

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>

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.

<Notes for using 4KB sector HDD for 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 error (0x0000007E) may occur and the system may not start in the environment where Windows Server 2012 R2 is booted from the 4KB sector HDD. Once it occurs, the system never starts until you perform the workaround described in the “Workaround” section below.

■ 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).

■ Workaround

Please perform the following workaround as soon as possible after you install the operating system. This workaround works even if the symptom has already occurred and the system has failed to start.

Follow the instructions to avoid the symptom:

1. Prepare the installation medium of Windows Server 2012 R2.
2. Confirm if the driver file is compressed or not.
3. Decompress the driver file.
4. Disable the NTFS compression function.

If the symptom has already occurred and the system cannot be booted, start from Step 3 (Decompress the driver file).

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

Prepare the installation medium of Windows Server 2012 R2 to boot the recovery environment in Step 3.

2. Confirm if the driver file is compressed or not.

Confirm if the driver file is compressed or not by using the following command. After executing the command, if you find the compressed file 0, it means that the driver file is not compressed.

```
>compact C:\Windows\System32\drivers\*.sys
```

Example of the result:

```
Listing C:\Windows\System32\drivers\
```

```
New files added to this directory will not be compressed.
```

```
54784 :      54784 = 1.0 : 1    1394bus.sys
```

```
164864 :    164864 = 1.0 : 1    1394ohci.sys
```

```
:
```

```
155136 :    155136 = 1.0 : 1    WUDFRd.sys
```

```
Of 287 files within 1 directories
```

```
0 are compressed and 287 are not compressed.
```

```
57,315,960 total bytes of data are stored in 57,315,960 bytes.
```

```
The compression ratio is 1.0 to 1.
```

```
>
```

Go to Step3 (Decompress the driver file) if your driver file has been compressed. Go to Step4 (Disable the NTFS compression function) if it has not compressed yet.

3. Decompress the driver file

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

- (1) Boot the system from the OS installation medium and select [Repair your computer].
- (2) Select [Troubleshooting] in the options page.
- (3) Select [Command Prompt] in the advanced options page.
- (4) 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 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.

(5) Execute the following commands to make sure that the driver files and executable files are not compressed.

Example returned when 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  
>
```

Check the result as you checked in Step 2 (Confirm if the driver file is compressed or not).

(6) 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.

Then, go to Step 4 (Disable the NTFS compression function).

4. Disable the NTFS compression function

Follow the instructions to disable the NTFS compression function.

(1) Log on as an administrator.

(2) Start the Command Prompt and confirm if the NTFS compression function is enabled or not using the following commands.

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

If “DisableCompression = 1” is displayed, the function has already been disabled. You do not have to continue the Steps. If “DisableCompression = 0” is displayed, go to (3).

(3) Follow the instructions to disable the NTFS compression function.

```
>fsutil behavior set disablecomperssion 1  
>
```

(4) Restart the system.

(5) Execute the following commands to confirm if the NTFS compression function is disabled (DisableCompression = 1).

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

■Precautions

The NTFS compression function becomes disabled in the whole system after the instructions described above are finished. In this case, you cannot do the NTFS compression in other volumes of the system. However, even in such case, you can browse or decompress the NTFS compressed files.

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	No problem	
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 Encryotion	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(*)	8.0.1or 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	To be supported	3.4
Operations management	Platform management	DeploymentManager	To be 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	naviseccli	No problem	
Operations management	Storage management	admsnap	No problem	
Operations management	Storage management	Avamar	No problem	
Operations management	Storage management	Isilon	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.