



Product Bulletin:

SISBU Releases Windows Host Utilities 5.0 with Hyper-V Support

Revision History

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This Product Bulletin informs NetApp Sales and NetApp partners about a new Host Utilities release for Windows®, WHU 5.0, which includes support for Microsoft's 2008-based hypervisor and server virtualization, Hyper-V.

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1. Summary

Microsoft Hyper-V Is Released to Manufacturing (RTM), June 26, 2008 - SISBU immediately announces support for Hyper-V as part of Windows Host Utilities 5.0. Hyper-V is Microsoft's Windows 2008-based hypervisor and server virtualization and management tool infrastructure—
<http://technet2.microsoft.com/windowsserver2008/en/servermanager/virtualization.mspx>.

The Windows Host Utilities 5.0 marks a new milestone for NetApp because it includes support for both FC and iSCSI in a single combined distributable package. Windows Host Utilities 5.0 contains the software components needed to configure a Microsoft® Windows Server 2003 or Windows Server 2008 with block storage access, virtual disks (LUNs) on a NetApp® storage platform using Fibre Channel or iSCSI protocol. Equally important and exciting is that Windows Host Utilities 5.0 provides block storage support on Windows Hyper-V and Virtual Server 2005 R2 virtual machines, running Hyper-V Child (Guest) OS, including Windows Server 2008, Windows Server 2003, Windows XP, and Windows Vista®.

With previous versions of the Windows Host Utilities, separate downloads were available for the Fibre Channel protocol and the iSCSI protocol. Windows Host Utilities 5.0 combines both protocols into a single distributable release.

Windows Host Utilities 5.0 is the follow-on release to both FC Windows Host Utilities 4.0.1 and iSCSI Windows Host Utilities 4.1. It supports Fibre Channel, iSCSI, and mixed FC and iSCSI connections. It also supports iSCSI Host Bus Adapters (HBAs).

Note: If you want to use multipathing to create a highly available connection to the storage system, you must

also install a supported version of multipathing software such as Data ONTAP® DSM for Windows MPIO.

For the currently supported multipathing software versions and related requirements, see the NetApp Interoperability Matrix <https://now.netapp.com/matrix/mtx/login.do>.

2. What's New?

Windows Host Utilities 5.0 is the follow-on release for both iSCSI Windows Host Utilities for Native OS and Veritas™ and FC Windows Host Utilities for Native OS and Veritas.

Windows Host Utilities 5.0 includes the following new features:

- Support for both iSCSI and Fibre Channel protocols in a single product release
- Support for the Hyper-V role in Microsoft Windows Server 2008; Windows Host Utilities must be installed on the parent partition and on all virtual machines running a Windows operating system
- Support for mixed iSCSI and Fibre Channel connections to the same LUN (requires Data ONTAP DSM 3.2 for Windows MPIO)
- A new diagnostic program, vm_info.exe, that provides detailed information about the virtual machines, including the storage resources they use
- An updated MSI-based installation program that installs diagnostic programs, sets the required Windows registry values, and enables multipath I/O
- Support for new Microsoft iSCSI initiator 2.07 w/MPIO support

Key features supported in Hyper-V:

- FC, iSCSI support (disk timeouts, scripts, docs) at parent OS (x86, x64)
- Windows guest OS 2003 SP2 (32-bit, 64-bit), 2008 (32-bit, 64-bit), Vista SP1 (32-bit), Windows XP SP3 (32-bit)
- Linux® guest OS targeted for CQ4'08
- Continued support of Windows Failover Cluster, MPIO (DSM 3.2R1, MSDSM)
- SDW enablement—SnapDrive® in a Windows guest with the iSCSI software initiator is in qualification and is expected to be released in CQ3'08
- In a future release of SnapDrive (Edmonton), support of FC and iSCSI hardware initiator configurations
- New WHU 5.0 utility called "vm_info.exe" for displaying the current status and configuration of virtual machines—Hyper-V Configuration on a per-guest basis via a new info script, vminfo.exe:
 - Operating systems
 - Snapshots (Hyper-V)
 - Disk configuration
 - Uptime, status, etc.
- Data LUN support—block support
 - FC/iSCSI from parent mapped as SCSI or IDE disk w/boot support
 - iSCSI directly from guest using MPIO in the guest with any of the following:
 - MSISCDSM—Windows 2003 Guest
 - MSDSM—Windows 2008 Guest
 - Data ONTAP DSM—2003, 2008
 - FC...Data ONTAP DSM—2003, 2008, and FC MSDSM (native MSFT multipath management) for Windows 2008 is in qualification and expected to be released in early CQ3 with the release of Data ONTAP 7.3; MPIO is not supported in client operating systems (Vista or XP)

The Microsoft Windows Server 2008 Hyper-V role enables you to run multiple virtual machines. Each virtual machine has its own operating system. The following guest operating systems are currently supported:

- Windows Server 2008 (32- and 64-bit)
- Windows Server 2003 SP2 (32- and 64-bit)
- Windows Vista SP1
- Windows XP SP3

Guest operating systems can access storage on a NetApp storage system in three ways:

- As a virtual hard drive (IDE or SCSI) formatted as NTFS. The virtual hard drive is stored on a LUN

- mapped to the Hyper-V parent system. The guest OS must boot from an IDE virtual hard drive.
- As an unformatted (raw) LUN mapped to the Hyper-V parent system and provided to the virtual machine as a physical disk.
- As an iSCSI LUN accessed by an iSCSI initiator running on the guest OS:
 - For Windows Vista, use the built-in iSCSI initiator; multipathing is not supported.
 - For Windows XP, use Microsoft iSCSI initiator 2.07; multipathing is not supported.
 - For Windows Server 2003 and Windows Server 2008, use an iSCSI initiator and a multipathing solution that is supported by NetApp for use on a standard host platform. The guest OS supports the same iSCSI configurations as if it was not running on a virtual machine.

Note: For virtual machines in a high-availability configuration (using failover clustering on the parent), NetApp recommends that you put the configuration files for each virtual machine in a separate LUN. Also, put each boot .vhd file in a separate LUN. Finally, the quorum disk should be in a separate LUN.

3. System Requirements

The following is the current support list; check the NetApp Interoperability Matrix <https://now.netapp.com/matrix/mtx/login.do> for the most up-to-date system requirements or recent qualifications, including the following:

- Support x86, x64, and IA64 release of Windows Server 2003 and Server 2008, Full and Server Core installation
- Support Microsoft Hyper-V on Windows Server 2008 x64 Edition
- Support the following guest OS configurations: Windows XP SP3, Windows Server 2003 SP2, Windows Vista SP1, and Windows Server 2008
- Support 2GB and 4GB solution for both Emulex and QLogic FCP Host Bus Adapters
- Support host side multipathing with Microsoft native "MSDSM" on Server 2008, Microsoft iSCSI DSM for Windows 2003; MSDSM will support FCP MPIO using ALUA and iSCSI MPIO without ALUA; Data ONTAP 7.3 and cmode SSI would be required to support this
- Support FC Boot with the native stack
- Support FC Boot with Symantec™ stack
- Support all NetApp listed implementations of SW iSCSI Boot (as specified in the NetApp Interoperability Matrix)
- Support 32 connections, multiconnection session in IC.0 for iSCSI
- Support direct install of OS to iSCSI boot LUN for supported platforms
- Support crash dump for iSCSI Boot
- Support GA release of the current major Data ONTAP release as well as prior (N-1) release (7.2.x and IC.0)
- Support all FC-enabled platforms running supported Data ONTAP releases at the time of support kit release
- Support failover clustering on Windows Server 2008
- Support maximum disk sizes as supported by Data ONTAP IC.0 and GB.5
- Support VCS on Server 2003 only
- Support the following mixed I/O stacks for both FCP and iSCSI
- MSCS + Veritas DSM on Windows 2003 for iSCSI and FCP
- VCS + Microsoft DSM for iSCSI on Windows Server 2003
- VCS + Data ONTAP DSM for FCP on Windows Server 2003
- Support internationalization to the extent that the HU will output in English if run on a localized OS
- Support all FC-enabled platforms running supported Data ONTAP releases at the time of support kit release
- Support major and minor Data ONTAP upgrades
- Support both a NetApp and IBM branded version of the Host Utilities kit
- Support checking of appropriate hot fixes as part of installation

Note: WHU 5.0 covers support for host side multipathing with the Data ONTAP DSM on Windows Server 2003 and Server 2008.

4. Product Information

If you use the optional SnapDrive for Windows software, be sure that you have a supported combination of the following software:

- SnapDrive for Windows
- iSCSI Windows Host Utilities
- Microsoft Windows operating system
- Microsoft iSCSI software initiator
- Data ONTAP software

For the latest support information, see the following:

- The *Compatibility and Configuration Guide for NetApp FCP and iSCSI Products* at http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/index.shtml.
- *SnapDrive and SnapManager® Compatibility Matrix* at http://now.netapp.com/NOW/knowledge/docs/olio/guides/snapmanager_snapdrive_compatibility/index.shtml.

Note: At this time, Windows Host Utilities 5.0 has not been qualified with SnapDrive for Windows configurations running Veritas Storage Foundation. For the latest support statements, please check the NetApp Interoperability Matrix (IMT) at <http://now.netapp.com/matrix/mtx/login.do>.

5. Infrastructure Support

- Server Platforms
 - Support for x64 white box
 - Support for IBM H and L Class Blade servers
 - Support for HP C-Class Blade servers
 - Support for Dell 1955 / M1000E Blade servers
- HBAs
 - Support existing NetApp-qualified IBM 2Gb and 4Gb rack/tower integrated HBAs
 - Support existing QLogic / Emulex / Dell 4Gb mezzanine cards
 - iSCSI HBA, QLogic 405x/406x
- Switch
 - NetApp-qualified 2/4Gb
- Data ONTAP
 - 7.2.3+
 - SSI controller failover mode

6. Installation

This product includes a Microsoft Installer (MSI) based installation package that should be installed by the customer. A wizard will guide the user through the steps needed to install. This is a standard on the Windows platform.

The WHU 5.0 will use the same WiX-based MSI installer that was used in the last iteration of each kit. There will be very little change from a user's perspective. All standard options available to MSI-based installers are available and supported.

Silent installations are still available:

To do a silent install the following commands could be used:
 msixexec /i <installer.msi> /quiet

There is no dependency on other host-side product installations.

Uninstallation is done through the standard Add/Remove Programs menu, and is designed to clean up any changes made to the machine upon removal.

A silent uninstall is performed with the following commands:

msiexec /x <installer.msi> /quiet

The installation package role is limited to:

1. Checking for appropriate OS patches
2. Detecting the presence of MPIO and protocol requirements
3. Installing multipath I/O feature for Windows Server 2008 if the customer so chooses
4. Verifying and/or updating registry keys that control timeout parameters
5. Making appropriate WMI calls to query for specific information

6. Installing NetApp developed support tools

7. Availability

The Windows Host Utilities kit and corresponding documentation are immediately available for download from NOW™ (NetApp on the Web) as well as available on CD-ROM media.

8. Licensing

No license is needed for installing the Windows Host Utilities.

9. Additional Information

The following table describes documents on the NOW Web site that have the most current information about the host and storage system requirements and supported configurations

If you need information about...	See the following NetApp product documentation...
The most current system requirements for the Windows host	<i>iSCSI & FC Host Support Matrices</i> at http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/index.shtml
The supported storage system models for Data ONTAP licensed with iSCSI or FC	<i>FCP/iSCSI Configuration Guide</i> at http://now.netapp.com/NOW/knowledge/docs/docs.shtml <i>System Configuration Guide</i> for Data ONTAP at http://now.netapp.com
Information about how to configure and manage the iSCSI or FC service on the storage system	The following documents for your Data ONTAP release: • <i>Data ONTAP Block Access Management Guide</i> • <i>Data ONTAP Release Notes</i>
Information about managing the iSCSI initiator	The following documents saved in the C:\WINDOWS\iSCSI directory when the initiator is installed: • <i>Microsoft iSCSI Software Initiator 2.x Users Guide (uguide.doc)</i> • <i>Readme file for installing and using iSCSI Initiator 2.x (readme.txt)</i> • <i>Release notes for iSCSI 2.x Initiator (relnotes.txt)</i>
Information about using iSCSI in a Windows environment	The following Microsoft white paper. Note that this paper is based on the iSCSI software initiator version 1.06. Some details of the Microsoft iSCSI Initiator applet will be different with the initiator version 2.x, but the basic principles in the paper still apply. <i>Deploying IP SANs with the Microsoft iSCSI Architecture</i> , available from the Microsoft Web site at http://www.microsoft.com/windowsserver2003/technologies/storage/iscsi/deployiscsi.msp
Information about installing and configuring SnapDrive for Windows	<i>The SnapDrive for Windows Installation and Administration Guide</i> for your version of SnapDrive
Information about installing and configuring Veritas Storage Foundation	• <i>Veritas Storage Foundation and High Availability Solutions Installation and Upgrade Guide</i> • <i>Veritas Storage Foundation Administrator's Guide</i>

for Windows	
Information about configuring Veritas Cluster Server and Microsoft Cluster Service in Storage Foundation environment	• <i>Veritas Cluster Server Administrator's Guide</i> • <i>Veritas Storage Foundation Administrator's Guide</i>

10. Regulatory Compliance

Products need to be validated against the NetApp Safety/EMI Regulatory Compliance List prior to order submission. This is required to ensure that products are being sold only in the countries in which NetApp has received regulatory compliance certification.

Contact Information: Please contact your NetApp sales or channel partner representative with questions concerning this bulletin.

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