IBM System Storage N series – iSCSI

Interoperability Matrix

Covering: **N3700 System Hardware (2863-A10, 2863-A20)**
N5000 System Hardware (2864-A10, 2864-A20, 2865-A10, 2865-A20, 2868-A10, 2868-A20, 2861-001)
N7000 System Hardware (2866-A10, 2866-A20, 2867-A10, 2867-A20)
N3700, N5000, N7000 Licensed Functions (2870-631, 2870-632, 2870-641, 2870-642, 2870-651, 2870-652, 2870-661, 2870-662, 2870-671, 2870-672)

iSCSI Software Initiator for AIX

- A Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes
Operating System	AIX 5.2 ML3 - ML7, TL8 - TL8 SP2 AIX 5.3 ML2 - ML3, TL4 - TL4 SP3	Recommended Patches: AIX 5.2 ML3 - ML7 with PTF U478055 and PTF U478057 AIX 5.3 ML2 - ML3 with PTF U478111 and PTF U478194
IBM Host Support Kit	iSCSI AIX Support Kit	
iSCSI Software Initiator	Included with base OS media	It is recommended that you change the default initiator name as follows: chdev -l iscsi0 -a initiator_name=iqn.1996-4.aixhost1.hostid.0a3cac46 **If using iSCSI AIX Support Kit 1.0 only** - It is recommended that you set the value of rw_timeout on "Other iSCSI disk devices" to 60: chdev -l hdisk2 -a rw_timeout=60 - IBM recommends that the default queue depth of 1 not be changed.
Hardware Platform	IBM eServer pSeries and p5 servers IBM BladeCenter JS20 (PowerPC)	
Data ONTAP	7.1H2 or higher	
Host Multipathing	Not supported	
Host Clustering	Not supported	
IBM SnapDrive	SnapDrive 2.0.1 for UNIX or higher	See SnapDrive for UNIX Compatibility Matrix for supported configurations.
SAN Boot	Not supported	

iSCSI Software Initiator for HP-UX

- A Host Support Kit contains technical publications and support tools for the specified environment.
- HP-UX iSCSI Device Drivers are available from HP web site from the link below in the Driver column.

Component	Version/Type	Notes
Operating System	HP-UX 11i v1 HP-UX 11i v2 HP-UX 11.23 v2 September 2004	Recommended Patches: HP-UX 11i v1 PHKL_27321, PHKL_27096, PHKL_28209, PHKL_29047 PHKL_30510, PHKL_3051, PHCO_27374, PHCO_28319 PHNE_26939, PHSS_30101 (Requires installation of the HP-UX 11i v1 Hardware Enablement bundle: HWE0406.) HP-UX 11i v2 Recommended patches: PHSS_30041 HP-UX 11.23 v2 September 2004 None
IBM Host Support Kit	iSCSI HP-UX Support Kit	
iSCSI Software Initiator	HP-UX iSCSI Software Initiator B.11.11.03e	
Hardware Platform	HP 9000 series HP Integrity servers	
Data ONTAP	7.1H2 or higher	
Host Multipathing	HP-UX PVLinks or IP trunking	
Host Clustering	Not supported	
IBM SnapDrive	SnapDrive 2.0 for UNIX or higher	See SnapDrive for UNIX Compatibility Matrix for supported configurations.
SAN Boot	Not supported	

For a complete list of qualified iSCSI Targets on HP-UX please visit
http://www.hp.com/products1/unixserverconnectivity/mass_storage_devices.html

iSCSI Software Initiators for Red Hat Enterprise Linux (RHEL)

- IBM Host Support Kit contains technical publications and support tools for the specified environment

RHEL 3.0 Update 4

Component	Version/Type	Notes
Operating	RHEL 3.0 Update 4	

System		
IBM Host Support Kit	iSCSI Red Hat Enterprise Linux Support Kit 1.3	
iSCSI Software Initiator	Version 3.6.2	Software initiator contained in Red Hat Enterprise Linux distribution
Hardware Platform	x86, Advanced Micro Devices (AMD) x86-64, Intel EM64T, IA64 based systems	Software initiator is supported in a virtual machine on top of VMware ESX Server 2.5.x & 3.0.
Data ONTAP	7.1H2 or greater	
Host Multipathing	IP trunking and Portal Failover	
Host Clustering	Not supported	
IBM SnapDrive	SnapDrive 2.0 for UNIX or higher	See SnapDrive for UNIX Compatibility Matrix for supported configurations.
SAN Boot	Not supported	
Additional Notes		

RHEL 4.0 Update 2

Component	Version/Type	Notes
Operating System	RHEL 4.0 Update 2	
IBM Host Support Kit	iSCSI Red Hat Enterprise Linux Support Kit 1.3	
iSCSI Software Initiator	kernel module: 4:0.1.11-1 iscsi-initiator-utils RPM: 4.0.3.0-2	Software initiator contained in Red Hat Enterprise Linux distribution
Hardware Platform	x86, Advanced Micro Devices (AMD) x86-64, Intel EM64T, IA64 based systems	Software initiator is supported in a virtual machine on top of VMware ESX Server 2.5.x & 3.0.
Data ONTAP	7.1H2 or greater	
Host Multipathing	IP trunking	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	
Additional Notes		

RHEL 4.0 Update 3

Component	Version/Type	Notes
Operating	RHEL 4.0 Update 3	

System		
IBM Host Support Kit	iSCSI Red Hat Enterprise Linux Support Kit 1.4	
iSCSI Software Initiator	kernel module: 4:0.1.11-2 iscsi-initiator-utils RPM: 4.0.3.0-3	Software initiator contained in Red Hat Enterprise Linux distribution
Hardware Platform	x86, Advanced Micro Devices (AMD) x86-64, Intel EM64T, IA-64	Software initiator is supported in a virtual machine on top of VMware ESX Server 2.5.x & 3.0.
Data ONTAP	7.1H2 or greater	
Host Multipathing	IP trunking, Device-Mapper	Device-mapper is supported in Active-Active (round-robin) mode only.
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	
Additional Notes		

Hardware Initiators for Red Hat

Adaptec HBA 7211C/F - Hardware Initiator (Red Hat Enterprise Linux 2.1)

iSCSI Software Initiators for SuSE Linux Enterprise Server (SLES

SLES 8 and 9

Component	Version/Type	Notes
Operating System	SLES 8 SP3, SLES8 SP 4 SLES 9, SLES 9 SP1, SLES 9 SP2, SLES 9 SP3	For SLES 9, REISER file systems supported only with SP1 and later.
IBM Host Support Kit	iSCSI SuSE Linux Support Kit	
iSCSI Software Initiator	Provided with the SuSE Linux distribution	IBM recommends and only supports the SuSE supplied iSCSI initiators
Hardware Platform	x86 based systems and Advanced Micro Devices (AMD), Intel EM64T, x86-64, IA-64 systems	EM64T not supported with SLES8 IA-64 supported with SLES9 SP3 only. Software initiator is supported in a virtual machine on top of VMware ESX Server 2.5.x & 3.0.
Data ONTAP	7.1H2	7.1H2 supported with SLES 9 SP1and higher and SLES 8 SP4 only

Host Multipathing	IP trunking, Device-Mapper	Device-mapper is supported in Active-Active (round-robin) mode only.
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	
Additional Notes		

iSCSI Software Initiator for Solaris

- An IBM Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes
Operating System	Solaris 10, Update 1	
IBM Host Support Kit	iSCSI Solaris Support Kit 1.0	
iSCSI Software Initiator	Included with base OS media	
Hardware Platform	SPARC, AMD64	Software initiator is supported in a virtual machine on top of VMware ESX Server 2.5.x & 3.0.
Data ONTAP	7.1H2 or higher	
Host Multipathing	Solaris IP/MP Solaris MPxIO	MPxIO support for Active/Active (Round-Robin) only
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	

iSCSI Software Initiator for Microsoft

- Use with any Microsoft® Windows® Catalog certified Network Interface Card (NIC) and driver configured to use the TCP/IP protocol.
- Host Support Kits are available from Software Download page or from the links below. A Host Support Kit contains technical publications and support tools for the specified environment.

Microsoft Windows 2000

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server Microsoft Windows 2000 Advanced Server + SP3/SP4	
iSCSI Software Initiator	Microsoft iSCSI Software Initiator version 1.05a Microsoft iSCSI Software Initiator version 1.06 Microsoft iSCSI Software Initiator version 2.0 Microsoft iSCSI Software Initiator version 2.01	On the Microsoft Download Center page, enter "iSCSI initiator" in the search field and click "Go".
IBM Host Support Kit	Support Kit on IBM NAS Support Site	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or higher	Software initiator 2.01 is supported with Data ONTAP 7.1H2 or higher
Host Multipathing	Microsoft Multipath IO (MPIO) Multiple Connection Sessions (MCS)	NIC teaming / trunking (802.3ad) is not supported. NTAPDSM is supported. - NTAPDSM is part of SnapDrive 3.2 or higher and requires software initiator version 2.0 or higher. - NTAPDSM is not supported in configurations with Veritas Storage Foundation.. - See the SnapDrive/ONTAP Compatibility section for information on SnapDrive/Data ONTAP compatibility. Microsoft iSCSI DSM is supported. - Microsoft iSCSI DSM requires software initiator 2.01 - Microsoft iSCSI DSM is supported in active-passive & active-active (Round-Robin and Weighted Path only) modes. - Note: If implementing active-active MPIO with Microsoft iSCSI DSM, 2.01 software initiator, and MSCS, please contact IBM Global Services for additional information pertaining to a problem where drives may be in

		accessible after a cluster node is rebooted. Veritas Storage Foundation, and therefore Veritas DSM, is not supported on Windows 2000. Multiple Connection Sessions (MCS) requires Microsoft s/w initiator 2.0 or higher and Data ONTAP 7.1H2 or higher.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Microsoft Cluster Server (MSCS)	Microsoft Windows 2000 with MSCS support provided by IBM with software initiator versions 1.05a and 1.06 only. Microsoft Windows 2000 with MSCS is not supported with software initiator version 2.0 or higher. Veritas Storage Foundation with High Availability, and therefore Veritas Cluster Server, is not supported on Windows 2000.
IBM SnapDrive	SnapDrive 4.1 with software initiator version 2.01 or 2.02. See the SnapDrive/ONTAP Compatibility section for information on SnapDrive/Data ONTAP compatibility.	SnapDrive for Windows is not support with : • Microsoft iSCSI DSM
iSNS	Microsoft iSNS server 3.0	The Data ONTAP option iscsi.isns.rev must be set correctly for the version of iSNS server used.
Multi-Connection Sessions	Supported	Requires software initiator version 2.0 or higher and Data ONTAP 7.1H2 or higher. See the IBM Data ONTAP 7.1 Block Access Management Guide for more information. Only Round Robin load balancing policy is support by IBM at this time.
Error Recovery Levels 1 & 2	Supported	Requires software initiator version 2.0 or higher and Data ONTAP 7.1 or higher. See the IBM Data ONTAP 7.1 Block Access Management Guide for more information.
SAN Boot	Not supported	SAN Boot is not supported with the iSCSI software initiator. SAN Boot is only supported using iSCSI hardware initiators. Please refer to the SAN Boot section of the supported iSCSI hardware initiators in this matrix for OS-specific SAN Boot support details.

Microsoft Windows 2003

Component	Version/Type	Notes
Operating System	Microsoft Windows Server 2003 Microsoft Windows Server 2003 SP1	

	Microsoft Windows Server 2003 R2	
iSCSI Driver	[Microsoft iSCSI Software Initiator version 1.06](#) [Microsoft iSCSI Software Initiator version 2.0](#) [Microsoft iSCSI Software Initiator version 2.01](#) [Microsoft iSCSI Software Initiator version 2.02](#)	On the Microsoft Download Center page, enter "iSCSI initiator " in the search field and click "Go".
IBM Host Support Kit	[Support Kit on IBM NAS Support Site](#)	
Hardware Platform	x86 based systems Advanced Micro Devices (AMD) x86-64, Intel EM64T based systems IA64 based systems	IA64 is supported only with software initiator version 1.06. x86-64 and Intel EM64T is supported with software initiator version 2.0 or higher and in both 32-bit 64-bit modes.
Data ONTAP	7.1H2 or higher	Software initiator 2.02 is supported with Data ONTAP 7.1H2 or higher Software initiator 2.01 is supported with Data ONTAP 7.1H2 or higher Veritas Storage Foundation 4.3 is supported with 7.1H2 or higher
Host Multipathing	Microsoft Multipath IO (MPIO) Multiple Connection Sessions (MCS)	NIC teaming / trunking (802.3ad) is not supported. NTAPDSM is supported - NTAPDSM is part of SnapDrive 3.2 or higher and requires software initiator version 2.0 or higher. - NTAPDSM is not supported in configurations with Veritas Storage Foundation. - See the SnapDrive/ONTAP Compatibility section for information on SnapDrive/Data ONTAP compatibility. Microsoft iSCSI DSM is supported. - Microsoft iSCSI DSM requires software initiator 2.01 - Microsoft iSCSI DSM is supported in active-passive & active-active (Round-Robin and Weighted Path only) modes. - Note: If implementing active-active MPIO with Microsoft iSCSI DSM, 2.01 software initiator, and MSCS, please

		contact IBM Global Services for additional information pertaining to a problem where drives may be in accessible after a cluster node is rebooted. Veritas DSM is supported and requires Veritas Storage Foundation 4.3 and SFW4.3 Maintenance Patch 1. Veritas DSM with Veritas Cluster Server is supported and requires Veritas Storage Foundation 4.3 with High Availability and SFW4.3 Maintenance Patch 1. Multiple Connection Sessions (MCS) requires Microsoft software initiator version 2.0 or higher and Data ONTAP 7.1H2 or higher.
Disk Type	Basic disks	Dynamic disks supported only if using Veritas Storage Foundation 4.3
Host Clustering	Microsoft Cluster Server (MSCS) Veritas Cluster Server (VCS)	MSCS with MCS is supported, and requires Microsoft software initiator version 2.0 and Data ONTAP 7.1 or higher. Veritas Cluster Server requires Veritas Storage Foundation 4.3 with High Availability. Veritas Cluster Server with Veritas DSM requires Veritas Storage Foundation 4.3 with High Availability and SFW4.3 Maintenance Patch 1. VCS with MCS is not supported.
IBM SnapDrive	SnapDrive 4.1 with software initiator version 2.01 or 2.02. See the [SnapDrive/ONTAP Compatibility Matrix](#) for information on SnapDrive/Data ONTAP compatibility.	SnapDrive is not supported with: • Microsoft iSCSI DSM • Veritas Storage Foundation 4.3 See the SnapDrive/ONTAP Compatibility section for information on SnapDrive/Data ONTAP compatibility.
iSNS	Microsoft iSNS server 3.0	The Data ONTAP option iscsi.isns.rev must be set correctly for the version of iSNS server used.
Multi-Connection Sessions	Supported	Requires software initiator version 2.0 or higher and Data ONTAP 7.1 or higher. See the Data ONTAP 7.1 Block Access Management Guide for more information.

		Only Round Robin load balancing policy is supported by IBM at this time.
Error Recovery Levels 1 & 2	Supported	Requires software initiator version 2.0 or higher and Data ONTAP 7.1 or higher. See the Data ONTAP 7.1 Block Access Management Guide for more information.
SAN Boot	Not supported	SAN Boot is not supported with the iSCSI software initiator. SAN Boot is only supported using iSCSI hardware initiators. Please refer to the SAN Boot section of the supported iSCSI hardware initiators in this matrix for OS-specific SAN Boot support details.
Additional Notes		

For a complete list of IBM N series iSCSI Targets that have been qualified within the Microsoft Windows Catalog please visit
http://download.microsoft.com/download/c/b/0/cb05a3e3-2f85-4714-ab36-6491b366bfd9/DFW-qualified-iSCSI-hardware1.xls

iSCSI Software Initiator for Novell NetWare

- Use NSS or NWFS file systems
- An IBM Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes
Operating System	Novell NetWare 5.1 with Support Pack 6 Novell NetWare 6.0 with Support Pack 3 Novell NetWare 6.5	With Novell NetWare 6.5, a custom script can be used for freeze/thaw of snapshots.
IBM Host Support Kit	iSCSI Novell NetWare Support Kit	
iSCSI Software Initiator	Version 1.1	
Hardware Platform	Any Novell NetWare supported server platform	
HBA	Any Novell NetWare supported NIC using TPC/IP	
Data ONTAP	7.1H2 or higher	
Host Multipathing	Novell NetWare multipathing or IP trunking	
Host Clustering	Novell NetWare clustering	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	

iSCSI Hardware Initiator (TOE) Compatibility Matrix

Adaptec iSCSI Adapter 7211C/F

The Adaptec iSCSI Adapter 7211 comes in two versions:

- The F version is for fibre
- The C version is for copper

An IBM N series Host Support Kit contains technical publications and support tools for the specified environment.

Microsoft Windows 2000

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server Microsoft Windows 2000 Advanced Server + SP3/SP4 Microsoft Windows NT 4.0 Server + SP6	
IBM Host Support Kit	Adaptec iSCSI Support Kit (Windows)	
Driver	1.0.1.86	I/O retries = 3, session recovery timeout = 180
Firmware	1.0.89b	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	
Host Multipathing	None	
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	

Red Hat Enterprise Linux (RHEL)

Component	Version/Type	Notes
Operating System	RHEL Advanced Server 2.1	
IBM Host Support Kit	Adaptec iSCSI Support Kit (Linux)	
Driver	1.0.1.86A	I/O retries = 3, session recovery timeout = 300

Firmware	1.0.89b	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	
Host Multipathing	None	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	

Alacritech iSCSI HBA SES1000T/F

The Alacritech iSCSI HBA SES1001T/F comes in two versions:

- The F version is for fibre
- The T version is for copper

An IBM N series Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server & Advanced Server Microsoft Windows 2000 Data Center Server with Service Pack 4 Microsoft Windows Server 2003 (All X86 Editions) Microsoft Windows Server 2003 Server R2	
IBM Host Support Kit	iSCSI Alacritech Support Kit (Windows)	
Driver	6.2.1.0, 7.1.2.2	
Firmware	N/A	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	
Host Multipathing	None	
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Microsoft Cluster Server (MSCS)	Supported with Windows 2003
IBM SnapDrive	SnapDrive 3.1.1R1	Supported with Microsoft's iSCSI software initiator 1.06 and 2.0 only

SAN Boot	Not supported	

Alacritech iSCSI HBA SES2001/SES2002 T/F Series

- SES2001XT - Single port copper PCI-X
- SES2002XT - Dual port copper PCI-X
- SES2002XF - Dual port fiber PCI-X

An IBM N series Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server & Advanced Server Microsoft Windows 2000 Data Center Server with Service Pack 4 Microsoft Windows Server 2003 (All X86 Editions) Microsoft Windows Server 2003 Server R2	
IBM Host Support Kit	iSCSI Alacritech Support Kit 2.0 (Windows)	
Driver	7.3.0.1	
Firmware	N/A	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	
Host Multipathing	None	
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Microsoft Cluster Server (MSCS)	Supported with Windows 2003
IBM SnapDrive	3.1.1R1, 3.2	Supported with Microsoft's iSCSI software initiator 2.0 only
SAN Boot	Not supported	

Alacritech iSCSI HBA SES2102/SES2104 T/F Series

- SES2102ET - Dual port copper PCI-Express
- SES2102EF - Dual port fiber PCI-Express
- SES2104ET - Quad port copper PCI-Express
- SES2104EF - Quad port fiber PCI-Express

An IBM N series Host Support Kit contains technical publications and support tools for the specified environment.

Component	Version/Type	Notes

	Microsoft Windows 2000 Server & Advanced Server Microsoft Windows 2000 Data Center Server with Service Pack 4 Microsoft Windows Server 2003 (All X86 Editions) Microsoft Windows Server 2003 R2	
Operating System		
IBM Host Support Kit	iSCSI Alacritech Support Kit 2.0 (Windows)	
Driver	7.3.0.1	
Firmware	N/A	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or higher	
Host Multipathing	None	
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Microsoft Cluster Server (MSCS)	Supported with Windows 2003
IBM SnapDrive	SnapDrive 3.1.1R1, 3.2, or 4.0	Supported with Microsoft's iSCSI software initiator 2.0 only
SAN Boot	Not supported	

QLogic iSCSI QLA4010 HBA

The QLogic iSCSI QLA4010 HBA comes in two versions:

- The QLogic QLA4010 is for fibre
- The QLogic QLA4010c is for copper

An IBM N series Host Support Kit contains technical publications and support tools for the specified environment.

Microsoft Windows 2000

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server Microsoft Windows 2000 Advanced Server	
IBM Host Support Kit	QLogic iSCSI Support Kit (Windows)	
Driver	2.1.0.1, 2.1.0.3, or 2.1.2.0 (SCSIport)	Use 2.1.0.1 driver with 02.00.00.05 firmware Use 2.1.0.3 or 2.1.2.0 driver with 03.00.00.04 firmware
Firmware	02.00.00.05 or 03.00.00.04	Use 02.00.00.05 firmware with 2.1.0.1 driver Use 03.00.00.04 firmware with 2.1.0.3 or 2.1.2.0 driver

SANsurfer iSCSI HBA Manager	4.01.00 or 4.02.20	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	Veritas Storage Foundation 4.3 is supported with 7.0.x and 7.1.
Host Multipathing	Microsoft Multipath IO (MPIO)	NTAPDSM is supported • NTAPDSM is part of SnapDrive 3.2 or higher. • NTAPDSM is not supported in configurations with Veritas Storage Foundation. • See the SnapDrive/ONTAP Compatibility Matrix for information on SnapDrive/Data ONTAP compatibility. Microsoft iSCSI DSM is not supported. Veritas Storage Foundation, and therefore Veritas DSM, is not supported on Windows 2000.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Not supported	
IBM SnapDrive	SnapDrive 3.1 or higher.	See the SnapDrive/ONTAP Compatibility Matrix for information on SnapDrive/Data ONTAP compatibility.
SAN Boot	Supported	QLA4010 requires QLogic BIOS V 1.08, 1.09 or 1.11 for SAN boot capability

Microsoft Windows Server 2003

Component	Version/Type	Notes
Operating System	Microsoft Windows Server 2003 Microsoft Windows Server 2003 R2	
IBM Host Support Kit	QLogic iSCSI Support Kit (Windows)	
Driver	2.1.0.1, 2.1.0.3, or 2.1.2.0 (SCSIport) 2.1.0.6, 2.1.0.8, or 2.1.2.5 (STORport)	Use 02.00.00.05 firmware with 2.1.0.1 or 2.1.0.6 driver Use 03.00.00.04 firmware with 2.1.0.3, 2.1.0.8, 2.1.2.0, or 2.1.2.5 driver
Firmware	02.00.00.05 or 03.00.00.04	Use 02.00.00.05 firmware with 2.1.0.1 or 2.1.0.6 driver Use 03.00.00.04 firmware with 2.1.0.3, 2.1.0.8, 2.1.2.0, or 2.1.2.5
SANsurfer iSCSI HBA Manager	4.01.00 or 4.02.20	

Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or greater	Veritas Storage Foundation 4.3 is supported with 7.0.x and 7.1.
Host Multipathing	Microsoft Multipath IO (MPIO)	NTAPDSM is supported • NTAPDSM is part of SnapDrive 3.2 or higher. • NTAPDSM is not supported in configurations with Veritas Storage Foundation. • See the SnapDrive/ONTAP Compatibility Matrix for information on SnapDrive/Data ONTAP compatibility. Veritas DSM is supported and requires Veritas Storage Foundation 4.3, SFW4.3 Maintenance Patch 1, and QLA-4010 driver 2.1.0.8 and firmware 03.00.00.04. Veritas DSM with Veritas Cluster Server is supported and requires Veritas Storage Foundation 4.3 with High Availability, SFW4.3 Maintenance Patch 1, and QLA-4010 driver 2.1.0.8 and firmware 03.00.00.04.
Disk Type	Basic disks	Dynamic disks supported only if using Veritas Storage Foundation 4.3
Host Clustering	Microsoft Cluster Server (MSCS) Veritas Cluster Server (VCS)	Veritas Cluster Server requires Veritas Storage Foundation 4.3 with High Availability. Veritas Cluster Server with Veritas DSM requires Veritas Storage Foundation 4.3 with High Availability, SFW4.3 Maintenance Patch 1, and QLA-4010 driver 2.1.0.8 and firmware 03.00.00.04.
IBM SnapDrive	SnapDrive 3.1 or higher.	Veritas Storage Foundation 4.3, VCS and MPIO with Veritas DSM are not supported with SnapDrive See the SnapDrive/ONTAP Compatibility Matrix for information on SnapDrive/Data ONTAP compatibility.
SAN Boot	Supported	QLA4010 requires QLogic BIOS V 1.08, 1.09 or 1.11 for SAN boot capability. A minimum of two iSCSI HBAs are needed per server in an MSCS cluster when in a SAN boot configuration.

Red Hat Enterprise Linux (RHEL), SuSE Linux (SLES) - 32-bit and 64-bit

Component	Version/Type	Notes
Operating System	RHEL Advanced Server 2.1 Update 6 RHEL Advanced Server 3.0 Update 4 RHEL Advanced Server 4.0 Update1	32-bit support only for SLES 8

	SLES 8 SP3 SLES 9 SP1 SLES9 SP2	
IBM Host Support Kit	iSCSI Support Kit (Red Hat Linux)	
Driver	3.10, 3.22, 5.0.0.2 or 5.00.04-2	Version 3.10 supported on 32-bit platforms. Version 3.22 supported on 32-bit and 64-bit platforms. Use 3.10 or 3.22 driver with 02.00.00.05 firmware Use 5.0.0.2 or 5.00.04-2 driver with 03.00.00.04 firmware
Firmware	02.00.00.05, 03.00.00.04	Version 02.00.00.05 supported on 32-bit platforms. Version 03.00.00.04 supported on 32-bit and 64-bit platforms. Use 02.00.00.05 firmware with 3.10 or 3.22 driver Use 03.00.00.04 firmware with 5.0.0.2 or 5.00.04-2 driver
SanSurfer Manager	4.01.00 or 4.02.20	
Hardware Platform	32-bit: x86 based systems 64-bit: AMD64, EM64T based systems	EM64T not supported with SLES 8
Data ONTAP	7.1H2 or greater	
Host Multipathing	Not supported	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Supported	QLA4010 requires QLlogic BIOS V 1.08, 1.09 or 1.11 for SAN boot capability.
Additional Notes		

Solaris

Component	Version/Type	Notes
Operating System	Solaris 8, Solaris 9, Solaris 10 Update 1	QLA4010 is not supported on Solaris 10 prior to Update 1
IBM Host Support Kit	iSCSI Support Kit (Solaris)	
Driver	3.03, 4.01	Version 3.03 is supported with Solaris 8 or Solaris 9

		Version 4.01 is supported with Solaris 9 or Solaris 10 Update 1
Firmware	01.00.00.08, 03.00.00.04	Version 01.00.00.08 is supported with Solaris 8 or Solaris 9 Version 03.00.00.04 is supported with Solaris 9 or Solaris 10 Update 1
SANSurfer Manager	4.02.22	
Hardware Platform	SPARC 32 and 64-bit based systems	QLA4010 on Solaris 10 Update 1 is supported on SPARC only
Data ONTAP	7.1H2 or higher	Data ONTAP 7.1H2 and higher are supported with Solaris 9 or Solaris 10 Update 1 with Driver 4.01 and Firmware 03.00.00.04 and higher
Host Multipathing	None	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	
Additional Notes		

QLogic iSCSI QMC4052 HBA

The QLogic iSCSI QMC4052 HBA for IBM Blade Server comes in one version:

• QLogic QMC4052 (fibre only)

A IBM Host Support Kit contains technical publications and support tools for the specified environment.

Microsoft Windows 2000

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4	
IBM Host Support Kit	iSCSI Support Kit (Windows)	
Driver	2.1.0.1 (SCSIport)	
Firmware	1.00.00.07	BIOS version 1.03
SANsurfer iSCSI HBA Manager	4.01.11	
Hardware	x86 based systems	

Platform		
Data ONTAP	7.1H2 or higher	
Host Multipathing	Microsoft Multipath IO (MPIO)	NTAPDSM is supported • NTAPDSM is part of SnapDrive 3.2 or higher. • See the SnapDrive/ONTAP Compatibility Matrix section for information on SnapDrive/Data ONTAP compatibility. MPIO is not supported with MSCS. Veritas Storage Foundation is not supported with QMC4052.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Microsoft Cluster Server (MSCS)	MSCS is not supported with MPIO Veritas Storage Foundation is not supported with QMC4052.
IBM SnapDrive	SnapDrive 3.2 or higher	See the SnapDrive/ONTAP Compatibility Matrix section for information on SnapDrive/Data ONTAP compatibility.
SAN Boot	Not supported	
Additional Notes		

Microsoft Windows Server 2003

Component	Version/Type	Notes
Operating System	Microsoft Windows Server 2003 SP1 Microsoft Windows Server 2003 R2	
IBM Host Support Kit	iSCSI Support Kit (Windows)	
Driver	2.1.1.5 (STORport)	
Firmware	1.00.00.07	BIOS version 1.03
SANsurfer iSCSI HBA Manager	4.01.11	
Hardware Platform	x86 based systems	
Data ONTAP	7.1H2 or higher	
Host Multipathing	Microsoft Multipath IO (MPIO)	NTAPDSM is supported • NTAPDSM is part of SnapDrive 3.2 or higher and requires software

		initiator version 2.0 or higher. • See the SnapDrive/ONTAP Compatibility Matrix section for information on SnapDrive/Data ONTAP compatibility. MPIO is not supported with MSCS. Veritas Storage Foundation is not supported with QMC4052.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Not supported	MSCS is not supported with MPIO.
IBM SnapDrive	SnapDrive 3.2 or higher	See the SnapDrive/ONTAP Compatibility Matrix section for information on SnapDrive/Data ONTAP compatibility.
SAN Boot	Supported	

QLogic iSCSI QLA405X HBA

The QLogic QLA405X family of iSCSI HBA consists of:

- QLogic QLA4050C (1-port copper)
- QLogic QLA4052C (2-port copper)

An IBM Host Support Kit contains technical publications and support tools for the specified environment.

Microsoft Windows 2000

Component	Version/Type	Notes
Operating System	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4	
IBM Host Support Kit	QLogic iSCSI Support Kit (Windows)	
Driver	2.1.3.4 (SCSIport)	Jumbo frames not supported. VLANs not supported. This version of software is currently only available for download from the download page of the QLogic web site at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
Firmware	2.00.00.45	BIOS version 1.09 This version of software is currently only available for download from the download page of the QLogic web site

		at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
SANsurfer iSCSI HBA Manager	4.03.18	This version of software is currently only available for download from the download page of the QLogic web site at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
Hardware Platform	x86, AMD64 & EM64T based systems	
Data ONTAP	7.0.x, 7.1.1	
Host Multipathing	Microsoft Multipath IO (MPIO)	Microsoft iSCSI DSM is supported (active-passive & active-active modes). NTAPDSM is not supported. Veritas Storage Foundation is not supported with QLA405X. Veritas DSM is not supported. MPIO is not supported with MSCS.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Supported	QLA405X requires QLogic BIOS version 1.09 for SAN boot capability.
Additional Notes • The QLA405X family of iSCSI HBA supports Jumbo Frames, but at this time use of Jumbo Frames is not supported. • Use of VLANs is not supported with the QLA405X family of iSCSI HBAs.		

Microsoft Windows Server 2003

Component	Version/Type	Notes
Operating System	Microsoft Windows Server 2003 SP1 Microsoft Windows Server 2003 R2	
IBM Host Support Kit	QLogic iSCSI Support Kit (Windows)	
Driver	2.1.3.4	Jumbo frames not supported.

	(SCSIport) 2.1.3.9 (STORport)	VLANs not supported. This version of software is currently only available for download from the download page of the QLogic web site at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
Firmware	2.00.00.45	BIOS version 1.09 This version of software is currently only available for download from the download page of the QLogic web site at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
SANsurfer iSCSI HBA Manager	4.03.18	This version of software is currently only available for download from the download page of the QLogic web site at http://support.qlogic.com/support/oem_product_list.asp?oemid=372
Hardware Platform	x86, AMD64, & EM64T based systems	
Data ONTAP	7.0.x, 7.1.1	
Host Multipathing	Microsoft Multipath IO (MPIO)	Microsoft iSCSI DSM is supported (active-passive & active-active modes). NTAPDSM is not supported. Veritas Storage Foundation is not supported with QLA405X. Veritas DSM is not supported. MPIO is not supported with MSCS.
Disk Type	Basic disks only	Dynamic disks not supported
Host Clustering	MSCS	
IBM SnapDrive	Not supported	
SAN Boot	Supported	QLA405X requires QLogic BIOS version 1.09 for SAN boot capability.

Additional Notes

- The QLA405X family of iSCSI HBA supports Jumbo Frames, but at this time use of Jumbo Frames is not supported.
- Use of VLANs is not supported with the QLA405X family of iSCSI HBAs.

Red Hat Enterprise Linux (RHEL), SuSE Linux (SLES) - 32-bit and 64-bit

Component	Version/Type	Notes
Operating System	RHEL Advanced Server 3.0 Update 7 RHEL Advanced Server 4.0 Update 3 SLES8 SP4 SLES9 SP3	
IBM Host Support Kit	QLogic iSCSI Support Kit (Red Hat Linux)	

Driver	2.4 kernel: 3.27 2.6 kernel: 5.00.07	Driver 3.27 is supported on RHEL3 Update 7 and SLES8 SP4. Driver 5.00.07 is supported on RHEL4 Update 3 and SLES9 SP3.
Firmware	2.0.0.45	
SanSurfer Manager	4.03.18	
Hardware Platform	32-bit: x86 based systems 64-bit: AMD64, EM64T based systems	
Data ONTAP	7.1.1, 7.2	
Host Multipathing	Not supported	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Supported	
Additional Notes		

Solaris

Component	Version/Type	Notes
Operating System	Solaris 9, Solaris 10 Update 1	Solaris 9 is supported on SPARC only. Solaris 10 Update 1 is supported on both SPARC and AMD64. QLA405x is not supported on Solaris 10 prior to Update 1
IBM Host Support Kit	QLogic iSCSI Support Kit (Solaris)	
Driver	4.04	
Firmware	02.00.00.07, 02.00.00.45	
SANSurfer Manager	4.03.18	
Hardware Platform	SPARC, AMD64	
Data ONTAP	7.1.1, 7.2	
Host Multipathing	None	
Host Clustering	Not supported	
IBM SnapDrive	Not supported	
SAN Boot	Not supported	

Additional Notes

Disclaimer

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