Cisco UCS Virtual Interface Card Drivers for Windows Installation Guide

First Published: 2011-09-06

Last Modified: 2015-09-01

C O N T E N T S

Preface

This preface includes the following sections:

Organization

This document includes the following parts:

Chapter	Title	Description
Chapter 1	Overview	Contains an overview of Cisco UCS VIC drivers.
Chapter 2	Downloading and installing Cisco UCS VIC Drivers	Contains information about how to obtain and install Cisco UCS VIC drivers.
Chapter 3	Uninstalling Cisco UCS VIC Drivers	Contains information about uninstalling Cisco UCS VIC drivers.

New and Changed Information for this Release

The following table provides an overview of the significant changes to this guide for this current release. The table does not provide an exhaustive list of all changes made to this guide or of the new features in this release. For information about new supported hardware in this release, see the *Release Notes for Cisco UCS Software* available through the Cisco UCS B-Series Servers Documentation Roadmap.

Table 1: New Features

Feature	Description	Where Documented
NIC Teaming Driver	Allows teaming (bonding) of multiple NICs for high availability and load balancing.	About the Cisco NIC Teaming Driver for Windows, on page 10
New Cisco UCS VIC drivers installation guide	Platform-specific installation guides for Cisco UCS VIC drivers.	*Cisco UCS Virtual Interface Card Drivers for Windows Installation Guide*

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

Follow Cisco UCS Docs on Twitter to receive document update notifications.

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to ucs-docfeedback@external.cisco.com. We appreciate your feedback.

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.

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

Follow Cisco UCS Docs on Twitter to receive document update notifications.

C H A P T E R 1

Overview

This chapter includes the following sections:

Overview of Cisco UCS Virtual Interface Card Drivers

Cisco UCS Virtual Interface Card (VIC) drivers facilitate communication between supported operating systems and Cisco UCS Virtual Interface Cards (VICs).

Cisco UCS VIC driver ISO bundles include an eNIC driver and an fNIC driver. The eNIC is the driver for the Cisco UCS VIC Ethernet NIC. The fNIC is the driver for the Cisco UCS VIC Fibre Channel over Ethernet HBA.

Note   fNIC is not supported in Cisco UCS Manager Release 2.5.

For Windows, the ISO bundle also includes the iSCSI Crash Dump driver, which supports Windows crash dumps when the server is booted from the Cisco VIC Ethernet interface using the Microsoft iSCSI initiator.

Cisco UCS Manager Release 2.5, which introduces Cisco UCS M-Series servers, continues to provide vNIC capabilities. Additionally, it provides for a new capability with its virtualized shared local storage. This virtual storage controller provides access to a virtual drive that is provided to the server through the shared storage controller and hard drives in the chassis. The virtual storage controller introduces a new PCIe device known as a SCSI NIC (sNIC), which is presented to the OS. The OS views these items as locally-attached SCSI devices.

The sNIC provides the pathway for SCSI commands from the server to the virtual drive. This controller is a new device to the OS and uses an sNIC driver that is loaded into the OS. Because the sNIC is a new PCIe device, the sNIC driver may not be part of some OS distributions. When that is the case, the sNIC driver must be loaded at the time of OS installation to see the storage device on the server. The sNIC driver, like the eNIC and fNIC drivers, is certified by the OS vendor and eventually included as part of the core OS install package. When the driver is present, the virtual drive is visible to the OS, and is presented as a standard hard drive connected through a RAID controller.

Supported Hardware and Software

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

Downloading and Installing Cisco UCS VIC Drivers

This chapter contains the following sections:

Downloading Cisco UCS VIC Drivers

Obtaining the ISO Image Bundle

This procedure describes how to download the UCS Drivers ISO bundle, which contains most of the Cisco UCS Virtual Interface Card drivers. In some cases, a driver might be in a different bundle, which is noted in the installation procedure for that driver.

Procedure

Step 1   In a web browser, navigate to http://www.cisco.com.

Step 2   Under **Support**, click **All Downloads**.

Step 3   In the product selector, click **Products**, then click **Servers - Unified Computing**.

Step 4   If prompted, enter your Cisco.com username and password to log in.
You must be signed in to download Unified Computing System (UCS) drivers.

Step 5   Choose your server.
Cisco UCS drivers are available for **Cisco UCS B-Series Blade Server Software**, **Cisco UCS C-Series Rack-Mount UCS-Managed Server Software**, and **Cisco UCS M-Series Modular Server Software**.

Step 6   Click **Unified Computing System (UCS) Drivers**.

Step 7   Click the **Release Notes** link to view the latest version of the Release Notes.

Step 8   For each driver ISO that you want to download, do the following:

a) Click the link for the release that you want to download.
The latest release version is selected by default.

b) Choose your download method and follow the prompts to complete your driver download.

Download

Downloads the software immediately.

Add to Cart

Adds the software driver ISO to your cart to download at a later time.

What to Do Next

Read the Release Notes before installing the Cisco UCS Virtual Interface Card drivers.

Installing Cisco UCS VIC Drivers

Installation Methods

Cisco UCS Virtual Interface Card drivers for Windows be can installed in the following ways:

• During a new Windows OS installation.

• After OS installation using the Device Manager.

Administrative privileges are required to install and update Cisco UCS Virtual Interface Card drivers.

Note   To avoid a system crash, you must first upgrade the infrastructure firmware, which includes the UCS Manager, the Fabric Interconnects, and the chassis I/O Modules. For information on the proper sequence to installing the drivers, see Installing Windows Drivers During OS Install (Windows 2012 and 2012 R2), on page 4.

Installing Windows Drivers During OS Install (Windows 2012 and 2012 R2)

If you are installing Windows on a LUN, you must install Cisco VIC drivers for Windows during the OS installation. If you do not provide the drivers during the OS installation, the system is not able to detect the LUN.

Except in Cisco UCS M-Series, if installing Windows on the local hard disk, it is not required to install the drivers during the OS installation. You can install the drivers after completing the OS installation.

In Cisco UCS M-Series, to install Windows on the local hard disk, you must install the VIC drivers during OS installation.

⚠️

Caution   The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Ensure that you adhere to the following best practice for installing the Windows drivers during the OS installation of Windows 2012 and 2012 R2. You must upgrade the infrastructure in the following order before upgrading the drivers.

- Upgrade the infrastructure firmware which includes the UCS Manager, the Fabric Interconnects, and the chassis I/O Modules.

- Upgrade the server and adapter firmware.

- Upgrade the OS VIC drivers.

⚠️

Caution   Failure to adhere to the proper upgrade sequence can cause the server to crash.

Procedure

Step 1   Start the Windows installation using the installation DVD or virtual media.

Step 2   On the **Where do you want to install Windows** screen, click **Load Driver**.

Step 3   **Browse** to the driver and click **OK**.The driver appears in the **Select the drive to be installed** window.

Step 4   Confirm that the correct driver is displayed on the **Select the drive to be installed** screen and click **Next**.

Step 5   Continue with your Windows installation on the LUN or select the LUN on the **Where do you want to install Windows?** screen.

Installing Windows Drivers During OS Install (Windows 2008 SP2 and R2)

If you are installing Windows on a SAN LUN, you must install Cisco VIC drivers for Windows during the OS installation. If you do not provide the drivers during OS installation, the system cannot detect the SAN LUN.

If you are installing Windows on the local hard disk, it is not required to install the drivers during the OS installation. You can install the drivers after completing the OS installation.

⚠️

Caution   The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Ensure that you adhere to the following best practice for installing the Windows drivers during the OS installation of Windows 2008 and 2008 R2. You must upgrade the infrastructure in the following order before upgrading the drivers.

- Upgrade the infrastructure firmware which includes the UCS Manager, the Fabric Interconnects, and the chassis I/O Modules.

Upgrade the server and adapter firmware.

Upgrade the OS VIC drivers.

When upgrading eNIC and fNIC drivers, Windows 2008 crashes if the following hotfixes are not installed sequentially:

1 KB2990941

2 KB2511962

3 KB2754704

Note Do not reboot until all three hotfixes are installed.

If these hotfixes are not installed, the device drivers are not correctly registered as critical devices, and cause a crash when they are being upgraded.

Procedure

Step 1 Start the Windows installation using the installation DVD or virtual media.

Step 2 On the **Where do you want to install Windows** screen, click **Load Driver**.

Step 3 **Browse** to the driver and click **OK**. The driver appears in the **Select the drive to be installed** window.

Step 4 Confirm that the correct driver is displayed on the **Select the drive to be installed** screen and click **Next**.

Step 5 Continue with your Windows installation on the SAN LUN or select SAN LUN on the **Where do you want to install Windows?** screen.

Installing Windows Drivers After OS Installation (Windows 2008-R2)

Caution The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Note Follow the same steps for Windows 2012 and Windows 2012 R2.

Procedure

Step 1 Windows detects the newly installed Fibre Channel or Ethernet device and displays a **Device driver software was not successfully installed** message.

Step 2 Right-click the Ethernet or Fibre Channel device and choose **Update driver software**.

Step 3 Click **Browse my computer for driver software**.

Step 4 Click **Let me pick from a list of device drivers on my computer**.

Step 5 On the **Select your drivers type from the list below** window, leave **Show All Devices** selected and click **Next**.

Step 6 On the **Select the device driver you want to install for this hardware** window, click **Have Disk**.

Step 7 On the **Install from Disk** window, **Browse** for the driver and click **OK**.

Step 8 Click **Next** on the **Select the device driver you want to install for this hardware** screen.

Step 9 Click **Close** to exit the wizard.

Step 10 If Windows displays the following message following SAN boot, click **Yes** to restart the computer immediately.

```
System Settings Change. Windows has finished installing a new device. The software that
supports your device requires that you restart your computer. You must restart your computer
before the new settings will take effect. Do you want to restart your computer now?
```

Installing Windows Drivers After OS Installation (Windows 2008 SP2)

⚠️

Caution The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Procedure

Step 1 When Windows detects the newly installed Fibre Channel or Ethernet device and displays the **Found New Hardware** wizard, click **Locate and install driver software (recommended)**.

Step 2 When asked to insert the disk, click **I don't have the disc. Show me other options.**

Step 3 Click **Browse my computer for driver software (advanced)**.

Step 4 Browse for the drivers and click **Next**.

Step 5 On the **Would you like to install this device software?** window, click **Install**.

Step 6 Click **Close** twice to complete the driver software installation.

Step 7 If Windows displays the following message following SAN boot, click **Yes** to restart the computer immediately.

```
System Settings Change. Windows has finished installing a new device. The software that
supports your device requires that you restart your computer. You must restart your computer
before the new settings will take effect. Do you want to restart your computer now?
```

Updating Existing Windows Drivers (Windows 2012 and 2012 R2)

Caution The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Follow the steps in this section to update existing Windows drivers. You can alternately upgrade the drivers using the Cisco VIO installer. Download the respective driver ISO for the required release, and use the MSI installer from that file location. For example, here are the paths to the specific releases:

- `Windows/Installers/Cisco/MLOM/W2K12/x64/`

- `Windows/Installers/Cisco/MLOM/W2K12R2/x64/`

Use the Cisco VIO installer to install and upgrade the VIC drivers across different versions and editions of Windows 2012 and 2012 R2. Refer to the readme file for additional information on the Cisco VIO installer.

Ensure that you adhere to the following best practice for installing the Windows drivers during the OS installation of Windows 2012 and 2012 R2.

Note You must upgrade the infrastructure in the following order before upgrading the drivers.

- Upgrade the infrastructure firmware which includes the UCS Manager, the Fabric Interconnects, and the chassis I/O Modules.

- Upgrade the server and adapter firmware.

- Upgrade the OS VIC drivers.

Caution Failure to adhere to the proper upgrade sequence can cause the server to crash.

Procedure

Step 1 Start the **Device Manager**.
   a) Right-click **My Computer**.
   b) choose **Manage**.
   c) choose **Device Manager**.

Step 2 Expand the adapter.

- For the eNIC driver, expand **Network Adapters**.

- For the fNIC driver, expand **Storage Controllers**.

Step 3 In the **Devices** list, right-click the adapter and choose **Update Driver Software**.

The **Update Driver Software** window opens.

Step 4   In the **How do you want to search for driver software?** area, choose **Browse my computer for driver software**.

Step 5   Choose your adapter and click **Next**.

Step 6   In the **Install from Disk** window, browse to the driver file and click **OK**.

Step 7   Click **OK** in the restart pop up to reboot the server.

Updating Existing Windows Drivers (Windows 2008 SP2 and R2)

⚠️
Caution   The driver installation file modifies certain registry entries, such as the disk timeout value of the system disk driver. Removing the driver does not restore these values.

Follow the steps in this section to update existing Windows drivers. You can alternately upgrade the drivers using the Cisco VIO installer. Download the respective driver ISO for the required release, and use the MSI installer from that file location. For example, here is the path to the Windows 2008 R2 release:

- `Windows/Installers/Cisco/MLOM/W2K8R2/x64/`

Use the Cisco VIO installer to install and upgrade the VIC drivers across different versions and editions of Windows 2008 and 2008 R2. Refer to the readme file for additional information on the Cisco VIO installer.

Ensure that you adhere to the following best practice for installing the Windows drivers during the OS installation of Windows 2008 and 2008 R2.

✎
Note   You must upgrade the infrastructure in the following order before upgrading the drivers.

- Upgrade the infrastructure firmware which includes the UCS Manager, the Fabric Interconnects, and the chassis I/O Modules.

- Upgrade the server and adapter firmware.

- Upgrade the OS VIC drivers.

⚠️
Caution   Failure to adhere to the proper upgrade sequence can cause the server to crash.

Procedure

Step 1   Start the **Device Manager**.

a)   Right-click **My Computer**.

b)   choose **Manage**.

c) choose **Device Manager**.

Step 2 Expand the adapter.

- For the eNIC driver, expand **Network Adapters**.

- For the fNIC driver, expand **Storage Controllers**.

Step 3 In the **Devices** list, right-click the adapter and choose **Update Driver Software**.
The **Update Driver Software** window opens.

Step 4 In the **How do you want to search for driver software?** area, choose **Browse my computer for driver software**.

Step 5 Choose your adapter and click **Next**.

Step 6 In the **Install from Disk** window, browse to the driver file and click **OK**.

Step 7 Click **OK** in the restart pop up to reboot the server.

Upgrading Cisco UCS VIC Drivers on Windows

You can use the Cisco VIO installer to install and upgrade the VIC drivers across different versions and editions of Windows 2008, 2008 R2, 2012, and 2012 R2. The Cisco VIO installer is available as part of the Cisco UCS Drivers ISO bundle.

Installing the NIC Teaming Driver

About the Cisco NIC Teaming Driver for Windows

The Cisco NIC Teaming Driver for Windows is supported by Windows Server 2008 and Windows Server 2008 R2 64 bit. The driver can be installed through either the Windows Control Panel or the Windows command prompt.

Note
- Hyper-V guest operating systems are not supported with the Cisco NIC Teaming Driver for Windows.

- The NIC teaming driver supports up to four teams.

After installing the driver, you can configure NIC teaming using the **enictool.exe** command line utility provided with the driver files. The driver supports the following teaming modes:

- Active-Backup (with or without failback)

- Active-Active (transmit load balancing)

- 802.3ad LACP

The driver supports the following transmit load balancing methods:

- TCP connection

• Source and destination MAC address

• MAC address and IP address

The driver supports the following hashing options for load balancing:

• XOR hash

• CRC hash

Obtaining the NIC Teaming Driver for Windows

The Cisco NIC Teaming Driver is contained in the UCS-related Windows Utilities ISO.

Procedure

Step 1 In a web browser, navigate to http://www.cisco.com.

Step 2 Under **Support**, click **All Downloads**.

Step 3 In the product selector, click **Products**, then click **Unified Computing and Servers**.

Step 4 If prompted, enter your Cisco.com username and password to log in.
You must be signed in to download UCS drivers.

Step 5 Depending on your platform, choose **Cisco UCS B-Series Blade Server Software**, **Cisco UCS C-Series Rack-Mount UCS-Managed Server Software**, or **Cisco UCS M-Series Modular Server Software**.

Step 6 Click **Unified Computing System (UCS) Utilities** and select the **Windows** platform.

Step 7 Click the link for the release that you want to download.
The latest release version is selected by default.

Step 8 Click the **Release Notes** link to view the latest version of the Release Notes.

Step 9 Choose your download method and follow the prompts to complete your driver download.

   Download

   Downloads the software immediately.

   Add to Cart

   Adds the utilities ISO to your cart to be downloaded at a later time.

What to Do Next

Read the *Release Notes for Cisco UCS Virtual Interface Card Drivers* before installing the driver.

Installing the NIC Teaming Driver from the Control Panel

Procedure

Step 1   In Windows, click **Start** > **Control Panel**.

Step 2   Navigate to and click the **Network and Sharing Center**.
For the specific location see the Windows server documentation.

Step 3   In the **Network and Sharing Center**, click **Manage Network Connections**.

Step 4   In the **Network Connections** folder, right-click on an Ethernet interface and choose **Properties**.

Step 5   Click **Install** and choose **Protocol** > **Add**.

Step 6   Browse to the drivers directory and click **OK**.
The Cisco NIC Teaming Driver is installed and listed in the Ethernet interface properties.

What to Do Next

In the command prompt, run the **enictool.exe** utility to create and delete teams.

Installing the NIC Teaming Driver from the Command Prompt

Procedure

Step 1   In Windows, open a command prompt with administrator privileges.

Step 2   At the command prompt, enter **enictool -p** *"drivers_directory"*
The Cisco NIC Teaming Driver is installed using the .inf files located in the specified directory.

Example:
This example installs the teaming driver using the .inf files located in the temp directory:

```
C:\> enictool -p "c:\temp"
```

What to Do Next

Use the **enictool.exe** utility to create and delete teams.

Configuring the NIC Teaming Driver Using enictool.exe

Procedure

Step 1   In Windows, open a command prompt with administrator privileges.

Step 2   To create a team, enter **enictool -c** *"list of connections"* **-m** *mode*

The mode options are as follows:

- 1—Active Backup
- 2—Active Backup with failback to active mode
- 3—Active Active (transmit load balancing)
- 4—802.3ad LACP

Example:
This example creates a team of two NICs in Active Backup mode:

```
C:\> enictool -c "Local Area Connection" "Local Area Connection 2" -m 1
```

Step 3 To delete a team, enter **enictool -d** *"name of the NIC team"*

Example:
This example deletes a team called "Local Area Connection 3":

```
C:\> enictool -d "Local Area Connection 3"
```
Note Local Area Connection 3 is the name of the NIC team and not the name of the individual adapters.

Step 4 To view additional options and usage information, enter **enictool /?**
Use the displayed command option information to configure load balancing method, load balancing hash method, and other options.

Installing the iSCSI Crash Dump Driver

Before You Begin

Ensure that the Microsoft iSCSI service is running.

Ensure that the iSCSI vNIC is defined in the service profile.

Procedure

Step 1 Download the appropriate driver ISO file from cisco.com.
Step 2 Mount and extract the CSCO_VIO_INSTALLER_64_3.5.8.msi file.
Step 3 Run the CSCO_VIO_INSTALLER_64_3.5.8.msi file in Windows.
Step 4 In the VIO Installer, select **VIC iSCSI dump** then **Next**.
Step 5 Reboot the server.

Installing the sNIC Driver for the First Time

Windows detects the newly installed device and displays the **Found New Hardware with SAS Controller** message. The **Found New Hardware** wizard begins installing a device driver for the newly installed device.

☞

Important   The sNIC driver is supported only on Windows 2012 or later versions.

Procedure

Step 1   Select **Install from a list or specific location (Advanced)** and click **Next**.

Step 2   Select **Search for the best driver in these locations**.

Step 3   Select **Include this location in the search:**.

Step 4   Enter the path to the driver directory and click **Next**.

Step 5   Click **Next** and complete the **Found New Hardware Wizard**.

Step 6   Click **Yes** to restart the computer if Windows displays the following message—`System Settings Change. Windows has finished installing a new devices. The software that supports your device requires that you restart your computer. You must restart your computer before the new settings will take effect. Do you want to restart your computer now?`

Step 7   If Windows Server 2012 installs the driver for the newly added VIC-SNIC automatically during startup without prompting you for a selection, refer to .

Upgrading an Existing sNIC Driver

You can install an updated version of the sNIC driver.

Procedure

Step 1 Right-click **My Computer**.

Step 2 Click **Manage**.

Step 3 Select **Device Manager**.

Step 4 Select **Storage controllers** and expand it.

Step 5 Right-click **Cisco VIC-SNIC Adapter** from the devices list.

Step 6 Select **Upgrade** to start the **Hardware Update Wizard**.

Step 7 Select **Install from a list or specific location (Advanced)** and click **Next**.

Step 8 Select **Don't search. I will choose the driver to install.** and click **Next**.

Step 9 Click **Have Disk...**.

Step 10 Enter the path to the driver directory and click **OK**

Step 11 When the **Hardware Update Wizard** or **Select a Device Driver** dialog box opens, click **Next**.

Step 12 Click **Finish** on the **Hardware Update Wizard**.

CHAPTER **3**

Uninstalling Cisco UCS VIC Drivers

This chapter contains the following sections:

Uninstalling Windows Drivers

Procedure

Step 1 Start the **Device Manager**.
a) Right-click **My Computer**.
b) Choose **Manage**.
c) Choose **Device Manager**.

Step 2 Expand the adapter.

- For the eNIC driver, expand **Network Adapters**.

- For the fNIC driver, expand **Storage Controllers**.

Step 3 In the **Devices** list, right-click the adapter and select **Uninstall**.

- For the eNIC driver, right-click **Cisco VIC Ethernet Interface**.

- For the fNIC driver, right-click **Cisco VIC FCoE Storport Miniport**.

Step 4 In the **Confirm Device Removal** dialog box, click **OK**.

Uninstalling the NIC Teaming Driver

Procedure

Step 1   In Windows, open a command prompt with administrator privileges.

Step 2   At the command prompt, enter **enictool -u**
The Cisco NIC Teaming Driver is uninstalled.

Uninstalling the iSCSI Crash Dump Driver

Procedure

Step 1   Open a command prompt with administrator privileges.

Step 2   Enter the following command to uninstall the iSCSI Crash Dump Driver using the iSCSI Crash Dump Driver utility:
edumputil -u.

Step 3   Reboot the host.

Rolling back the sNIC Driver

Procedure

Step 1   Right-click **My Computer**.

Step 2   Click **Manage**.

Step 3   Select **Device Manager**.

Step 4   Select the device and right-click it.

Step 5   Select **Properties** and click **Driver**.

Step 6   In the **Driver** dialog box, click **Rollback driver**.

Removing the sNIC Driver

Procedure

Step 1   Right-click **My Computer**.

Step 2   Click **Manage**.

Step 3   Select **Device Manager**.

Step 4   Select **Storage controllers** and expand it.

Step 5   Right-click **Cisco VIC-SNIC Adapter** from the devices list.

Step 6   Select **Uninstall**.

Step 7   In the **Confirm Device Removal** dialog box click **OK**.