version 3.3.0.40

- This driver update provides a Spectre-compliant fNIC driver for VIC 15000, 1400, 14000 and VIC 1300 adapters.

VIC Driver Updates for Release 6.0.1



Note VIC drivers for all operating systems listed in the HCL are cryptographically signed by Cisco.

ESX ENIC Driver Updates

ESX NENIC Version 2.0.17.0

NENIC/NENIC(RDMA) version 2.0.17.0 is supported with ESX 7.0 U1, ESX 7.0 U2, ESX 7.0 U3, ESX 8.0 and above.

ESX NENIC_ENS Version 1.0.9.0

NENIC_ENS version 1.0.9.0 is supported with ESX 7.0 U1, ESX 7.0 U2, ESX 7.0 U3, ESX 8.0 and above.

ESX FNIC Driver Updates

Native FNIC Version 5.0.0.45

Native FNIC driver version 5.0.0.45 is supported with ESX 8.0, ESX 8.0U1, and ESX 8.0U2.

Native FNIC Version 5.0.0.46

Native FNIC driver version 5.0.0.46 is supported with ESX 7.0 U1, ESX 7.0 U2, ESX 7.0 U3, ESX 8.0 U3 and ESX 9.0.

Note Driver version 5.0.0.x supports both native FC and FC NVME functionality

ESX FC NVME is supported with VIC 1400 and 15000 series adapters.

FDMI is supported with Native FNIC driver version 5.0.0.x on VIC 1400 and 15000 series adapters.

Interrupt mode INT-x is not supported with ESX nfnic and nenic drivers.

FPIN feature is supported on ESXi 8.0U3 and ESX 9.0.

Linux ENIC Driver Updates

ENIC Version 1160.x

This driver supports the following Linux Operating System versions:

- Red Hat Enterprise Linux 8.8, 8.10, 9.2, 9.4, 9.6, 10.0
- SUSE Linux Enterprise Server 12 SP5, 15 SP4, 15 SP5, 15 SP6
- Ubuntu Server 22.04, 22.04.1, 22.04.2, 22.04.3, 22.04.4, 22.04.5, 24.04, 24.04.1 with 6.8.0-51 kernel, 24.04.2

ENIC Version 939.x

This driver supports the following Linux Operating System versions:

- -Citrix Hypervisor 8.4 LTSR

Linux FNIC Driver Updates

Unified FNIC Driver 2.0.0.10x

This driver supports the following Linux Operating System versions:

- Red Hat Enterprise Linux 8.8, 8.10, 9.2, 9.4, 9.6, 10.0
- SUSE Linux Enterprise Server 12 SP5, 15 SP4, 15 SP5, 15 SP6

Unified FNIC Driver 2.0.0.9x

This driver supports the following Linux Operating System versions:

- Citrix Hypervisor 8.4 LTSR

Note

- RDMA and ENS features are not supported with VIC 13xx adapters from the release 4.3(4a) and later releases.
- RDMA and ENS Features are supported with VIC 14xx adapters onwards.
- fnic multiqueue is supported on RHEL 8.4+, 9.0+ , SLES 12SP5+
- FC-NVME is supported for Cisco UCS VIC 14xx and VIC 15xxx adapters on RHEL 8.4+, RHEL 9.0+, SLES 15SP12+
- FDMI is supported for VIC 14xx and VIC 15xxx adapters on RHEL 8.4+, 9.0+, SLES 12 SP5, SLES 15 SP4 and SLES 15 SP5.
- SLES 15 FC-NVMe is supported with DM multi-pathing and native multi-pathing is not supported.

For the latest set of software and hardware, check the support matrix: https://www.cisco.com/c/en/us/products/servers-unified-computing/interoperability.html.

Windows 2025, 2022 and 2019 NENIC/ENIC Driver Updates

Windows Server 2025 and 2022 NENIC Version 5.16.18.8

Windows Server 2019 NENIC Version 5.15.17.4

- This driver update provides an VMMQ & RDMA driver for VIC 1400, 14000 and 15000 Series Adapters and Supported QoS Changes.
- NDIS Poll Mode feaure is supported only on Windows server 2025 with Cisco UCS VIC 15000 series adapters.

Windows Server 2022 and 2019 ENIC Version 4.4.0.15

- This driver update provides a Spectre-compliant driver for VIC 1300 Series adapters.

Windows 2025, 2022 and 2019 FNIC Driver Updates

Windows Server 2025, 2022 and 2019 FNIC Version 3.3.0.24

- This driver update provides a Spectre-compliant fNIC driver for VIC 15000, 1400, 14000 and VIC 1300 adapters.

VIC Management Driver for Standalone Rack Server PCIe Interface Support for Windows 2025, 2022 and 2019

Windows Server 2025, 2022 and 2019 VIC management driver version 1.0.0.1

This driver update provides for VIC 1400 and 15000 series adapters.

Resolved Caveats

The following table lists the resolved caveats in Release 4.3 and 6.0.

Table 1: Release 6.0

Defect ID	Description	First Bundle Affected	Resolved In
CSCwp03151	Oracle UEK 7 and 8 - Unable to load async driver when secure booted This issue is now resolved.	2.0(0.75)	6.0(2b)

Table 2: Release 4.3

Defect ID	Description	First Bundle Affected	Resolved In
CSCwo03958	When a controller is reset in the ESXi host connected to FC which is using NVMe drives, NVMe timeout causes Purple Screen of Death error (PSOD). This issue is now resolved in the NFNIC driver version 5.0.0.46.	NFNIC driver version 5.0.0.44	4.3(6a)
CSCwn45550	When a driver receives FCPIO_ITNF_REJECT in ESX virtual reset, it does LOGO. This issue is now resolved in the NFNIC driver version 5.0.0.46.	NFNIC driver version 5.0.0.44	4.3(6a)
CSCwn26614	VM hangs with multiple vvol configuration. The vmkernel log indicates IO timeout, abort reject from target. The nfnic driver tries to abort several times and fails. This issue is now resolved in the NFNIC driver version 5.0.0.46.	NFNIC driver version 5.0.0.44	4.3(6a)
CSCwk78247	The ESXi host encounters a PSOD error during fnic_rq_cleanup routine. This issue was seen on the following NFNIC driver versions: • 5.0.0.40 • 5.0.0.42 This issue is now resolved in the NFNIC driver version 5.0.0.46.	NFNIC driver version 5.0.0.40	4.3(6a)
CSCwa56085	A system assertion occurred on a VIC 1400 Series adapter while TCP traffic was running on the enic interfaces during the scan for hardware changes.	3.0(0.1)A	4.3(6a)
CSCwb79770	On a UCS C3260 standalone server with a VIC 15000 Series adapter, Vport connectivity fails when 16k RX RingSize is configured during Initial Configuration. This issue happens ONLY when the RX ring side is configured to values above 4K when first setting up the initial confiuration. Once the host is rebooted or the interface is enabled or disabled, the issue disappears.	3.3(0.11)A	4.3(6a)

Defect ID	Description	First Bundle Affected	Resolved In
CSCwj66629	When QinQ is enabled on vNIC (eth0 or eth1), with service profile having iSCSI policy (on vNIC eth2 or eth3), the native untagged traffic does not work through vNIC (eth0 or eth1).	4.3(4a)	4.3(6a)
CSCwk37506	When Cisco UCS servers with 1400 or 15000 series adapters have multiple paths for SANboot configured, and one path has issues in discovering the LUN while another path is successful, the clean-up done by fnic driver causes crash when the OS is loaded. This issue is resolved.	4.3(4c)	4.3(4c)
CSCwh50478	Microsoft Windows 2022 OS resulted in bugcheck 0x50 when the interrupt count is configured to a value greater than 256 This issue is resolved.	4.3(2c)	4.3(4a)

The following table lists the resolved caveats in Release 4.2.

There are no resolved caveats in Release 4.2(1d).

Table 3: Release 4.2

Defect ID	Description	First Bundle Affected	Resolved In
CSCwh50478	Microsoft Windows 2022 OS resulted in bugcheck 0x50 when the interrupt count is configured to a value greater than 256 This issue is resolved.	4.3(2c)	4.3(4a)
CSCvq02558	The VIC 1400 Series Windows drivers on Cisco UCS B-Series and C-Series servers could not support more than 2 RDMA engines per adapter. Windows could only support RDMA on 4 VPorts on each RDMA Engine. You can Enable RDMA with the PS command on more than 4 vPorts on each RDMA Engine, but the driver would not allocate RDMA resources to more than 4 vPorts per engine. Executing a **Get-NetAdapterRdma** command on the host could show additional vPorts with RDMA Capable Flag as True. Using the **Get-smbclientNetworkInterfce** command shows the actual number of RDMA vPort resources available for use. This issue is resolved.	4.0(3.51)B and C	4.2(1i)B and C
CSCvy11532	The Windows neNIC Driver failed to load (Yellow Bang) on VIC 14XX Series adapter on Cisco C245 M6 (AMD Based) Rack Servers with SMT / X2APIC features enabled. This issue is resolved.	4.2(0.232)C	4.2(1d)

Defect ID	Description	First Bundle Affected	Resolved In
CSCvx37120	When no BIOS Policy was used in the Service Profile for Cisco UCS M6 servers. the "$" sign appeared in CDN Names for network interfaces in OS. This issue is resolved.	4.2(1a)A	4.2(1i)A
CSCvy75588	Call trace was seen on RHEL 8.4 when fc-nvme name space was not configured.	VIC FW 5.2(1a) Driver version 2.0.0.72-189.0	4.2(2a)A
CSCvz51592	SLES 15.3 intermittently crashed during sanboot with inbox driver.	Inbox fnic 1.6.0.53 Unfied fnic 2.0.0.74-198.0	4.2(2a)A
CSCwa67341	NENIC warning message with Event ID 10 in the windows Event Log. When the warning is posted the QoS on this adapter is disabled.	4.2(1.147)C	4.2(2a)A

Open Caveats

The following table lists the open caveats.

Defect ID	Description	Workaround	First Release Affected
CSCwp90529	ESX installer doesnt show the iSCSI LUN with iSCSI IPv6.	It is working with iSCSI IPv4.	6.0.2
CSCws94884	Any 4 socket Intel blade servers with high_processor_count 256 or more results in RDMA connection failure.	Please update the latest Microsoft KB on the respective OS. Microsoft Windows 2025 kb5072033: https://www.catalog.update.microsoft.com/Search.aspx?q=KB5072033 Microsoft Windows 2022 kb5073457: https://www.catalog.update.microsoft.com/Search.aspx?q=KB5073457	6.0.2

Defect ID	Description	Workaround	First Release Affected
CSCwm26689	Upgrading the networking adapter nenic driver version to 5.13.24.2 or using this specific driver version on a newly installed Windows Server OS result in a BSOD followed by a host reboot.	If a lower nenic driver version is used instead of the version 5.13.24.2, then the BSOD does not appear.	4.3(2b), 4.3(4a), 4.3(5a)
CSCvy16861	In a Windows Hyper-V environment the VMQ feature is enabled. Event ID 113 is logged in the system event viewer when VMs are powered ON.	It has been determined that this issue does not have any functional or performance impact on the functioning of the VMQ feature. This issue will be investigated in a future release.	4.2(0.193)B
CSCvv76888	On a Cisco VIC 1300 Series adapters, using neNIC Driver version 4.3.0.6 and a 1300 Series adapter with a VMQ policy, a yellow bang appears when configured with a VMQ sub-vNIC value of 10 or less.	When a VMQ policy is created, ensure that there are at least 32 interrupts, even though the number of VMQs in the policy is lower. This will enable the driver to load and function correctly.	4.1(2.13)B

Defect ID	Description	Workaround	First Release Affected
CSCvx81384	In a UCS Manager service profile where vHBAs are assigned with an FC adapter policy that has more than one I/O Queues, BSOD will be observed after loading the fNIC driver on Windows 2019. The issue is observed on VIC 1400 Series adapters on SAN and Local boot.The server showed BSOD or the below error: `Stop code: PAGE FAULT IN NONPAGED AREA`	Modify the FC adapter policy and set the I/O Queues to 1.	2.4(08)
CSCvr63930	On ESXi, a Cisco UCS B-series blade server and Cisco UCS C-series rack server with a a Cisco VIC 1440, VIC 1480,,1455, 1457, or 1467 adapter, the port link speed output is not updating after an uplink is Down /Up.	• Reboot the ESXi host to get the correct port speed reporting. • If a new UIF link needs to be added or deleted to the existing system, a reboot is required to reflect the correct speed in ESXi.	3.1(1.152)B 2.1(2.56)A

Defect ID	Description	Workaround	First Release Affected
CSCvt66474	On Cisco VIC 1400 Series adapters, the neNIC driver for Windows 2019 can be installed on Windows 2016 and the Windows 2016 driver can be installed on Windows 2019. However, this is an unsupported configuration. If the Windows 2019 neNIC driver is installed on Windows 2016, RDMA is not supported. If the Windows 2016 neNIC driver is installed on Windows 2019, the RDMA feature that is supposed to be enabled on Windows 2019 will be disabled.	The driver binaries for WS2016 and WS2019 are in folders that are named accordingly. Install the right binary on the platform that is being built or upgraded.	4.1(1.49)C
CSCvz57245	On a B200 M6 blade server with UCS VIC 14425 adapter configured for SAN boot and with 4 vHBAs, LUNs go offline when one of the controller nodes is down or stuck and multiple reboots have occurred.	Perform the following steps to bring the LUN back online: 1. On Windows Server, go to Disk Management, 2. Right click on the disk that has gone offline and click on **Online**. This should return the LUN to service.	4.2(1a)A

Defect ID	Description	Workaround	First Release Affected
CSCwa93556	On M5 Blade and Rack servers with VIC 1440 and 1480 adapters, ESXi OS installation fails with FC boot when the adapter policy is set to INTX mode.	No workaround.	4.2(1.151)A

Behavior Changes and Known Limitations

Virtual Machine Multi Queue (14xx and 15xxx vNICs)

Disabling VMMQ state for vport is not taking effect.

Workaround

Use the power shell command to disable and assign queue to 1.

```
#Get-VMNetworkAdapter -vmname * | Set-VMNetworkAdapter -VmmqEnabled $false -VmmqQueuePairs
1
```

Cisco UCS VIC adapters with Cisco UCS VIC firmware version 4.1(2b) and later do not support Third Party Transceivers

Cisco UCS VIC adapters with Cisco UCS VIC firmware version 4.1(2b) and later do not support third party transceivers.

Use Cisco qualified transceivers or cabling for the physical links after 4.1(2b).

When LUNs per Target is set to more than 1024 in FC adapter policy of vHBAs, but the actual value deployed in FC vNIC is capped to 1024.

In Cisco UCS Manager 4.2(3c) release or later, when **LUNs Per Target** field is set to more than 1024 in FC adapter policy of vHBAs of Service Profile, the actual value deployed in FC vNIC is capped to 1024.

This issue occurs because the firmware version on the VIC adapter is old and does not support more than 1024 value for **LUNs Per Target**.

RHEL 8.7 boots to emergency shell when LUNs Per Target is set to greater than 1024

If **LUNs Per Target** is set to greater than 1024 with multiple paths running RHEL 8.7, the OS takes a long time to scan all the paths. Eventually, the scan fails and the OS boots to the emergency shell.

Reduce the number of **LUNs Per Target** (paths) to be scanned by the OS.

Q-in-Q Forwarding (14xx and 15xxx VNICs)

For double tagged frames (1Q + 1Q) generated by the host are sent out by the VICs, you must configure the following commands on the Linux host.

1. Disable VLAN TX offload on the 14xx or 15xxx VNICs that need to transmit out double tagged (1Q + 1Q) frames.

   Perform this from the host and enter the following `ethtool` command:

   ```
   ethtool -K <interface_name> txvlan off
   ```

2. To verify that the VLAN TX offload feature has been turned off, enter the following command:

   ```
   ethtool -k <interface_name> | grep tx-vlan-offload
   ```

Windows : Default adapter policy win-HPN-SMBd to be changed to 512+ for large logical processors value

Modify the interrupt value to 514 and re-deploy the updated setting.

Support for Physical NIC Mode

Beginning from release 4.2(3b), physical NIC mode is supported completely and the term **Experimental** is removed from Physical NIC mode for Cisco UCS C-Series Rack Servers.

Physical NIC mode is not supported in trunk mode.

Link Speed on ESXCLI is not updated at Runtime after Link Down/UP

This issue occurs when VMware API is not updating the Link status to Driver.

To avoid this, run the following command at FI or Up Link switch:

```
sh interface port-channel (uplink Po)
```

vNIC MTU Configuration

MTU on VIC 1400 Series adapters in Windows is now derived from the Jumbo Packet advanced property rather than from the UCS configuration

For VIC 14xx adapters, you can change the MTU size of the vNIC from the host interface settings. The new value must be equal to or less than the MTU specified in the associated QoS system class. If this MTU value exceeds the MTU value in the QoS system class, packets could be dropped during data transmission.

RDMA Limitations

- The VIC 1400 Series Windows drivers on Blade and Rack servers do not support more than 2 RDMA engines per adaptor. Currently, Windows can only support RDMA on 4 VPorts on each RDMA Engine.
- RoCE version 1 is not supported with any fourth generation Cisco UCS VIC 1400 Series adapters.
- UCS Manager does not support fabric failover for vNICs with RoCEv2 enabled.
- RoCEv2 cannot be used on the same vNIC interface as NVGRE, NetFlow, and VMQ features.
- RoCEv2 cannot be used with usNIC.
- RoCEv2 cannot be used with GENEVE offload.

- RoCEv2 cannot be used with SR-IOV on both ESX and Linux.

Configuration Fails When 16 vHBAs are Configured with Maximum I/O Queues

Cisco UCS Manager supports a maximum of 64 I/O Queues for each vHBA. However, when you configure 16 vHBAs, the maximum number of I/O Queues supported for each vHBA becomes 59. In Cisco UCS Manager Release 4.0(2), if you try to configure 16 vHBAs with more than 59 I/O queues per vHBA, the configuration fails.

VM-FEX

ESX VM-FEX and Windows VM-FEX are no longer supported.

INTx Interrupt Mode

INTx interrupt mode is not supported with the ESX nenic driver and nfnic driver.

INTx interrupt mode is not supported with Windows nenic and fnic drivers.

INTx interrupt mode is not supported with Linux enic and fnic drivers.

FC-NVMe Failover

To protect against host and network failures, you must zone multiple initiators to both of the active controller ports. Passive paths will only become active if controller fails, and will not initiate a port flap. On operating systems based on older kernels that do not support ANA, dm multi-path will not handle the passive paths correctly and could send IOs to a passive path. These IO operations will fail.

FC-NVMe Namespaces

Starting with RHEL 8.5 nvme-cli version 1.14, the nvme list command will not display fc-nvme namespaces. Use nvme-cli from RHEL 8.4 or a nvme-cli version of 1.15 or later to view fc-nvme namespaces.

FC-NVMe ESX Configurations

VIC 15000 and 1400 Series adapters running ESXi currently only support a maximum FC-NVMe namespace block size 512B, while some vendors use a default 4KB block size for ESXi 7.0. The target FC-NVMe namespace block must therefore be specifically configured to 512B. Under Storage go to NVME and change the Block Size in NVMe from 4KB to 512B.

Configuration changes are also required to avoid a decrease in I/O throughput and/or BUS BUSY errors, caused by a mismatch between FC-NVMe Target controller Queue-depth and VM Device Queue-depth. To avoid this, run the following command to display all controllers discovered from ESXi Host:

```
# Esxcli nvme controller list
```

Check the list of controller queues and queue size for the controllers:

`vsish -e get /vmkModules/vmknvme/controllers/`*controller number*`/info`

All Controllers on the same target will support same queue size, for exaple:

```
Number of Queues:4
Queue Size:32
```

To tune the VMs, change the `queue_depth` of all NVMe devices on the VMs to match the controller Queue Size. For example, if you are running a RHE VM, enter the command:

```
# Echo 32 > /sys/block/sdb/ device/queue_depth
```

Verify that the queue_depth was set to 32 by running the command:

cat /sys/block/sdb/ device/queue_depth



Note This change is not persistent after reboot.



Note For additional driver configuration, it may be necessary to set the Adapter Policy to **FCNVMeInitiator** to create a FC-NVMe Adapter.

Adapter Policy can be found under **Server** > **Service Profile**>**Policies**> **Adapter Policies Create FC Adapter Policy**>

Adapter Policy can be found under **Server** > **Service Profile**> **Storage**> **Modify vHBAs**

Enabling FC-NVMe with ANA on ESXi 7.0

In ESXi 7.0, ANA is not enabled for FC-NVMe. This can cause failure of the Target side Path failover.

For a procedure to enable ANA, go to the following URL: https://docs.netapp.com/us-en/ontap-sanhost/nvme_esxi_7.html#validating-nvmefc

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: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/overview/guide/UCS_roadmap.html

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmapdoc roadmap* available at the following URL: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/overview/guide/ucs_rack_roadmap.html.

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.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation.

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