

Precautions for using "4KB sector HDD" on NEC Express5800 Servers

Thank you for choosing NEC Express5800 servers.

4KB sector hard drives (4KB native) have been supported on NEC Express5800 servers since September, 2014.

To use 4KB sector hard drives, all of the following conditions must be met. Otherwise, please consider configuring the system with traditional 512B sector drives.

- i . Hardware
- ii . Operating System
- iii . Application

i. Hardware

Server and RAID controller must support 4KB sector hard drives (4KB native). Refer to the system configuration guides for the hardware compatibility.

ii. Operating System

Operating Systems which support 4KB sector hard drives are:

- Windows Server 2012 or later
- Red Hat Enterprise Linux 6.5(x64) or later [*KVM virtualization is not supported]
- * As of September 2014, 4KB sector hard drives are not supported on VMware.

<Note>

[STOP 0x0000007E error]

The Operating System may not boot with STOP 0x0000007E error when Windows Server 2012 R2 is installed in a 4KB sector hard drive. To address this issue, refer to the following "Precautions for using 4KB sector HDD as a boot drive in Windows Server 2012 R2".

[Windows Update]

When applying several updates including KB3000850 using Windows Update, system reboot may fail with error C0190003. To address this issue, refer to the following "Cautions for running Windows Update on a system that has an operating system installed on a 4KB sector hard disk"

[Precautions for using "4KB sector HDD" as a boot drive in Windows Server 2012 R2]

■ Overview

This section describes a STOP error (0x0000007E) that may occur in the environment where Windows Server 2012 R2 is booted from the 4KB sector HDD.

■ Symptom

A "STOP 0x0000007E" error may occur in the environment where Windows Server 2012 R2 is booted from the 4KB sector HDD that causes a system failure.

The message "SYSTEM_THREAD_EXCEPTION_NOT_HANDLED_(WppRecorder.sys)" is displayed on the screen at this time.

■ Conditions

The symptom occurs if the following conditions apply.

- You have booted Windows Server 2012 R2 from the 4KB sector HDD.
- The driver files are NTFS compressed files.
- * The symptom never occurs with the 512e HDD (Advanced Format).

■ Our policy

To avoid the symptom, we have shipped NEC EXPRESS5800 Series servers on which Windows 2012 R2 is pre-installed on 4KB sector HDDs with the NTFS compression function disabled. From now on, we are going to ship the servers with its hot fix installed and NTFS compression function enabled.

Your understanding is appreciated in following the procedure in "How to check" described below to check if the hot fix and NTFS compression function exists or not.

■ How to check

Follow the procedure described below.

1. Checking if the hot fix has been installed or not

Check if the hot fix has been installed or not by following the procedure below.

- i. Log in to the system with the administrative user.
- ii. Select "Control Panel" – "Programs" – "Programs and Features".
- iii. Select "View installed updates" on the "Programs and Features" window.
- iv. Check if the following hot fix has been existed in the list.

Microsoft Windows KB3027108 Hot fix

If the symptom has already occurred and the system cannot be booted, proceed to "2. Installing a hot fix" after you follow the procedure in "Recovery from the failure" described later.

2. Installing a hot fix

When the Microsoft Windows (KB3027108) has been installed:

Proceed to "B. Enabling NTFS compression function".

When the Microsoft Windows (KB3027108) has NOT been installed:

Proceed to "A. Obtaining and installing hot fix" and then go to "B. Enabling NTFS compression function".

A. Obtaining and installing hot fix

Check the information including conditions for installation on the Microsoft Web site. If the conditions match, download the hot fix and install it. (Note 1)

<https://support.microsoft.com/en-us/kb/3027108>

Note 1: The workaround for the problem with "STOP 0x0000003B" error explained in the site above is the same as that for the problem with "STOP 0x0000007E" error.

B. Enabling NTFS compression function

Enable the NTFS compression function by following the procedure described below.

- i. Log in to the target computer.
- ii. Start the command prompt with "Run as Administrator" and check the current setting of NTFS compression function using the following command.

```
>fsutil behavior query disablecompression
>
```

When the result is "DisableCompression = 1":

The NTFS compression function has been disabled. Proceed to step iii.

When the result is "DisableCompression = 0":

The NTFS compression function has been enabled. You can end the procedure.

- iii. Run the following command to enable the function.

```
>fsutil behavior set disablecompression 0
>
```

- iv. Restart the system.

- v. Run the following command to check if the NTFS compression function is enabled (DisableCompression = 0).

```
>fsutil behavior query disablecompression
>
```

■ Recovery from the failure

If the symptom has already occurred and the system cannot be booted, follow the procedure by using OS installation media.

1. Preparing the installation medium of Windows Server 2012 R2.

Prepare the installation medium of Windows Server 2012 R2 to boot the recovery environment.

2. Decompressing the driver file

Follow the instructions to decompress the driver in the recovery environment.

- i. Boot the system from the OS installation medium and select [Repair your computer].
- ii. Select [Troubleshooting] in the options page.
- iii. Select [Command Prompt] in the advanced options page.
- iv. Execute the following commands to decompress the driver files and executable files (.exe).

Example returned where the system drive is mounted on the C: drive. (*)

```
> C:\windows\system32\compact.exe /u c:\windows\system32\drivers\*.sys
> C:\windows\system32\compact.exe /u c:\windows\system32\*.exe
>
```

Note that the symptom does not occur even if the executable files (.exe) are the NTFS-compressed files. However, in terms of proper system operation, decompress the executable files to eliminate the possibility of abnormal termination of the processes.

- i. Execute the following commands to make sure that the driver files and executable files are not compressed.

Example returned where the system drive is mounted on the C: drive. (*)

```
> C:\windows\system32\compact.exe c:\windows\system32\drivers\*.sys
> C:\windows\system32\compact.exe c:\windows\system32\*.exe
>
```

After executing the command, if you find the compressed files 0, it means that the driver file is Not compressed.

- ii. Exit the command prompt and select [Turn Off Your Computer] in the options menu.

* Make sure that the system driver has been mounted on the C: drive.

*After recovery, install the hot fix and enable the NTFS compression function by following the procedure in the "How to check" section.

[Cautions for running Windows Update on a system that has an operating system installed on a 4KB sector hard disk]

■ Overview

As of April 2015, the following issue has been reported. Since Microsoft is still investigating for a solution, we provide here a tentative workaround as an emergency measure. We will let you know Microsoft's policy immediately after it is defined

■ Issue

When applying several updates including KB3000850 using Windows Update, system reboot may fail with error C0190003.

■ Occurrence Conditions

- Running Windows Server 2012 R2 on a 4KB sector hard disk
- Applying KB3000850 and many other updates simultaneously

"November 2014 update rollup for Windows RT 8.1, Windows 8.1, and Windows Server 2012 R2"
<https://support.microsoft.com/en-us/kb/3000850/en-us>

[Note]

Currently, this issue is detected only when KB3000850 is applied to Windows Server 2012 R2, but the same issue may also occur in other operating systems if Microsoft releases a massive update like KB3000850.

■ Cause

The maximum size of updates that can be applied simultaneously is smaller on a 4KB sector hard disk than on a 512 sector hard disk.

KB3000850 is a huge update over 700MB in size; Applying KB3000850 with other updates may exceed the limit and cause error C0190003.

(The limit depends NOT on the number of updates, but on that of modules included in the updates.)

■ Workaround

You can avoid this issue by applying KB3000850 manually, not using Automatic Windows Update.

<Steps>

1. Go to Control Panel and open "Windows Update."
2. Open "Change settings", then from "Important updates" set to any option EXCEPT "Install

updates automatically (recommended).”

3. Return to “Windows Update” page, and run “Check for updates.”
4. Before clicking “Install updates,” open the URL linked on “xx important updates are available” to check the list of updates. If you find KB3000850, uncheck the check box of it.
5. Click “Install updates” to install the updates except KB3000850.
6. Reboot the machine.
7. After repeating step 2 – 6, install KB3000850 separately and reboot the machine.
8. Restore the settings of Windows Update.

If you cannot boot the system after getting error C0190003, try the following steps.

<Steps>

1. On the screen where the error occurred, force shutdown and restart the machine.
2. On the “Choose an option” screen, click “Troubleshoot.”
3. On the “Advanced options” screen, click “Command Prompt.”
4. On the “Command Prompt” screen, choose an administrator account.
5. Input the password.
6. In the Command Prompt (cmd.exe) window, run the following command.

```
Dism.exe /image:C:¥ /cleanup-image /revertpendingactions
```

7. Close the Command Prompt to return to the “Choose an option” screen.
8. Click “Turn off your PC” to shut down the machine.
9. Turn on the machine.
10. After the remaining updates are configured, confirm if you can logon to the machine normally.

iii. Application

You also need to confirm if you can use your applications which have direct I/O function even when hardware and operating system support 4KB sector hard drives.

For your reference, the following lists show the confirmed applications by NEC.

[Applications for Windows]

Category	Feature	Product Name	Support status	Support ver.
Service Execution Platform	Application server/Web server	WebOTX Application Server	No problem	
Service Execution Platform	Application server/Web server	WebOTX Batch Server	No problem	
Service Execution Platform	Application server/Web server	Oracle Fusion Middleware	No problem	
Service Execution Platform	SOA platform	WebOTX Portal	No problem	
Service Execution Platform	SOA platform	WebOTX Enterprise Service Bus	No problem	
Development environment	System development environment	Adobe LiveCycle Data Services	No problem	
Development environment	System development environment	Adobe Flash Builder	No problem	
Information management	Database	Microsoft SQL Server	No problem	2005, 2008, 2008 R2, 2012, 2014
Information management	Database	DB2	Not supported	
Information management	Database	Oracle Database	Not supported	
Information management	Content management	PROCENTER/C	No problem	
Information management	Media Delivery	Helix	Not supported	
Security	Information protection	InfoCage FileShell	No problem	
Security	Virus and worm protection	McAfee SaaS Endpoint Protection	No problem	
Security	Virus and worm protection	McAfee Deep Defender	No problem	
Security	Virus and worm protection	McAfee VirusScan Enterprise	No problem	
Security	Virus and worm protection	McAfee SiteAdvisor Enterprise	No problem	
Security	Virus and worm protection	McAfee Host Intrusion Prevention	No problem	
Security	Virus and worm protection	McAfee Security for Microsoft Exchange	No problem	
Security	Virus and worm protection	McAfee Device Control	No problem	
Security	Virus and worm protection	McAfee Drive Encryption	Not supported	
Security	Virus and worm protection	McAfee ePolicy Orchestrator	No problem	
Security	Virus and worm protection	McAfee VirusScan Enterprise for Storage	No problem	
Security	Virus and worm protection	McAfee Files and Removable Media Encryption	Not supported	
Security	Virus and worm protection	Symantec Ghost Solution Suite 2.5	Supported	2.5
Security	Virus and worm protection	Trend Micro Deep Security	No problem	
Security	Virus and worm protection	Trend Micro Hosted Email Security	No problem	
Security	Virus and worm protection	InterScan Messaging Security Virtual Appliance	No problem	
Security	Virus and worm protection	InterScan Web Security Virtual Appliance	No problem	
Security	Virus and worm protection	Trend Micro Portable Security	No problem	
Security	Virus and worm protection	Trend Micro Safe Lock	No problem	
Security	Thin Client	VirtualPCCenter	To be supported	Next version
Security	Thin Client	Ardence (Citrix Provisioning Server)	No problem	
Security	Thin Client	Citrix Provisioning Server (formerly Ardence)	No problem	
Security	Thin Client	Citrix XenApp (formerly Citrix Presentation Server, MetaFrame)	No problem	
Security	Thin Client	Citrix XenDesktop	No problem	
Operations management	Backup/Archive	arcserve Backup	Limited(*)	r16.5
Operations management	Backup/Archive	arcserve Replication/High Availability	Limited(*)	r16.5
Operations management	Backup/Archive	arcserve D2D	Limited(*)	r16.5
Operations management	Backup/Archive	arcserve Unified Data Protection	Limited(*)	v5
Operations management	Backup/Archive	NetBackup	Limited(*)	7.6.0.3
Operations management	Backup/Archive	Backup Exec	Limited(*)	2010 R3 SP3 (Client only), 2012 SP2(Client only), 2014
Operations management	Backup/Archive	Symantec System Recovery	Limited(*)	2013 R2
Operations management	Backup/Archive	NetWorker	Limited(*)	8.0.1 or later
Operations management	Backup/Archive	NetVault	Not supported	
Operations management	Backup/Archive	Storage Foundation	Not supported	
Operations management	Backup/Archive	Symantec Enterprise Vault	Limited(*)	
Operations management	Platform management	SigmaSystemCenter	Supported	3.4
Operations management	Platform management	DeploymentManager	Supported	6.4
Operations management	Server management	PowerChute Business Edition	No problem	
Operations management	Server management	NEC ESMPRO Manager(Windows)	No problem	
Operations management	Server management	NEC ESMPRO Agent(Windows)	No problem	
Operations management	Server management	PowerChute Business Edition	No problem	
Operations management	Server management	MasterScope SystemManager	No problem	
Operations management	Storage management	NEC Storage PathManager	No problem	
Operations management	Storage management	EMC SolutionsEnabler	No problem	
Operations management	Storage management	navisecli	No problem	
Operations management	Storage management	admsnap	No problem	
Operations management	Storage management	Avamar	No problem	
Operations management	Storage management	Isilon	No problem	
Operations management	Storage management	RecoverPoint	No problem	
Operations management	Storage management	PowerPath	No problem	

(*)Contact to ISV support representative and confirm limitations.

Category	Feature	Product Name	Support status	Support ver.
Operations management	Application management	MasterScope Application Navigator	No problem	
Operations management	Application management	NetIQ AppManager	No problem	v7.0
System platform	Clustering	EXPRESSCLUSTER X	Supported	X3.3.0(Mirror/Hybrid) X3.3.2(Shared Disk)
System platform	Clustering	EXPRESSCLUSTER X SingleServerSafe	No problem	
System platform	Clustering	EXPRESSCLUSTER X OperationHelper	No problem	
System platform	Clustering	EXPRESSCLUSTER X HA/ProcessSaver	No problem	
System platform	Clustering	EXPRESSCLUSTER X HA/RootDiskMonitor	Not supported	
System platform	Clustering	EXPRESSCLUSTER X HA/StorageSaver	Not supported	
System platform	Communication/host communication	HULFT	No problem	

[Applications for Linux]

Category	Feature	Product Name	Support status	Support ver.
Service Execution Platform	Application server/Web server	Oracle Fusion Middleware	No problem	
Service Execution Platform	Application server/Web server	Apache HTTP Server	No problem	
Service Execution Platform	Application server/Web server	Apache Tomcat	No problem	
Service Execution Platform	Application server/Web server	JBoss	No problem	
Service Execution Platform	Application server/Web server	WebOTX Application Server	No problem	
Service Execution Platform	Application server/Web server	WebOTX Batch Server	No problem	
Service Execution Platform	SOA platform	WebOTX Enterprise Service Bus	No problem	
Service Execution Platform	SOA platform	WebOTX Portal	No problem	
Development environment	System development environment	Micro Focus Server Express	No problem	
Development environment	Miscellaneous	Black Duck Protex	No problem	till V7.0
Information management	Database	Oracle Database	Limited(*)	11.2 or later
Information management	Database	DB2	No problem	
Information management	Database	Informix	Not supported	
Information management	Database	PostgreSQL	No problem	
Information management	Media Delivery	Helix	Not supported	
Information management	Content management	PROCENTER/C	No problem	
Security	Virus and worm protection	InterScan Messaging Security Virtual Appliance	No problem	
Security	Virus and worm protection	InterScan Web Security Virtual Appliance	No problem	
Security	Virus and worm protection	McAfee VirusScan Enterprise for Linux	No problem	
Security	Virus and worm protection	ServerProtect for Linux	No problem	
Security	Virus and worm protection	Symantec Ghost Solution Suite	Supported	2.5
Security	Virus and worm protection	Trend Micro Deep Security	TBC	
Security	Virus and worm protection	Trend Micro Hosted Email Security	TBC	
Security	Authorization/ID management	IceWall SSO	No problem	
Operations management	Integrated management	MasterScope SystemManager	No problem	
Operations management	Integrated management	Zabbix	No problem	
Operations management	Backup/Archive	arcserve Backup	Limited(*)	r16.5
Operations management	Backup/Archive	NetBackup	Limited(*)	7.6.0.3
Operations management	Backup/Archive	NetVault	Limited(*)	
Operations management	Backup/Archive	NetWorker	Limited(*)	8.0.1
Operations management	Backup/Archive	Storage Foundation	Not supported	
Operations management	Platform management	DeploymentManager	To be supported	6.4
Operations management	Platform management	SigmaSystemCenter	To be supported	3.4
Operations management	Server management	NEC ESMPRO Agent(Linux)	No problem	
Operations management	Server management	NEC ESMPRO Manager(Linux)	No problem	
Operations management	Server management	PowerChute Business Edition	No problem	
Operations management	Storage management	NEC Storage PathManager	No problem	
Operations management	Storage management	EMC SolutionsEnabler	No problem	
Operations management	Storage management	navisecli	No problem	
Operations management	Storage management	admsnap	No problem	
Operations management	Storage management	Avamar	No problem	
Operations management	Storage management	Isilon	No problem	
Operations management	Storage management	RecoverPoint	No problem	
Operations management	Storage management	PowerPath	No problem	
Operations management	Application management	NetIQ AppManager	No problem	v7.0
Operations management	Application management	MasterScope Application Navigator	No problem	
Operations management	Application management	MasterScope Application Navigator(Collector PostgreSQL Agent)	No problem	
System platform	Clustering	EXPRESSCLUSTER X	Supported	X3.3.0(Mirror/Hybrid) X3.3.2(Shared Disk)
System platform	Clustering	EXPRESSCLUSTER X HA/JVMSaver	No problem	
System platform	Clustering	EXPRESSCLUSTER X HA/ProcessSaver	No problem	
System platform	Clustering	EXPRESSCLUSTER X HA/RootDiskMonitor	Not supported	
System platform	Clustering	EXPRESSCLUSTER X HA/StorageSaver	Not supported	
System platform	Clustering	EXPRESSCLUSTER X SingleServerSafe	To be supported	TBC
System platform	Communication/host communication	HULFT	No problem	
System platform	Miscellaneous	Hadoop	No problem	
Miscellaneous	Miscellaneous	BIND	No problem	
Miscellaneous	Miscellaneous	Courier-IMAP	No problem	
Miscellaneous	Miscellaneous	OpenLDAP	No problem	
Miscellaneous	Miscellaneous	Postfix	No problem	
Miscellaneous	Miscellaneous	qmail	No problem	
Miscellaneous	Miscellaneous	Qpopper	No problem	
Miscellaneous	Miscellaneous	Samba	No problem	
Miscellaneous	Miscellaneous	Sendmail	No problem	

(*)Contact to ISV support representative and confirm limitations.

<Note>

Those lists are just reference information confirmed by NEC.

For details, please check each software product site or ask the application vendor.