Install Windows 7* on USB 3.0 Computers

User Guide

August 2018
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# Revision History

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<tr>
<th>Date</th>
<th>Revision</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2018</td>
<td>1.0</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>
1.0 Introduction

Windows 7 installation media doesn't include native driver support for USB 3.0. When installing Windows 7, on the screen to select your preferred language, a keyboard or mouse connected to a USB 3.0 port doesn't respond. Any Intel® NUC that has only USB 3.0 ports is affected.

This document describes two methods to resolve the problem:

- DISM Graphical User Interface (GUI) Tool
- DISM Command Line Tool
2.0 DISM Graphical User Interface (GUI) Tool

The DISM Graphical User Interface (GUI) Tool updates a Windows 7 installation image so that it contains USB 3.0 drivers.

2.1 Assumptions

- You have a valid copy of Windows 7 on ISO or DVD.
- You have Administrator access to another working computer (the Admin system) with Windows 7 or later to follow these steps.
- The Admin system has .NET Framework 4.0 installed.
- The Admin system has at least 10GB free disk space.
- You've downloaded and installed the DISM GUI from https://dismgui.codeplex.com/.

2.2 Create the USB Flash Drive Installer

1. Use your Windows 7 DVD or ISO image to create a bootable USB flash drive. Instructions on how to do so are found on Microsoft's site.
2. Leave the flash drive connected to your administrator console system.

2.3 Copy install.wim and boot.wim to the Admin System

1. Create a temporary working directory on the Admin system, such as C:\WIM.
2. Create a mount point under your working directory: C:\WIM\MOUNT.
3. Locate the boot.wim and install.wim image files in the \sources directory on your Windows 7 flash drive.
4. Copy both these files to your working directory. We recommend you make a second unmodified copy of these files.

2.4 Get the Latest USB 3.0 Drivers

1. Download the current USB 3.0 drivers for your Intel NUC from Download Center to the Admin system.
2. Extract but don’t install the USB 3.0 driver package.
3. Create a driver folder in your working directory for the 64-bit drivers (C:\WIM\USB3\).
4. Copy the x64 folder from the extracted files to that location (C:\WIM\USB3\x64\).
2.5 Run the DISM GUI Tool

Right-click on DISM GUI.exe and select Run as Administrator. Follow these steps:

1. **Mount install.wim Image**
   a) On the Mount Control tab, click the **Choose WIM** button.
   b) Navigate to where you copied install.wim (C:\WIM, for example) and click **Open**.
   c) Choose the index number for the version of Windows 7 you have from the drop-down list under **Index**.
      1 = Home Basic
      2 = Home Premium
      3 = Professional
      4 = Ultimate
   d) Click the **Choose Folder** button for the Mount Location. Browse to the proper folder (C:\WIM\MOUNT, for example) and click **OK**.
   e) Verify the **Read Only** checkbox is clear and click the **Mount WIM** button.

![DISM GUI Tool](image)

The mounting process may take a few minutes, depending upon the speed of the Admin system and the size of the install.wim file.
2. **Add USB 3.0 Drivers to install.wim Image**
   a) On the **Driver Management** tab, click the **Choose Driver Folder** button.
   b) Select the location of your USB 3.0 drivers and click **OK**.
   c) Verify the **Recurse** checkbox is selected.
   d) If your drivers are unsigned or reported to be unsigned, select the **Force Unsigned** checkbox.
   e) Click the **Add Drivers** button.

3. **Commit Changes to install.wim Image and Unmount**
   a) On the **Mount Control** tab, click the **Dismount WIM** button.
   b) Select **Yes** to commit the changes. This may take a few minutes.
4. **Mount boot.wim Image Index 1 (Windows PE)**

   a) On the **Mount Control** tab, click the **Choose WIM** button.
   
   b) Navigate to where you copied boot.wim (C:\WIM in the example) and click **Open**.
   
   c) Choose index number 1 (for Windows PE) from the drop-down list under **Index**.
   
   d) The Mount Location should still contain the appropriate folder. If not, click the **Choose Folder** button for the Mount Location. Browse to the proper folder (C:\WIM\MOUNT, for example) and click **OK**.
   
   e) Verify the **Read Only** checkbox is clear and click the **Mount WIM** button.
5. Add USB 3.0 Drivers to boot.wim Image
   a) On the Driver Management tab, all options should still be set up from adding them to the previous image. If not, click the Choose Driver Folder button. Select the location of your USB 3.0 drivers and click OK.
   b) Verify the Recurse checkbox is selected.
   c) If your drivers are unsigned or reported to be unsigned, select the Force Unsigned checkbox.
   d) Click the Add Drivers button.

6. Commit Changes to boot.wim Image and Unmount
   a) On the Mount Control tab, click the Dismount WIM button.
   b) Select Yes to commit the changes. This will take about 30 seconds to finish.
7. Mount boot.wim Image Index 2 (Windows Setup)
   a) On the Mount Control tab, you should see boot.wim still listed as the WIM file from the previous step. If not, click the Choose WIM button. Navigate to where you copied boot.wim (C:\WIM, for example) and click Open.
   b) Choose index number 2 (for Windows Setup) from the drop-down list under Index.
   c) The Mount Location should still contain the appropriate folder. If not, click the Choose Folder button for the Mount Location. Browse to the proper folder (C:\WIM\MOUNT, for example) and click OK.
   d) Verify the Read Only checkbox is clear and click the Mount WIM button.
8. **Add USB 3.0 Drivers to boot.wim Image**
   a) On the Driver Management tab, all options should still be set up from adding them to the previous image. If not, click the **Choose Driver Folder** button. Select the location of your USB 3.0 drivers and click **OK**.
   b) Verify the **Recurse** checkbox is selected.
   c) If your drivers are unsigned or reported to be unsigned, select the **Force Unsigned** checkbox.
   d) Click the **Add Drivers** button.

9. **Commit Changes to boot.wim Image and Unmount**
   a) On the Mount Control tab, click the **Dismount WIM** button.
   b) Select **Yes** to commit the changes. This will take about 30 seconds to finish.
10. Copy Modified WIM files Back to the USB Flash Drive Installer
   a) Copy the newly modified install.wim and boot.wim files back to the \sources directory of the Windows 7 USB Flash Drive Installer, overwriting the original files.
   b) Eject and remove the USB Flash Drive from the Admin system.

2.6 Install Windows 7 on the Target Computer

Using the updated installer, proceed with the Windows 7 installation as you normally would.
3.0 **DISM Command Line Tool**

The DISM Command Line Tool updates a Windows 7 installation image so that it contains USB 3.0 drivers.

3.1 **Assumptions**

- You have a valid copy of Windows 7 on ISO or DVD.
- You have Administrator access to another working computer (the Admin system) with Windows 7 or later to follow these steps.
- The Admin system has at least 10GB free disk space.

3.2 **Create the USB Flash Drive Installer**

1. Use your Windows 7 DVD or ISO image to create a bootable USB flash drive. Instructions on how to do are found on [Microsoft's site](#).
2. Leave the flash drive connected to your administrator console system.

3.3 **Copy install.wim and boot.wim to the Admin System**

1. Create a temporary working directory on the Admin system, such as `C:\WIM`.
2. Create a mount point under your working directory: `C:\WIM\MOUNT`.
3. Locate the boot.wim and install.wim image files in the `\sources` directory on your Windows 7 flash drive.
4. Copy both these files to your working directory. **We recommend you make a second unmodified copy of these files.**

3.4 **Get the Latest USB 3.0 Drivers**

1. Download the current USB 3.0 drivers for your Intel NUC from [Download Center](#) to the Admin system.
2. Extract but don't install the USB 3.0 driver package.
3. Create a driver folder in your working directory for the 64-bit drivers (`C:\WIM\USB3\`).
4. Copy the x64 folder from the extracted files to that location (`C:\WIM\USB3\x64\`).
3.5 Run the DISM Command Line Tool

1. Open an Administrator Command Prompt window.

2. Enter each of the following DISM command lines in turn:

<table>
<thead>
<tr>
<th>Action</th>
<th>DISM command line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount the install.wim image</td>
<td>dism.exe /Mount-WIM /WimFile:&quot;C:\WIM\install.wim&quot; /index:4 /MountDir:&quot;C:\WIM\MOUNT&quot;</td>
</tr>
<tr>
<td></td>
<td>Set /index: to 1 – 4 depending, on the version of Windows 7 you have:</td>
</tr>
<tr>
<td></td>
<td>1 = Home Basic</td>
</tr>
<tr>
<td></td>
<td>2 = Home Premium</td>
</tr>
<tr>
<td></td>
<td>3 = Professional</td>
</tr>
<tr>
<td></td>
<td>4 = Ultimate</td>
</tr>
<tr>
<td>Add USB 3.0 drivers to the install.wim image</td>
<td>dism.exe /image:&quot;C:\WIM\MOUNT&quot; /Add-Driver /driver:&quot;C:\WIM\USB3\x64&quot; /ForceUnsigned /recurse</td>
</tr>
<tr>
<td>Commit changes to install.wim image and unmount</td>
<td>dism.exe /Unmount-wim /mountdir:&quot;C:\WIM\MOUNT&quot; /commit</td>
</tr>
<tr>
<td>Mount boot.wim image Index 1 (Windows PE)</td>
<td>dism.exe /Mount-WIM /WimFile:&quot;C:\WIM\boot.wim&quot; /index:1 /MountDir:&quot;C:\WIM\MOUNT&quot;</td>
</tr>
<tr>
<td>Add USB 3.0 drivers to boot.wim image</td>
<td>dism.exe /image:&quot;C:\WIM\MOUNT&quot; /Add-Driver /driver:&quot;C:\WIM\USB3\x64&quot; /ForceUnsigned /recurse</td>
</tr>
<tr>
<td>Action</td>
<td>Command</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Commit changes to boot.wim image and unmount</td>
<td><code>dism.exe /Unmount-wim /mountdir:&quot;C:\WIM\MOUNT&quot; /commit</code></td>
</tr>
<tr>
<td>Mount boot.wim image Index 2 (Windows Setup)</td>
<td><code>dism.exe /Mount-WIM /WimFile:&quot;C:\WIM\boot.wim&quot; /index:2 /MountDir:&quot;C:\WIM\MOUNT&quot;</code></td>
</tr>
<tr>
<td>Add USB 3.0 drivers to boot.wim image</td>
<td><code>dism.exe /image:&quot;C:\WIM\MOUNT&quot; /Add-Driver /driver:&quot;C:\WIM\USB3\x64&quot; /ForceUnsigned /recurse</code></td>
</tr>
<tr>
<td>Commit changes to boot.wim image and unmount</td>
<td><code>dism.exe /Unmount-wim /mountdir:&quot;C:\WIM\MOUNT&quot; /commit</code></td>
</tr>
</tbody>
</table>

3.6 **Copy Modified WIM Files to the USB Flash Drive Installer**

1. Copy the newly modified `install.wim` and `boot.wim` files back to the `sources` directory of the Windows 7 USB Flash Drive Installer, overwriting the original files.
2. Eject and remove the USB Flash Drive from the Admin system.

3.7 **Install Windows 7 on the Target Computer**

Using the updated installer, proceed with the Windows 7 installation as you normally would.