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# ETERNUS VSS Hardware Provider Installation Information

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## Abbreviations

In this manual, the FUJITSU Storage ETERNUS Hybrid storage systems and the FUJITSU Storage ETERNUS All Flash Array supported by this product are referred to as "storage system".

## About ETERNUS VSS Hardware Provider

ETERNUS VSS Hardware Provider (hereinafter referred to as "VSSH") is a program that is compatible with the Microsoft Volume Shadow Copy Service (hereinafter referred to as "VSS") interface, and that creates shadow copies of volumes in a storage system.

Use of this software with backup software and writer software supporting VSS delivers online backup using the one point copy (snapshot) capability of Advanced Copy function available with storage systems.

## Operating System Versions

The following tables show the version of Windows Servers supported by VSSHP.

Operating System	VSSHP Version Level
Microsoft® Windows Server® 2008 Standard Microsoft® Windows Server® 2008 Enterprise Microsoft® Windows Server® 2008 Datacenter (Server Core is not supported.)	1.1.0 or later
Microsoft® Windows Server® 2008 R2 Standard Microsoft® Windows Server® 2008 R2 Enterprise Microsoft® Windows Server® 2008 R2 Datacenter (Server Core is supported.)	1.4.0 or later (The support of Server Core is since 1.5.0.)
Microsoft® Windows Server® 2012 Standard Microsoft® Windows Server® 2012 Datacenter (Server Core is supported.)	2.1.0 or later
Microsoft® Windows Server® 2012 R2 Standard Microsoft® Windows Server® 2012 R2 Datacenter (Server Core is supported.)	2.1.0 or later
Microsoft® Windows Server® 2016 Standard Microsoft® Windows Server® 2016 Datacenter (Server Core is supported.) (Nano Server is not supported.)	2.3.0 or later
Microsoft® Windows Server® 2019 Standard Microsoft® Windows Server® 2019 Datacenter (Server Core is supported.) (Nano Server is not supported.)	2.3.0 or later
Microsoft® Windows Server® 2022 Standard Microsoft® Windows Server® 2022 Datacenter (Server Core is supported.) (Nano Server is not supported.)	2.3.0 or later

For Windows Server 2008

The architecture types of x86 (32-bit), x64 are supported.

The software levels of SP1 (no SP applied) and SP2 are supported.

For Windows Server 2008 R2

The architecture types of x64 is supported.

The software levels of SP0 (no SP applied) and SP1 are supported.

**[Caution]**

- The environment where BitLocker drive coding function was installed in does not support it.
- The registry in conjunction with the partition is left and may accumulate, when I delete the copying of GPT (GUID Partition Table). As a result of having continued use without deleting the registry, the phenomenon that backup is terminated abnormally by having exceeded an upper limit level of the registry is confirmed.

**[Prevention]**

DevCon.exe which Microsoft provides delete the unnecessary registry.

There is no modified information of the OS at present.

## Storage Systems

VSSHP supports the following storage systems.

ETERNUS DX60 S2  
 ETERNUS DX80 S2  
 ETERNUS DX90 S2  
 ETERNUS DX60 S3  
 ETERNUS DX60 S4  
 ETERNUS DX60 S5  
 ETERNUS DX100 S3  
 ETERNUS DX100 S4  
 ETERNUS DX100 S5  
 ETERNUS AF150 S3  
 ETERNUS DX200 S3  
 ETERNUS DX200 S4  
 ETERNUS DX200 S5  
 ETERNUS DX200F  
 ETERNUS AF250  
 ETERNUS AF250 S2  
 ETERNUS AF250 S3  
 ETERNUS DX400 S2 series  
 ETERNUS DX500 S3  
 ETERNUS DX500 S4  
 ETERNUS DX500 S5  
 ETERNUS DX600 S3  
 ETERNUS DX600 S4  
 ETERNUS DX600 S5  
 ETERNUS AF650  
 ETERNUS AF650 S2  
 ETERNUS AF650 S3  
 ETERNUS DX900 S5  
 ETERNUS DX8000 S2 series  
 ETERNUS DX8700 S3  
 ETERNUS DX8900 S3  
 ETERNUS DX8900 S4

**[Caution]**

The registration of the Advanced Copy license is required for some models.

Please refer to the manual for details of the setting of the storage system for the Advanced Copy function use for the registration of the license and the setting of the size of the copy table, etc.

Storage System	VSSHP Version Level
ETERNUS DX60 S2 ETERNUS DX80 S2 ETERNUS DX90 S2	2.0.1 or later
ETERNUS DX60 S3 ETERNUS DX60 S4	2.1.1 or later
ETERNUS DX60 S5	2.3.0 or later
ETERNUS DX100 S3	2.1.0 or later
ETERNUS DX100 S4	2.1.1 or later
ETERNUS DX100 S5	2.3.0 or later
ETERNUS AF150 A3	2.3.0 or later
ETERNUS DX200 S3	2.1.0 or later
ETERNUS DX200 S4	2.1.1 or later
ETERNUS DX200 S5	2.3.0 or later
ETERNUS DX200F	2.1.0 or later

Storage System	VSSHP Version Level
ETERNUS AF250 ETERNUS AF250 S2 ETERNUS AF250 S3	2.3.0 or later
ETERNUS DX400 S2 series	2.0.1 or later
ETERNUS DX500 S3 ETERNUS DX500 S4	2.1.0 or later
ETERNUS DX500 S5	2.3.0 or later
ETERNUS DX600 S3 ETERNUS DX600 S4	2.1.0 or later
ETERNUS DX600 S5	2.3.0 or later
ETERNUS AF650 ETERNUS AF650 S2 ETERNUS AF650 S3	2.3.0 or later
ETERNUS DX900 S5	2.3.0 or later
ETERNUS DX8000 S2 series	2.0.1 or later
ETERNUS DX8700 S3 ETERNUS DX8900 S3	2.2.0 or later
ETERNUS DX8900 S4	2.3.0 or later

## About the support of Storage Cluster function

In following the storage system, Storage Cluster function is available.

Storage System	Firmware Version Level
ETERNUS DX200 S3 ETERNUS DX200F ETERNUS DX500 S3 ETERNUS DX600 S3	V10L30 or later
ETERNUS DX200 S4 ETERNUS DX200 S5 ETERNUS DX500 S4 ETERNUS DX500 S5 ETERNUS DX600 S4 ETERNUS DX600 S5 ETERNUS AF250 ETERNUS AF250 S2 ETERNUS AF250 S3 ETERNUS AF650 ETERNUS AF650 S2 ETERNUS AF650 S3 ETERNUS DX900 S5 ETERNUS DX8700 S3 ETERNUS DX8900 S3 ETERNUS DX8900 S4	All

The following tables show the combination of the source copy volume, the destination copy volume and advanced copy function supported by VSSHP.

Volume		Advanced Copy			
source	destination	OPC	QuickOPC	SnapOPC	SnapOPC+
TFOV	TFOV	Yes	Yes	No	No
TFOV	Standard	No	No	No	Yes*1*2
TFOV	SDV	No	No	No	Yes*1
Standard	TFOV	No	No	No	No

TFOV: Transparent Failover Volume  
 Standard: Standard Volume  
 SDV: Snap Data Volume

Yes: supported

Yes\*1: supported. However, a backup operation is not available until the failback is completed after a failover occurs. In following conditions, this function is available.

Storage System Firmware Version Level: V10L60 or later  
 VSSHP Version Level: 2.3.0 or later

Yes\*2: supported. TPV/FTV only.

The backup might fail after the failback. Please retry when failing.

No: not supported

### [Caution]

- Storage Cluster must be configured with the same storage system models.
- Do not use TFOVs together with Standard volumes or SDVs on the same host. However, they can be used together only with the following combination. For details, refer to the above tables.
  - Copy source volume: TFOV
  - Copy destination volume: SDV or TPV/FTV
  - Copy type: SnapOPC+

## Host interface

The following tables show Host interfaces supported by VSSHP.

Host interface	VSSHP Version Level
FC	1.1.0 or later
iSCSI	1.1.0 or later
SAS	1.1.0 or later
FCoE	2.2.0 or later



## Backup software (Requester) and Server application (Writer)

The following tables show the Backup software (requester) and the Server application (writer) supported by the VSSHP.

### Backup software

Backup software	VSSHP Version level
ETERNUS SF AdvancedCopy Manager 13.4.1 or later (*1)	1.2.0 or later
ARCserve Backup r12.5 / r15 / r16 / r16.5	1.2.0 or later
Microsoft System Center Data Protection Manager 2010 / 2012	1.5.0 or later
NetWorker 7.5 / 7.6	1.5.0 or later
NetVault Backup 8.2 / 8.5.X / 8.6	1.2.0 or later
Veritas Backup Exec 12.5 for Windows Servers	1.2.0 or later
Veritas Backup Exec 2010 R2	1.5.0 or later
Veritas NetBackup 7	1.5.0 or later
SEP Sesam 4.2	2.1.0 or later

\*1:ETERNUS SF AdvancedCopy Manager comes with a VSSHP package. Please use this package, or use the latest package get from our download page.

Reference: Windows Server Backup of Windows Server 2008 (version after that) cannot be used because it does not operate in the hardware provider that the vender offers.

**Server application**

Server application	Remarks
Hyper-V VSS Writer (*1)(* 2)	
Microsoft Exchange Server 2007 / 2010 / 2013 / 2016	
Microsoft SQL Server 2005 / 2008	
Oracle Database 11g Release 2	
System Writer (NTFS File system: Windows Server 2008 / 2008 R2 / 2012 / 2012 R2 / 2016)	

\*1: Hyper-V since Windows Server 2008 R2

\*2: The disk where guest OS is stored can be backed up from host OS. The following guests OS can back up.

- Microsoft® Windows Server® 2003 R2, Standard Edition Service Pack 2
- Microsoft® Windows Server® 2003 R2, Enterprise Edition Service Pack 2
- Microsoft® Windows Server® 2008 Standard Service Pack 2
- Microsoft® Windows Server® 2008 Enterprise Service Pack 2
- Microsoft® Windows Server® 2008 R2 Standard
- Microsoft® Windows Server® 2008 R2 Enterprise
- Microsoft® Windows Server® 2008 R2 Datacenter
- Microsoft® Windows Server® 2012 Standard
- Microsoft® Windows Server® 2012 Datacenter
- Microsoft® Windows Server® 2012 R2 Standard
- Microsoft® Windows Server® 2012 R2 Datacenter
- Microsoft® Windows Server® 2016 Standard
- Microsoft® Windows Server® 2016 Datacenter

**Virtualization environment**

Virtualization environment	Operation on host OS	Operation on guest OS
Windows Server 2008 Hyper-V	Not Supported	Not Supported
Windows Server 2008 R2 Hyper-V	Supported	Not Supported (*2)
Windows Server 2012 Hyper-V	Supported	Not Supported (*2)
Windows Server 2012 R2 Hyper-V	Supported	Not Supported (*2)
Windows Server 2016 Hyper-V	Supported	Not Supported (*2)
Windows Server 2019 Hyper-V	Supported	Not Supported
Windows Server 2022 Hyper-V	Supported	Not Supported
VMware vSphere 4.1	N/A	Supported (*1)
VMware vSphere 5	N/A	Supported (*1)

**\*1: Notes**

It is necessary to meet the following requirements.

- The source disk must be the type of Physical RDM (A physical disk and Raw Device Mapping are specified.) defined with VMware vSphere.
- When servers are constructed Transportable Copy Configuration and the backup server is made a Virtualization server, the destination disk must be the type of Physical RDM.
- When servers are constructed Transportable Copy Configuration and you copy the disk where guest OS was installed, the backup server must be a physical server, and the production server recognizes the target disk.  
(The environmental setting equal with the case to back up Hyper-V virtual machine with Transportable Copy Configuration is necessary.)

**\*2: Notes**

VSSHP supports only when use it with ETERNUS SF AdvancedCopy Manager.

**VMware vSphere environment**

The combination of the backup software and the server application supported by VSSHP in VMware vSphere Environment is as follows.

Backup software	Server application	OS	Server Configuration		Operation types	
			Local Copy Configuration	Transportable Copy Configuration	Copy set operation	Target disk pool operation
ETERNUS SF AdvancedCopy Manager 15.0 or later (*1)	Microsoft Exchange Server 2007 / 2010 / 2013	Windows Server 2008 R2	-	Yes	Yes	No

\*1: In the combination ETERNUS SF AdvancedCopy Manager 15.0 (or later) + VSSHP2.0.1(or later), the Exchange data base can be backed up by using "Microsoft Exchange Server" as a server application.

About This Installation Information

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