

Product Bulletin



iSCSI ESX Host Utilities 3.x for Native OS

Revision History	Summary of Changes
02 May 2007	Initial Release of Host Utilities 3.0
10 February 2008	Host Utilities 3.1 release with support for ESX Server 3.5

This product bulletin overviews the iSCSI ESX Host Utilities for use with VMware® ESX Server configurations.

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1. Summary

This product bulletin overviews the iSCSI ESX Host Utilities 3.1 for Native OS, with support of VMware ESX Server 3.5 with NetApp iSCSI storage systems.

The iSCSI ESX Host Utilities 3.x are available via NOW™ (NetApp on the Web). The iSCSI ESX Host Utilities are a host-software-based product that delivers tools and documentation to support the integration of NetApp iSCSI storage systems with VMware ESX native host environments using ESX native multipathing, VMware file system (VMFS), Raw Device Mapping (RDM), x86 and x86-64 (AMD64, Xeon EM64T) server architectures, and either the ESX iSCSI software initiator or QLogic iSCSI HBAs. The iSCSI ESX Host Utilities are required to ensure proper configuration and support of NetApp iSCSI storage systems and consists of:

- The sanlun software tool to view paths to LUNs configured on NetApp storage systems
- HBA configuration utility to set automatically the required QLogic iSCSI HBA timeout values on the ESX Server for proper communication to NetApp storage systems
- Diagnostic scripts for collecting and reporting host and NetApp storage configuration information
- Documentation describing how to configure an ESX-host-based iSCSI connection to a NetApp storage system, including commands and procedures
- **Note:** The iSCSI ESX Host Utilities do NOT include HBA drivers, which are distributed by VMware as part of the ESX Server operating system distribution, and the iSCSI ESX Host Utilities do NOT include an iSCSI HBA.

2. What's New

- A. Support for VMware ESX Server 3.5 and VMware Virtual Infrastructure Client 2.5
- B. Removal of RSH requirement with the filer(array)_info script of the iSCSI ESX Host Utilities
- C. sanlun performance improvements in ESX Server environments, particularly with configurations using a large number of LUNs

3. System Requirements

A. Configuration Support Overview

- 1) For the most recent NetApp iSCSI storage system configurations qualified and supported by NetApp with ESX Server, please refer to the NetApp Interoperability Matrix at <http://now.netapp.com/NOW/products/interoperability>.
- 2) The iSCSI ESX Host Utilities provide physical machine-level integration and support. The iSCSI ESX Host Utilities are designed to support the integration of NetApp iSCSI storage systems into ESX Server environments and to be guest operating system neutral. The iSCSI ESX Host Utilities do not currently provide integration tools or capabilities for the guest operating systems. For a complete list of the guest operating systems supported by NetApp with ESX Server, please refer to the NetApp Interoperability Matrix.
- 3) Unless otherwise noted, configuration support applies to both the ESX Server iSCSI software initiator and iSCSI HBAs.
- 4) General configuration support across iSCSI ESX Host Utilities versions:
 - i. VMware VMotion – ESX native clustering technology
 - ii. VMware Distributed Resource Scheduler (DRS)
 - iii. VMware High Availability (HA)
 - iv. iSCSI over teamed NIC ports
 - v. iSCSI boot of virtual machines supported by NetApp
 - vi. iSCSI boot of ESX Server with the iSCSI HBA (currently, QLogic models) required by VMware; current support for booting ESX Server from iSCSI SAN is limited to non-high-availability storage configurations regardless of the virtual machines deployed or whether VMFS or Raw Device Mappings are used.
 - vii. ESX Server native multipath with the iSCSI HBA (currently, QLogic models) required by VMware
 - viii. Virtual LAN (VLAN)
 - ix. Minor and major nondisruptive upgrade (NDU) of Data ONTAP®;
 - x. SnapDrive® for Windows® is supported with Microsoft® software iSCSI initiator configurations in a 32-bit Windows virtual machine (guest operating system configuration). Please see the NetApp Interoperability Matrix and the SnapDrive for Windows support matrix for the most recent support information at <http://now.netapp.com/NOW/products/interoperability> and http://now.netapp.com/NOW/knowledge/docs/olio/guides/snapmanager_snapdrive_compatibility.
- 5) iSCSI ESX Host Utilities 3.1 for Native OS configuration support overview (Supported initially with ESX Server iSCSI software initiator-based configurations. QLogic iSCSI HBA-based configurations and additional configurations are planned for future support. Please see the NetApp Interoperability Matrix for the most recent support information.)

ESX Server iSCSI Software Initiator Support	
ESX Server	3.5
Initiator	Native software iSCSI
CPU architecture	x86 AMD64 (32- and 64-bit) EM64T (32- and 64-bit)
Virtual Machines (VMs)	• Windows XP SP2 (32-bit) • Windows 2000 SP4 (32-bit)

	• Windows Server 2003 SP2 (32- and 64-bit) • Red Hat Enterprise Linux® 5 (32- and 64-bit) • SUSE Linux Enterprise Server 10 (32- and 64-bit) Note: High-availability storage configurations are supported with Linux only with VMFS and when ESX is booted from local disk. Linux virtual machines using VMFS require the following GOS patches: http://kb.vmware.com/kb/51306 and http://kb.vmware.com/kb/1001778.
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6) iSCSI ESX Host Utilities 3.0 for Native OS configuration support overview

ESX Server iSCSI Software Initiator Support	
ESX Server	3.0.1, 3.0.2
Initiator	Native software iSCSI
CPU architecture	x86 AMD64 (32-bit mode only) EM64T (32-bit mode only)
Virtual Machines (VMs)	• Windows 2000 (32-bit) • Windows Server 2003 (32- and 64-bit) • Red Hat Enterprise Linux 4 update 3 (32- and 64-bit) • SUSE Linux Enterprise Server 9 SP3 (32- and 64-bit) Note: High-availability storage configurations are supported only with VMFS and when ESX is booted from local disk.

ESX Server iSCSI HBA Support	
ESX Server	3.0.1, 3.0.2
HBAs	QLA4050, QLA4052 QMC4052, QMC4052R
CPU architectures	x86 AMD64 (32-bit mode only) EM64T (32-bit mode only)
Virtual Machines (VMs)	• Windows 2000 (32-bit) • Windows Server 2003 (32- and 64-bit) • Red Hat Enterprise Linux 4 update 4 (32- and 64-bit) • SUSE Linux Enterprise Server 9 SP3 (32- and 64-bit) • Solaris™ 10 x86 (32- and 64-bit) Note: High-availability storage configurations are supported only with VMFS and when ESX is booted from local disk.

7) A product variance request (PVR) is currently required for the following virtual machines (guest operating systems):

- i. Microsoft Windows NT® 4
- ii. Novell NetWare 5.1, 6.0, 6.5
- iii. Red Hat Enterprise Linux 2.1, 3.0 (32- or 64-bit)
- iv. SUSE Linux Enterprise Server 8 (32- or 64-bit)

- v. Solaris 10 x86 (32- or 64-bit) with the ESX Server iSCSI software initiator

4. Product Information

A. Availability

- 1) The NetApp iSCSI ESX Host Utilities are available for download free of charge from the [NOW](#) (NetApp on the Web) site.
- 2) NetApp continues to offer the Data ONTAP iSCSI license free of charge to qualifying customers via the iSCSI Enablement Program. Details about the iSCSI license enablement program are available at <http://now.netapp.com/NOW/products/iSCSI>.
- 3) The VMware ESX Server software iSCSI initiator and the QLogic iSCSI HBA driver supported by NetApp are bundled with the ESX Server distribution.

B. Quoting

- 1) There is no NetApp license, part number, or price for the iSCSI ESX Host Utilities. The NetApp iSCSI ESX Host Utilities are available for download free of charge from the [NOW](#) (NetApp on the Web) site.

C. Upgrades

- 1) Before upgrading to the iSCSI ESX Host Utilities 3.1, users must remove the previous iSCSI Host Utilities 3.0 or earlier iSCSI Support Kits.

D. VMware Certifications

- 1) For NetApp iSCSI storage system configurations certified with VMware with ESX Server, please refer to the VMware Storage/SAN Compatibility Guide for ESX Server 3.5 at www.vmware.com/pdf/vi35_san_guide.pdf and the VMware Storage/SAN Compatibility Guide for ESX Server 3.0.x at www.vmware.com/pdf/vi3_san_guide.pdf.

5. Regulatory Compliance

Products need to be validated against the NetApp Regulatory Compliance Country List prior to distribution. . This is required to ensure that products are distributed only in the countries in which NetApp has received regulatory compliance certification.

6. Warranty and Service

The iSCSI Host Utilities are provided free of charge and on an as-is basis. A software subscription plan is not provided for the iSCSI Host Utilities. Users may download and install new versions of the iSCSI Host Utilities and use in configurations qualified by NetApp.

7. Additional Information

For NetApp iSCSI storage system configurations qualified and supported by NetApp with ESX Server, please refer to the NetApp Interoperability Matrix at <http://now.netapp.com/NOW/products/interoperability>.

For NetApp iSCSI storage system configurations certified with VMware ESX Server, please refer to the VMware Storage/SAN Compatibility Guide for ESX Server 3.5 at www.vmware.com/pdf/vi35_san_guide.pdf and the VMware Storage/SAN Compatibility Guide for ESX Server 3.0.x at www.vmware.com/pdf/vi3_san_guide.pdf.

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