

Update to add native driver support in NVMe Express in Windows 7 and Windows Server 2008 R2

This article describes an update to add native driver support for an installation of NVMe Express (NVMe) that uses the PCI Express (PCIe) bus in Windows 7 Service Pack 1 (SP1) or Windows Server 2008 R2 SP1.

Note After you install this hotfix, you may receive a "0x0000007E" Stop error. To fix the Stop error, install [hotfix 3087873](#).

How to obtain this hotfix

We have released hotfixes for Windows 7 and Windows Server 2008 R2.

Note The IOCTL_SCSI_MINIPORT_FIRMWARE control code is not implemented in Windows 7 SP1 or Windows Server 2008 R2 SP1. Therefore, you cannot update the firmware on NVMe devices that are running these operating systems. The control code was made available starting from Windows 8.1.

Before you install this hotfix, check the [prerequisite](#) for the hotfix, and be aware that [additional steps of configuration](#) are required.

Hotfix for Windows 7 and Windows Server 2008 R2

A supported hotfix is available from Microsoft. However, this hotfix is intended to correct only the problem that is described in this article. Apply this hotfix only to systems that are experiencing this specific problem.

If the hotfix is available for download, there is a "Hotfix Download Available" section at the top of this Knowledge Base article. If this section does not appear, submit a request to Microsoft Customer Service and Support to obtain the hotfix.

Note If additional issues occur or if any troubleshooting is required, you might have to create a separate service request. The usual support costs will apply to additional support questions and issues that do not qualify for this specific hotfix. For a complete list of Microsoft Customer Service and Support telephone numbers or to create a separate service request, visit the following Microsoft website:

<http://support.microsoft.com/contactus/?ws=support>

Note The "Hotfix Download Available" form displays the languages for which the hotfix is available. If you do not see your language, it is because a hotfix is not available for that language.

Prerequisites

To apply this hotfix, you must first install SP1 for Windows 7 or Windows 2008 R2. For more information about how to obtain a Windows 7 or Windows Server 2008 R2 service pack, click the following article number to view the article in the Microsoft Knowledge Base:

[976932](#) Information about Service Pack 1 for Windows 7 and for Windows Server 2008 R2

Registry information

To use the hotfix in this package, you do not have to make any changes to the registry.

Restart requirement

You may have to restart the computer after you apply this hotfix.

Hotfix replacement information

This hotfix does not replace a previously released hotfix.

More Information

For more information about software update terminology, click the following article number to view the article in the Microsoft Knowledge Base:

[824684](#) Description of the standard terminology that is used to describe Microsoft software updates.

How to insert hotfixes and drivers and then create a bootable Windows Setup DVD

Method 1

1. Install the latest [Windows ADK for Windows 8.1 update](#).
2. Create local folders c:\temp\src c:\temp\mount, c:\temp\winremount, c:\temp\hotfix, and c:\temp\drivers.
3. Copy the setup sources from the DVD or a mounted ISO to C:\temp\src.
4. Copy the hotfix (.msu or .cab files) to C:\temp\hotfix.
5. Copy the driver files to c:\temp\drivers.
6. Run Command Prompt as an administrative.
7. Insert the hotfixes and drivers to the boot.wim, then update the sources folder by running the following Deployment Image Servicing and Management (DISM) commands. For more information about DISM, see the [DISM Operating System Package Servicing Command-Line Options](#).

```
dism /Mount-Image /ImageFile:c:\temp\src\sources\boot.wim /Index:1  
/MountDir:c:\temp\mount  
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
```

```
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Image /MountDir:C:\temp\mount /Commit
dism /Mount-Image /ImageFile:c:\temp\src\sources\boot.wim /Index:2
/MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
```

Manually sort the folder C:\temp\mount\sources by date, and then copy the updated files to c:\temp\src\sources.

```
dism /Unmount-Image /MountDir:C:\temp\mount /commit
```

8. Obtain the index from the Install.wim information by running the following command, and then check every index to see how many indexes have to be updated.

```
dism /Get-WimInfo /WimFile:c:\temp\src\sources\install.wim
```

9. Insert the hotfixes and drivers to install.wim and winre.wim by running the following commands:

```
dism /Mount-Image /ImageFile:c:\temp\src\sources\install.wim /Index:1
/MountDir:c:\temp\mount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Mount-Image /ImageFile:c:\temp\mount\windows\system32\recovery\winre.wim
/Index:1 /MountDir:c:\temp\winremount
dism /Image:C:\temp\mount /Add-Package /PackagePath:c:\temp\hotfix
dism /Image:C:\temp\mount /Add-Driver /Driver:c:\temp\drivers /Recurse
dism /Unmount-Wim /MountDir:C:\temp\winremount /Commit
dism /Unmount-Wim /MountDir:C:\temp\mount /Commit
```

Note If there are multiple indexes in step 8, update them one by one.

10. Create an ISO file, and then rename the label by running the following oscdimg commands. For more information about oscdimg, see the [Oscdimg Command-Line Options](#).

For Legacy BIOS Boot mode:

```
oscdimg -LTEST -m -u2 -bC:\temp\src\boot\etfsboot.com C:\temp\src
C:\temp\Win7.NVME.ISO
```

For Legacy and UEFI BIOS multiple Boot mode:

```
oscdimg -LTEST -m -u2 -  
bootdata:2#p0,e,bC:\temp\src\boot\etfsboot.com#pEF,e,bC:\temp\src\efi\microsoft\boot\efisys.bin C:\temp\src C:\temp\Win7.NVME.ISO
```

11. Right-click the ISO file, and then click Burn disc image to burn the DVD.

Note

- If you have to compress the image, run the following command:

```
Dism /image:c:\temp\mount /Cleanup-Image /StartComponentCleanup /ResetBase
```

- If there are hotfixes that are pending online, you have to bring them online to Audit mode to clean up, and then recapture the image.
- If the ISO file is larger than 4.7 gigabytes (GB), use a dual layer DVD to burn the ISO file.

Method 2

1. Restart from media, and install Windows 7 from media to a disk that attaches other storage controllers (such as SATA).
2. Press Ctrl+Shift+F3 to enter audit mode during the Out-of-box experience (OOBE) process.
3. Install the hotfix package, and then restart the computer.
4. Reseal the system by using the sysprep - generalize - shutdown options.
5. Capture and move the generalized image to the disk that attaches the NVMe controller.