



## **Cisco UCS C-Series Servers Windows Installation Guide**

**First Published:** March 22, 2011

**Last Modified:** September 11, 2012

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## Preface

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This preface includes the following sections:

- [Audience, page v](#)
- [Conventions, page v](#)
- [Related Cisco UCS Documentation, page vi](#)
- [Documentation Feedback, page vii](#)

## Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security

## Conventions

This document uses the following conventions:

Convention	Indication
<b>bold font</b>	Commands, keywords, GUI elements, and user-entered text appear in <b>bold font</b> .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
<code>courierfont</code>	Terminal sessions and information that the system displays appear in <code>courier font</code> .

Convention	Indication
[ ]	Elements in square brackets are optional.
{x   y   z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x   y   z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<>	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



**Note**

Means *reader take note*.



**Tip**

Means *the following information will help you solve a problem*.



**Caution**

Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.



**Timesaver**

Means *the described action saves time*. You can save time by performing the action described in the paragraph.



**Warning**

Means *reader be warned*. In this situation, you might perform an action that could result in bodily injury.

## 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> .

#### **Other Documentation Resources**

An ISO file containing all B and C-Series documents is available at the following URL: <http://www.cisco.com/cisco/software/type.html?mdfid=283853163&flowid=25821> . From this page, click **Unified Computing System (UCS) Documentation Roadmap Bundle**.

The ISO file is updated after every major documentation release.

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# CHAPTER 1

## Installation Checklists and Prerequisites

This chapter includes the following sections:

- [Installation Overview Checklist, page 1](#)
- [Installation Prerequisites Checklist, page 2](#)
- [Mounting the Installation ISO Image, page 3](#)
- [Configuring the Server Boot Order Using the KVM Console, page 4](#)
- [Windows Server 2012 Requirements, page 5](#)

### Installation Overview Checklist

Complete the following tasks to install an operating system (OS) on your C-Series Rack-Mount Server.



**Note**

Cisco has developed the Cisco UCS Server Configuration Utility for C-Series Rack-Mount Servers, which can perform an unattended installation of some Window and Linux operating systems. This utility is shipped with new servers on the CD, and you can also download the ISO from Cisco.com. See the user documentation for the latest release of this utility at the following URL: [http://www.cisco.com/en/US/products/ps10493/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html)

Completed?	Task	Additional Information
	Complete the prerequisites described in <a href="#">Installation Prerequisites Checklist, on page 2</a> .	For more information about installation or licensing requirements, see the documentation for the operating system you are going to install.
	Launch the <b>KVM Console</b> and mount the installation media.	For details, see <a href="#">Mounting the Installation ISO Image, on page 3</a> .

Completed?	Task	Additional Information
	Complete the installation as described in the procedure for your OS.	<p>For details, see one of the following:</p> <ul style="list-style-type: none"> <li>• <a href="#">Installing Windows Server 2003 on an Internal Drive, on page 7</a></li> <li>• <a href="#">Installing Windows Server 2003 on a Bootable SAN LUN, on page 9</a></li> <li>• <a href="#">Installing Windows Server 2012 and Windows Server 2008 on an Internal Drive, on page 13</a></li> <li>• <a href="#">Installing Windows Server 2012 and Windows Server 2008 on a Bootable SAN LUN, on page 15</a></li> </ul>

## Installation Prerequisites Checklist

Before you begin installing the operating system (OS), make sure that you have the following items or have completed the following tasks:

Completed?	Prerequisite
	<p>Make sure the installation-target server supports the version of the operating system (OS) you plan to install.</p> <p>For the supported versions, see the appropriate PDF or use the interactive <i>UCS Hardware and Software Interoperability Utility</i>. Both are available at the following URL: <a href="http://www.cisco.com/web/techdoc/ucs/interoperability/matrix/matrix.html">http://www.cisco.com/web/techdoc/ucs/interoperability/matrix/matrix.html</a>.</p>
	<p>Make sure you have a configured IP address for CIMC GUI, as well as a login account with administration privileges.</p>
	<p>Make sure you have the installation media for the OS, either on a DVD or as an ISO image. If the software requires an activation key, make sure you have that information as well.</p> <p><b>Tip</b> We recommend that you install the OS by placing the installation disk into the DVD drive because it is comparatively faster than using an ISO image. However, steps are also provided for mapping an ISO image as a virtual disk.</p>

Completed?	Prerequisite
	<p>Make sure you have the <i>Cisco UCS C-Series Drivers DVD</i>, or the ISO image of this DVD, for the type of C-Series server that you are using.</p> <p>The <i>Cisco UCS C-Series Drivers DVD</i> ISO image is available from the Cisco.com support site under <b>Unified Computing and Servers &gt; Cisco UCS Rack-Mount Standalone Server Software &gt; server_model Server Software &gt; Unified Computing System (UCS) Drivers</b>.</p> <p>To view the list of available server models, go to the following URL: <a href="http://www.cisco.com/cisco/software/navigator.html?mdfid=283612685&amp;flowid=26802">http://www.cisco.com/cisco/software/navigator.html?mdfid=283612685&amp;flowid=26802</a>.</p> <p><b>Note</b> If you download the ISO image, you need to burn the image to a DVD or use a third-party utility to mount the image on a laptop hard drive.</p> <p>During the installation, you will need to extract the appropriate driver image file from this DVD to a location accessible to the server so that it can be mounted as a virtual floppy.</p>
	<p>If your server has an LSI MegaRAID controller, configure RAID settings for the drives in your server. If you do not configure your LSI MegaRAID LUNs before installing the OS, disk discovery failures might occur during the installation and you may see error messages such as “No Device Found.”</p>

## Mounting the Installation ISO Image

### Before You Begin

Make sure you have completed the prerequisites described in [Installation Prerequisites Checklist](#), on page 2.

### Procedure

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- Step 1** In your web browser, type or select the web link for CIMC GUI.
  - Step 2** In the login window, enter your administrator username and password. The default username is admin and the default password is password.
  - Step 3** In the **Navigation** pane, click **Remote Presence** on the **Server** tab.
  - Step 4** (Optional) If you are going to use any virtual media, such as an ISO installation image or a driver IMG file, do the following:
    - a) Go to the **Virtual Media** tab in the **Work** pane.
    - b) If the **Enabled** check box in the **Virtual Media Properties** area is not checked, check it.
    - c) If you changed the settings, click **Save Changes**.
  - Step 5** Go to the **Virtual KVM** tab in the **Work** pane.
  - Step 6** If the **Enabled** check box in the **vKVM Properties** area is not checked, check it and click **Save Changes**.
  - Step 7** Click **Launch KVM Console** in the **Actions** area.

CIMC GUI opens the **KVM Console** in a separate window.

- Step 8** How you access virtual media depends on the version of the **KVM Console** that you are using. Do one of the following to access virtual media:
- Click the **Virtual Media** tab.
  - Click the **VM** tab.
  - Select **Tools > Virtual Media**.
- Step 9** Click **Add Image** and navigate to the directory containing the installation ISO image.
- Step 10** Select the ISO image file and click **Open**.
- Step 11** In the **Client View** area, check the check box in the **Mapped** column associated with the ISO file, then wait for mapping to complete.
- Tip** Click **Details** to see the mapping progress.

### What to Do Next

Install the OS as described in the installation procedure that matches the OS you are installing.

## Configuring the Server Boot Order Using the KVM Console



**Note** If you want to configure the boot order using CIMC GUI or CIMC CLI, see the GUI or CLI *Cisco Integrated Management Controller Configuration Guide* for the version of CIMC that you are using. The configuration guides are available at the following URL: [http://www.cisco.com/en/US/products/ps10739/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps10739/products_installation_and_configuration_guides_list.html)

### Procedure

- Step 1** If it is not already open, launch the **KVM Console**.
- Step 2** Reboot the server.
- Step 3** In the **KVM** tab of the **KVM Console**, watch the boot messages and press F2 when prompted to enter BIOS setup.
- Note** After you press F2, there is a small time interval before the BIOS setup utility is displayed because the server continues to initialize devices. It displays the utility only after initialization is complete.
- Step 4** On the BIOS setup utility screen, click the **Boot Options** tab.
- Step 5** Perform the following steps based on how your system is configured:

Install Type	Description
Internal install on a single hard drive system	<ol style="list-style-type: none"> <li>1 Select <b>Boot Option #1</b> and press Enter.</li> <li>2 In the pop-up menu, select the installation-target drive and press Enter.</li> </ol>

Install Type	Description
Internal install on a multiple hard drive system	<ol style="list-style-type: none"> <li>1 On the <b>Boot Options</b> tab, select <b>Hard Disk Order</b> and press Enter.</li> <li>2 On the <b>Hard Disk Order</b> tab, select <b>Boot Option #1</b> and press Enter.</li> <li>3 In the pop-up menu, select the installation-target drive and press Enter.</li> <li>4 Press Esc to return to the main <b>Boot Options</b> tab.</li> </ol>
Install on a Bootable SAN LUN	<ol style="list-style-type: none"> <li>1 On the <b>Boot Options</b> tab, select <b>Hard Disk Order</b> and press Enter.</li> <li>2 On the <b>Hard Disk Order</b> tab, select <b>Boot Option #1</b> and press Enter.</li> <li>3 In the pop-up menu, select the installation target SAN LUN and press Enter.</li> <li>4 Press Esc to return to the main <b>Boot Options</b> tab.</li> </ol>

**Step 6** Press F10 to save your changes and reboot the server.

## Windows Server 2012 Requirements

To enable Windows Server 2012 support on certain Cisco UCS C-Series Rack-Mount Servers, you must update the BIOS settings.

Cisco UCS C-Series Rack-Mount Servers	BIOS changes required
<ul style="list-style-type: none"> <li>• C200 M1 Server</li> <li>• C210 M1 Server</li> <li>• C250 M1 Server</li> </ul>	See <a href="#">Enabling Windows Server 2012 Support for the C200, C210, and C250 Servers</a> , on page 5.
<ul style="list-style-type: none"> <li>• C260 M2 Server</li> <li>• C460 M1 Server</li> <li>• C460 M2 Server</li> </ul>	See <a href="#">Enabling Windows Server 2012 Support for the C260 and C460 Servers</a> , on page 6.

## Enabling Windows Server 2012 Support for the C200, C210, and C250 Servers

This procedure describes how to enable Windows Server 2012 support.

### Procedure

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- Step 1** If it is not already open, launch the **KVM Console**.
- Step 2** Reboot the server.
- Step 3** In the **KVM** tab of the **KVM Console**, watch the boot messages and press F2 when prompted to enter BIOS setup.
- Note** After you press F2, there is a small time interval before the BIOS setup utility is displayed because the server continues to initialize devices. It displays the utility only after initialization is complete.
- Step 4** On the BIOS setup utility screen, click the **Advanced** tab.
- Step 5** Select **PCI Configuration** and press Enter.
- Step 6** On the **PCI Configuration** tab, select **SR-IOV** and press Enter.
- Step 7** In the pop-up menu, select Enabled and press Enter.
- Step 8** Press F10 to save your changes and reboot the server.
- 

## Enabling Windows Server 2012 Support for the C260 and C460 Servers

This procedure describes how to enable Windows Server 2012 support.

### Procedure

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- Step 1** If it is not already open, launch the **KVM Console**.
- Step 2** Reboot the server.
- Step 3** In the **KVM** tab of the **KVM Console**, watch the boot messages and press F2 when prompted to enter BIOS setup.
- Note** After you press F2, there is a small time interval before the BIOS setup utility is displayed because the server continues to initialize devices. It displays the utility only after initialization is complete.
- Step 4** On the BIOS setup utility screen, click the **Advanced** tab.
- Step 5** Select **PCI Configuration** and press Enter.
- Step 6** On the **PCI Configuration** tab, select **SR-IOV** and press Enter.
- Step 7** In the pop-up menu, select Enabled and press Enter.
- Step 8** Press Escape to return to the **Advanced** tab.
- Step 9** Select **ACPI Configuration** and press Enter.
- Step 10** On the **ACPI Configuration** tab, select **ACPI \_OSC Enable** and press Enter.
- Step 11** In the pop-up menu, select Enabled and press Enter.
- Step 12** Press F10 to save your changes and reboot the server.
-



## CHAPTER 2

# Windows Server 2003 Installation

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This chapter includes the following sections:

- [Installing Windows Server 2003 on an Internal Drive, page 7](#)
- [Installing Windows Server 2003 on a Bootable SAN LUN, page 9](#)

## Installing Windows Server 2003 on an Internal Drive

This section describes how to install Windows Server 2003 with Service Pack 2 (SP2) x86 or x64 on an internal drive using CIMC GUI and the **KVM Console**.

Other versions of Windows Server 2003 are not supported.



### Note

Cisco has developed the Cisco UCS Server Configuration Utility for C-Series Rack-Mount Servers, which can perform an unattended installation of some Windows and Linux operating systems. This utility is shipped with new servers on the CD, and you can also download the ISO from Cisco.com. See the user documentation for the latest release of this utility at the following URL: [http://www.cisco.com/en/US/products/ps10493/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html)

### Before You Begin

Make sure you have completed the prerequisites described in [Installation Prerequisites Checklist, on page 2](#).

### Procedure

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- Step 1** Find the drivers for your installed devices on the *Cisco UCS C-Series Drivers DVD* or in the DVD ISO file and extract them to a location that the server can access.
- Tip** If you do not know which drivers are required, reboot the server and read the output messages. As the devices are initialized, the boot process displays information about them. For more information, see [Installation Driver Information, on page 19](#).

- Step 2** If you are installing the OS or drivers from virtual media, launch the **KVM Console** and mount the media as described in [Mounting the Installation ISO Image, on page 3](#).
- Step 3** Mount the driver IMG image file for your mass storage controller or SAN HBA device:
- Click **Add Image** and navigate to the directory containing the driver IMG image file for your device and operating system.
  - Select the IMG image file and click **Open**.
  - When prompted whether you want to emulate the device as a floppy, click **Yes**.
  - In the **Client View** area, check the check box in the **Mapped** column associated with the IMG virtual floppy, then wait for mapping to complete.
- Step 4** Power cycle the server using one of the following methods:
- In the **KVM Console**, go to the **KVM** tab and select **Macros > Ctrl-Alt-Del**.
  - In CIMC GUI, click **Summary** in the **Navigation** pane, then click **Power Cycle Server** in the **Actions** area of the **Server Summary** tab.
  - On the physical server, press the Power button.
- Step 5** (Optional) If you want to set the boot order that the server will use after the OS is installed, watch the boot messages and press F2 when prompted to enter BIOS setup, then set the boot order. For details, see [Configuring the Server Boot Order Using the KVM Console, on page 4](#).
- Step 6** To override the normal boot order and boot from the installation media, in the **KVM** tab of the **KVM Console**, watch the boot messages and press F6 when prompted to enter the Boot Menu.
- Step 7** On the **Boot Menu** screen, do one of the following:
- If you are using an ISO image, select **Cisco Virtual CD/DVD** and press Enter.
  - If you are using a physical install disk, select the disk drive in which that disk resides and press Enter.
- The server reboots from the selected device and begins installing the OS from the image or disk.
- Step 8** Press Enter when prompted to boot from CD. Watch carefully for the `Press F6 to install third-party drivers` prompt that is displayed early in the installation process at the bottom of the window.
- Step 9** Install the mass storage controller or HBA device drivers from the virtual floppy:
- Press F6 when prompted to install third-party drivers. Continue to watch the installation process until you are prompted to specify an additional device.
  - Press S when prompted to specify an additional device.
  - Select your device from the list and press Enter.  
The drivers are installed from the virtual floppy.
- Step 10** Complete the installation according to the requirements and standards of your company by continuing to monitor the installation progress and answering prompts as required. After the Windows installation is complete, Windows reboots the server again and you are prompted to press Ctrl-Alt-Del and log in to access the Windows desktop. Use the login credentials that you supplied during the Windows installation process.



**Note** At this point, Windows still needs device drivers installed for devices such as the server chipset and Ethernet controllers. In the **Windows Device Manager**, devices that still need drivers are marked with yellow flags.

**Step 11** Use **Windows File Manager** to navigate to the folder into which you extracted the Cisco drivers in Step 1. For details about the driver DVD folder structure, see [Windows Installation Drivers](#), on page 19.

**Tip** If you experience slow performance when using Windows Server 2008 R2, get the latest drivers for the onboard Intel 82576 NIC directly from the Intel site: <http://downloadcenter.intel.com>.

**Step 12** Launch the **Windows Device Manager** and look for any devices that still have yellow flags. For each such device, install the driver manually through the **Device Manager**.

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## Installing Windows Server 2003 on a Bootable SAN LUN

This procedure describes how to install Windows Server 2003 with Service Pack 2 (SP2) x86 or x64 on a bootable SAN LUN using CIMC GUI and the **KVM Console**.



### Note

Cisco has developed the Cisco UCS Server Configuration Utility for C-Series Rack-Mount Servers, which can perform an unattended installation of some Window and Linux operating systems. This utility is shipped with new servers on the CD, and you can also download the ISO from Cisco.com. See the user documentation for the latest release of this utility at the following URL: [http://www.cisco.com/en/US/products/ps10493/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html)

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### Before You Begin

- Make sure you have completed the prerequisites described in [Installation Prerequisites Checklist](#), on page 2.
- Configure a LUN or RAID volume on your SAN, then connect to the SAN and verify that one (and only one) path exists from the SAN HBA to the LUN.

If you are using a RAID controller, see [RAID Controller Considerations](#), on page 21 for more information.

### Procedure

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**Step 1** Find the drivers for your installed devices on the *Cisco UCS C-Series Drivers DVD* or in the DVD ISO file and extract them to a location that the server can access.

**Tip** If you do not know which drivers are required, reboot the server and read the output messages. As the devices are initialized, the boot process displays information about them. For more information, see [Installation Driver Information](#), on page 19.

**Step 2** If you are installing the OS or drivers from virtual media, launch the **KVM Console** and mount the media as described in [Mounting the Installation ISO Image](#), on page 3.

**Step 3** Mount the driver IMG image file for your mass storage controller or SAN HBA device:

- a) Click **Add Image** and navigate to the directory containing the driver IMG image file for your device and operating system.

- b) Select the IMG image file and click **Open**.
- c) When prompted whether you want to emulate the device as a floppy, click **Yes**.
- d) In the **Client View** area, check the check box in the **Mapped** column associated with the IMG virtual floppy, then wait for mapping to complete.

**Step 4** Power cycle the server using one of the following methods:

- In the **KVM Console**, go to the **KVM** tab and select **Macros > Ctrl-Alt-Del**.
- In CIMC GUI, click **Summary** in the **Navigation** pane, then click **Power Cycle Server** in the **Actions** area of the **Server Summary** tab.
- On the physical server, press the Power button.

**Step 5** (Optional) If you want to set the boot order that the server will use after the OS is installed, watch the boot messages and press F2 when prompted to enter BIOS setup, then set the boot order. For details, see [Configuring the Server Boot Order Using the KVM Console, on page 4](#).

**Step 6** To override the normal boot order and boot from the installation media, in the **KVM** tab of the **KVM Console**, watch the boot messages and press F6 when prompted to enter the Boot Menu.

**Step 7** On the **Boot Menu** screen, do one of the following:

- If you are using an ISO image, select **Cisco Virtual CD/DVD** and press Enter.
- If you are using a physical install disk, select the disk drive in which that disk resides and press Enter.

The server reboots from the selected device and begins installing the OS from the image or disk.

**Step 8** Press Enter when prompted to boot from CD. Watch carefully for the `Press F6 to install third-party drivers` prompt that is displayed early in the installation process at the bottom of the window.

**Step 9** Install the mass storage controller or HBA device drivers from the virtual floppy:

- a) Press F6 when prompted to install third-party drivers. Continue to watch the installation process until you are prompted to specify an additional device.
- b) Press S when prompted to specify an additional device.
- c) Select your device from the list and press Enter.  
The drivers are installed from the virtual floppy.

**Step 10** Complete the installation according to the requirements and standards of your company by continuing to monitor the installation progress and answering prompts as required. After the Windows installation is complete, Windows reboots the server again and you are prompted to press Ctrl-Alt-Del and log in to access the Windows desktop. Use the login credentials that you supplied during the Windows installation process.

**Note** At this point, Windows still needs device drivers installed for devices such as the server chipset and Ethernet controllers. In the **Windows Device Manager**, devices that still need drivers are marked with yellow flags.

**Step 11** Use **Windows File Manager** to navigate to the folder into which you extracted the Cisco drivers in Step 1. For details about the driver DVD folder structure, see [Windows Installation Drivers, on page 19](#).

**Tip** If you experience slow performance when using Windows Server 2008 R2, get the latest drivers for the onboard Intel 82576 NIC directly from the Intel site: <http://downloadcenter.intel.com>.

**Step 12** Launch the **Windows Device Manager** and look for any devices that still have yellow flags. For each such device, install the driver manually through the **Device Manager**.

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## CHAPTER 3

# Windows Server 2012 and Windows Server 2008 Installation

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This chapter includes the following sections:

- [Installing Windows Server 2012 and Windows Server 2008 on an Internal Drive](#), page 13
- [Installing Windows Server 2012 and Windows Server 2008 on a Bootable SAN LUN](#), page 15

## Installing Windows Server 2012 and Windows Server 2008 on an Internal Drive

This procedure describes how to install Windows Server 2012, Windows Server 2008 x64, or Windows Server 2008 R2 x64 and required drivers on an internal drive using CIMC GUI and the **KVM Console**.



### Note

Cisco has developed the Cisco UCS Server Configuration Utility for C-Series Rack-Mount Servers, which can perform an unattended installation of some Windows and Linux operating systems. This utility is shipped with new servers on the CD, and you can also download the ISO from Cisco.com. See the user documentation for the latest release of this utility at the following URL: [http://www.cisco.com/en/US/products/ps10493/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html)

### Before You Begin

Make sure you have completed the prerequisites described in [Installation Prerequisites Checklist](#), on page 2.



### Important

If you have a Cisco UCS C200 or C210 rack-mount server with a Intel Quad port GbE HBA adapter, you must uninstall it before you install Windows 2012 or Windows 2008 R2 on the server. You may reinstall it later, but if the adapter is present during Windows installation, the installation will fail citing an unexpected error.

## Procedure

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- Step 1** Find the drivers for your installed devices on the *Cisco UCS C-Series Drivers DVD* or in the DVD ISO file and extract them to a location that the server can access.
- Tip** If you do not know which drivers are required, reboot the server and read the output messages. As the devices are initialized, the boot process displays information about them. For more information, see [Installation Driver Information](#), on page 19.
- Step 2** If you are installing the OS or drivers from virtual media, launch the **KVM Console** and mount the media as described in [Mounting the Installation ISO Image](#), on page 3.
- Step 3** Power cycle the server using one of the following methods:
- In the **KVM Console**, go to the **KVM** tab and select **Macros > Ctrl-Alt-Del**.
  - In CIMC GUI, click **Summary** in the **Navigation** pane, then click **Power Cycle Server** in the **Actions** area of the **Server Summary** tab.
  - On the physical server, press the Power button.
- Step 4** (Optional) If you want to set the boot order that the server will use after the OS is installed, watch the boot messages and press F2 when prompted to enter BIOS setup, then set the boot order. For details, see [Configuring the Server Boot Order Using the KVM Console](#), on page 4.
- Step 5** To override the normal boot order and boot from the installation media, in the **KVM** tab of the **KVM Console**, watch the boot messages and press F6 when prompted to enter the Boot Menu.
- Step 6** On the **Boot Menu** screen, do one of the following:
- If you are using an ISO image, select **Cisco Virtual CD/DVD** and press Enter.
  - If you are using a physical install disk, select the disk drive in which that disk resides and press Enter.
- The server reboots from the selected device and begins installing the OS from the image or disk.
- Step 7** Press Enter when prompted to boot from CD. Answer the installation questions according to the requirements and standards of your company until the **Where do you want to install Windows?** screen displays, then go to the next step.
- Step 8** When Windows displays the **Where do you want to install Windows?** screen, mount the Cisco driver ISO image so that you can install the basic drivers before you install Windows. To do so:
- a) Return to the **VM** tab or **Virtual Media Session** dialog box in the **KVM Console**.
  - b) Because you can only have one virtual CD/DVD mapped at a time, unmap any existing virtual CD/DVD connections by clearing the check box associated with that connection.
 

**Tip** To verify that you can create a new connection, look at the **Details** table. The first line should show that the **Virtual CD/DVD** is not mapped.
  - c) Click **Add Image** and navigate to the directory containing the Cisco driver ISO image for you mass storage or HBA device.
  - d) Select the ISO image file and click **Open**.
  - e) In the **Client View** area, check the check box in the **Mapped** column associated with the ISO file, then wait for mapping to complete.
  - f) Return to the Windows installation prompt in the **KVM** tab.
- Step 9** Install the drivers:
- a) In the **Where do you want to install Windows?** screen, click the **Load Driver** link below the table.

- b) In the **Load Driver** dialog box, click **Browse**.
  - c) Navigate to the appropriate folder on the virtual DVD device that you just mapped and select the drivers you want to install.
  - d) Click **OK**.  
When Windows has finished loading the drivers, it displays the **Select the driver to install** dialog box with the new drivers listed.
  - e) Select the driver for your device and click **Next**. Wait until the driver installation is complete, as indicated by the Windows status bar.
- Step 10** (Optional) If you are installing Windows from an ISO image file, unmap the driver ISO image and remap the Windows installation image:
- a) Return to the **VM** tab or **Virtual Media Session** dialog box in the **KVM Console**.
  - b) In the **Client View** area, clear the check box in the **Mapped** column that corresponds to the driver ISO file.
  - c) Check the check box in the **Mapped** column that corresponds to your Windows installation image, then wait for mapping to complete.
  - d) Return to the Windows installation prompt in the **KVM** tab.
  - e) (Optional) If the installation procedure displays an error stating that it cannot continue because it cannot find the installation disk, click **Refresh** at the bottom of the screen to have the installation procedure refresh the connection with the installation ISO image.
- Step 11** In the **Where do you want to install Windows?** screen, select the disk or partition in which you want to install Windows and click **Next**.
- Step 12** Complete the installation according to the requirements and standards of your company by continuing to monitor the installation progress and answering prompts as required.  
After the Windows installation is complete, Windows reboots the server again and you are prompted to press Ctrl-Alt-Del and log in to access the Windows desktop. Use the login credentials that you supplied during the Windows installation process.
- Note** At this point, Windows still needs device drivers installed for devices such as the server chipset and Ethernet controllers. In the **Windows Device Manager**, devices that still need drivers are marked with yellow flags.
- Step 13** Use **Windows File Manager** to navigate to the folder into which you extracted the Cisco drivers in Step 1. For details about the driver DVD folder structure, see [Windows Installation Drivers](#), on page 19.
- Tip** If you experience slow performance when using Windows Server 2008 R2, get the latest drivers for the onboard Intel 82576 NIC directly from the Intel site: <http://downloadcenter.intel.com>.
- Step 14** Launch the **Windows Device Manager** and look for any devices that still have yellow flags. For each such device, install the driver manually through the **Device Manager**.
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## Installing Windows Server 2012 and Windows Server 2008 on a Bootable SAN LUN

This section describes how to install Windows Server 2012, Windows Server 2008 x64, or Windows Server 2008 R2 x64 and required drivers on a bootable SAN LUN using CIMC GUI and the **KVM Console**.

**Note**

Cisco has developed the Cisco UCS Server Configuration Utility for C-Series Rack-Mount Servers, which can perform an unattended installation of some Windows and Linux operating systems. This utility is shipped with new servers on the CD, and you can also download the ISO from Cisco.com. See the user documentation for the latest release of this utility at the following URL: [http://www.cisco.com/en/US/products/ps10493/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html)

**Before You Begin**

- Make sure you have completed the prerequisites described in [Installation Prerequisites Checklist](#), on page 2.
- Configure a LUN or RAID volume on your SAN, then connect to the SAN and verify that one (and only one) path exists from the SAN HBA to the LUN.

If you are using a RAID controller, see [RAID Controller Considerations](#), on page 21 for more information.

**Important**

If you have a Cisco UCS C200 or C210 rack-mount server with a Intel Quad port GbE HBA adapter, you must uninstall it before you install Windows 2012 or Windows 2008 R2 on the server. You may reinstall it later, but if the adapter is present during Windows installation, the installation will fail citing an unexpected error.

**Procedure**

- Step 1** Find the drivers for your installed devices on the *Cisco UCS C-Series Drivers DVD* or in the DVD ISO file and extract them to a location that the server can access.
- Tip** If you do not know which drivers are required, reboot the server and read the output messages. As the devices are initialized, the boot process displays information about them. For more information, see [Installation Driver Information](#), on page 19.
- Step 2** If you are installing the OS or drivers from virtual media, launch the **KVM Console** and mount the media as described in [Mounting the Installation ISO Image](#), on page 3.
- Step 3** Power cycle the server using one of the following methods:
- In the **KVM Console**, go to the **KVM** tab and select **Macros > Ctrl-Alt-Del**.
  - In CIMC GUI, click **Summary** in the **Navigation** pane, then click **Power Cycle Server** in the **Actions** area of the **Server Summary** tab.
  - On the physical server, press the Power button.
- Step 4** (Optional) If you want to set the boot order that the server will use after the OS is installed, watch the boot messages and press F2 when prompted to enter BIOS setup, then set the boot order. For details, see [Configuring the Server Boot Order Using the KVM Console](#), on page 4.
- Step 5** To override the normal boot order and boot from the installation media, in the **KVM** tab of the **KVM Console**, watch the boot messages and press F6 when prompted to enter the Boot Menu.
- Step 6** On the **Boot Menu** screen, do one of the following:



- If you are using an ISO image, select **Cisco Virtual CD/DVD** and press Enter.
- If you are using a physical install disk, select the disk drive in which that disk resides and press Enter.

The server reboots from the selected device and begins installing the OS from the image or disk.

**Step 7** Press Enter when prompted to boot from CD. Answer the installation questions according to the requirements and standards of your company until the **Where do you want to install Windows?** screen displays, then go to the next step.

**Step 8** Complete the installation according to the requirements and standards of your company by continuing to monitor the installation progress and answering prompts as required. After the Windows installation is complete, Windows reboots the server again and you are prompted to press Ctrl-Alt-Del and log in to access the Windows desktop. Use the login credentials that you supplied during the Windows installation process.

**Note** At this point, Windows still needs device drivers installed for devices such as the server chipset and Ethernet controllers. In the **Windows Device Manager**, devices that still need drivers are marked with yellow flags.

**Step 9** Use **Windows File Manager** to navigate to the folder into which you extracted the Cisco drivers in Step 1. For details about the driver DVD folder structure, see [Windows Installation Drivers](#), on page 19.

**Tip** If you experience slow performance when using Windows Server 2008 R2, get the latest drivers for the onboard Intel 82576 NIC directly from the Intel site: <http://downloadcenter.intel.com>.

**Step 10** Launch the **Windows Device Manager** and look for any devices that still have yellow flags. For each such device, install the driver manually through the **Device Manager**.

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# APPENDIX A

## Installation Driver Information

This appendix includes the following sections:

- [Windows Installation Drivers, page 19](#)

## Windows Installation Drivers

The required installation drivers and detailed driver information is available on the *Cisco UCS C-Series Drivers DVD*.



### Note

The *Cisco UCS C-Series Drivers DVD* ISO image is available from the Cisco.com support site under **Unified Computing and Servers > Cisco UCS Rack-Mount Standalone Server Software > server\_model Server Software > Unified Computing System (UCS) Drivers**.

To view the list of available server models, go to the following URL: <http://www.cisco.com/cisco/software/navigator.html?mdfid=283612685&flowid=26802>.

The drivers are organized into top-level folders by operating system, and each operating system folder has a hierarchically structured series of subfolders that become increasing specific so that you can find the exact drivers you need. When you navigate to a folder that contains drivers, it will also contain one or more README files that describes what those particular drivers are used for.

An example of the folder structure for Windows follows:

```
Windows
  ChipSet
    vendor
      blade-model-number
      OS-version-number
      All
      ia64
      Lang (contains language subfolders)
      Vista
      x64
  Mgmt
    Emulex
      model-number
      ElxPlus
      OS-version-number
      x64
  Network
```

```
    vendor
      model-number
        OS-version-number
          x64
Security
  TPM
    OS-version-number
      x64
Storage
  vendor
    model-number
      OS-version-number
        x64
Video
  Matrox
    G200e
      OS-version-number
        x64
```

For example, the Windows Server 2008 Release 2 drivers for the Cisco UCS M81KR Virtual Interface Card can be found in the folder `Windows/Network/Cisco/M81KR/W2K8R2/x64`.



## APPENDIX **B**

# RAID Controller Considerations

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This appendix includes the following sections:

- [RAID Controller Options, page 21](#)

## RAID Controller Options

For information about supported RAID controller hardware in each Cisco UCS C-Series Rack-Mount Servers, refer to the "RAID Controller Considerations" appendix in each platform Installation and Service Guide. See the link for the guide for your platform in the *Cisco UCS C-Series Servers Documentation Roadmap*, located at:

[http://www.cisco.com/en/US/docs/unified\\_computing/ucs/overview/guide/UCS\\_rack\\_roadmap.html](http://www.cisco.com/en/US/docs/unified_computing/ucs/overview/guide/UCS_rack_roadmap.html)

For information about using the controllers and their utilities, see the [Cisco UCS Servers RAID Guide](#).

