



Validated Components List for EqualLogic™ PS Series SANs

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Introduction

This document is a companion to the EqualLogic Configuration Guide and provides a list of the validated components that Dell has tested for use with EqualLogic. It is important to understand what the contents of this document represent and what it does not represent.

Dell's goal is not to provide an exclusive list of Ethernet components that are "supported" or "legal" to use within an EqualLogic PS Series based storage area network (SAN), but to provide a list of components that Dell has run tests on and that have been proven to work as expected when used in conjunction with an EqualLogic SAN and have shown an ability to scale as the SAN grows. Since iSCSI and therefore, EqualLogic, is based on industry standard protocols as defined by the IEEE and IETF, it is our expectation that any component that supports these industry standard will work with EqualLogic.

Do NOT interpret the absence of a vendor or vendor product from this list to be an indicator of incompatibility. It is simply an indicator that we have not run any tests to prove either way the viability of that product for use with EqualLogic SANs. In most cases, the product will work and work well with EqualLogic...in some cases maybe even better than products we do have on the list.

The components listed in this document include Ethernet switches and Ethernet host interfaces (standard network interface controllers (NICs), iSCSI host bus adapters (HBAs), and software-based iSCSI Initiators).

Which brings us to Dell's support policy for any non-Dell sourced or sold component. The following Section discusses Dell's general support policy.

Dell Statement of Support

The scope of products available for Ethernet networking is too broad to allow Dell to certify every device for use within an EqualLogic infrastructure. Dell's goal is not to restrict which infrastructure components a customer can integrate with the EqualLogic SAN, but to provide a clear statement of how Dell will support devices that have not been tested or sold by Dell.

General Statement

In general, Dell will allow any infrastructure component to be used within a Dell EqualLogic SAN solution assuming it meets minimum standards - as described in the EqualLogic Configuration Guide - required to be used within a Dell EqualLogic SAN infrastructure. Support will provide support to resolve customer issues with the SAN solution until it has been determined that the infrastructure component is identified as causing the issue. If the identified component is not included in a Dell support agreement or that Dell does not have a predefined support relationship (Cooperative Support Agreement), the customer may be required to directly contact that component provider for further support.

Validated Switches

1Gb Switches

Switch	Total Ports ²	Maximum Number of 1Gb Ports	Number of 10Gb Ports	10Gb PHY	Redundant PS	Number of Chassis Blades	Stackable	Stacking FDX Bandwidth per Port	Total Stack Bandwidth Gb/sec	Max LAG Size (ports/switch)	Rack Form Factor	Protocol Layer	Recommended SAN Scalability (Arrays)	Recommended FW (or later)	Recommended Switches per SAN	iSCSI Session Monitoring	LLDP iSCSI Auto-detection of 1Gb EqualLogic
StandAlone Switches																	
Brocade FGS648P-STK	48	48	0	NA	Y		Y	8	40	8	1.5	3	NA	05.0.01T7e1	4	N	N
Brocade FGS624P-STK	24	24	0	NA	Y		Y	8	40	8	1.5	3	NA	05.0.01T7e1	4	N	N
Brocade EdgeX-624	24	24	0	NA	Y		N	0	0	8	1.5	3	NA	04.3.00T73e1	2	N	N
Brocade EdgeX-648	48	48	0	NA	Y		N	0	0	8	1.5	3	NA	04.3.00T73e1	2	N	N
Brocade CX-624	24	24	0	NA	Y		Y	0	64	8	1	3	NA	06.0.00T7f1	4	N	N
Brocade CX-648	48	48	0	NA	Y		Y	0	64	8	1	3	NA	06.0.00T7f1	4	N	N
Cisco 3750E-48	48	48	2	X2	N		Y	8	64	8	1	3	NA	12.2(35)SE5	4	N	N
Cisco 3750X-48	48	48	2	X2	N		Y	8	64	8	1	3	4	15.0(1)SE2	4	N	N
Cisco 4948-10G	48	48	2	X2	Y		N	0	0	8	1	3	NA	12.2(40)SG	2	N	N
Cisco 4900M 1Gb	48	40	8	X2	Y		N	0	0	8 ¹	2	3	NA	12.2(40)SG	4	N	N
Dell Force10 S25	28	24	4	CX4	N		Y	12/24	24	8	1	3	NA	7.7.2.0	4	N	N
Dell Force10 S50	52	48	4	CX4	N		Y	12/24	24	8	1	3	NA	7.7.2.0	4	N	N
Dell Force10 S60	52	48	4	SFP+	N		Y	12/24	24	8	1	3	NA	8.3.3.4	4	N	N
Dell PowerConnect 5424	24	24	0	NA	N		N	0	0	8	1	2	2	2.0.0.43	2	Y	N
Dell PowerConnect 5448	48	48	0	NA	N		N	0	0	8	1	2	3	2.0.0.43	2	Y	N
Dell PowerConnect 6224	28	24	2	SFP+	N		Y	12	48	8	1	3	4	3.2.0.10	4	N	Y
Dell PowerConnect 6248	52	48	2	SFP+	N		Y	12	48	8	1	3	4	3.2.0.10	4	N	Y
Dell PowerConnect 7024	30	24	2	SFP+	Y		Y	16	64	8	1	3	8	4.1.0.15 or later	4	Y	Y
Dell PowerConnect 7048	50	48	2	SFP+	Y		Y	16	64	8	1	3	16	4.1.0.15 or later	4	Y	Y
Extreme x450a-24T	26	24	2	SFP+	N		Y	8	40	8	1	3	NA	1.0.3.1	4	N	N
Extreme x450a-48T	50	48	2	SFP+	N		Y	8	40	8	1	3	NA	1.0.3.1	4	N	N
HP ProCurve 3500yl-48G	48	48	0	NA	Y		N	NA	NA	8	1	3	NA	K.12.12	2	N	N
Juniper EX4200-48T	48	48	0	NA	Y		Y	64	128	8	1	3	12	10.2R1.8	4	N	N
Nortel 5510-48T	48	48	0	NA	N		Y	8	80	8	1	3	NA	5.0.0.2	4	N	N
M1000e Blade I/O Modules³																	
Cisco M3130G	20 ⁴	8	0	NA	N		Y	8	64	8	0	3	NA	12.2(50)SE	NA	N	N
Cisco M3130X	20 ⁴	8	0	NA	N		Y	8	64	8	0	3	NA	12.2(50)SE	NA	N	N
Dell PowerConnect M6220	20 ⁴	4	2	SFP+	N		Y	12	48	8	0	3	NA	2.2.0.3 or later	NA	N	N
Dell PowerConnect M6348	48 ⁴	16	2	SFP+	N		Y	16	64	8	0	3	NA	4.1.x or later	NA	N	N

Switch	Total Ports ²	Maximum Number of 1Gb Ports	Number of 10Gb Ports	10Gb PHY	Redundant PS	Number of Chassis Blades	Stackable	Stacking FDX Bandwidth per Port	Total Stack Bandwidth Gb/sec	Max LAG Size (ports/switch)	Rack Form Factor	Protocol Layer	Recommended SAN Scalability (Arrays)	Recommended FW (or later)	Recommended Switches per SAN	iSCSI Session Monitoring	LLDP iSCSI Auto-detection of 1Gb EqualLogic
Chassis Switches																	
Brocade RX4	192	192	0 ⁵	NA	Y	4	N	NA	NA	8 ¹	4	3	8+	2.7.2fT157	1	N	N
Brocade RX8	384	384	0 ⁵	NA	Y	8	N	NA	NA	8 ¹	7	3	16+		1	N	N
Brocade RX16	768	768	0 ⁵	NA	Y	16	N	NA	NA	8 ¹	14	3	16+		1	N	N
Dell B-Series RX4	192	192	0 ⁵	NA	Y	4	N	NA	NA	8 ¹	4	3	8+	2.7.2fT157	1	N	N
Dell B-Series RX8	384	384	0 ⁵	NA	Y	8	N	NA	NA	8 ¹	7	3	16+		1	N	N
Dell B-Series RX16	768	768	0 ⁵	NA	Y	16	N	NA	NA	8 ¹	14	3	16+		1	N	N
Dell Force10 C150	192	192	0 ⁵	NA	N	4	N	NA	NA	8 ¹	1	3	NA	7.7.2.0a	2	N	N
Dell Force10 C300	384	384	0 ⁵	NA	N	8	N	NA	NA	8 ¹	1	3	NA	7.7.2.0a	2	N	N

1 Recommend 10Gb Port IO Modules for inter-switch connectivity

2 Total Ports reflects the maximum possible ports regardless of speed and includes optional modular ports. Actual port total will depend on options selected

3 I/O Modules for M1000e Blade Chassis should be used for host aggregation only.
Use external, stand-alone switches for array connections.

4 I/O Modules for M1000e Blade Chassis have internally facing fixed ports for Blade Server Connectivity as well as External ports

5 Chassis Switches will require 10Gb modules that will reduce the maximum number of 1Gb ports on the switch

10Gb Switches

Switch	Specifications																	Recommended SAN Scalability (Arrays per 4-switch configuration)	FW Version Tested	Recommended Max Switches per SAN	Features for EqualLogic					
	Total Ports**	10Gb Fixed	10Gb Fixed PHY	10Gb Modular*	10Gb ModPHY	Dual Speed Fixed	Dual Speed FixedPHY	Dual Speed Modular	Dual Speed Modular PHY	40Gb QSFP+	Redundant PS	Stackable****	Stacking FD Bandwidth per Port	Total Stack Bandwidth Gb/sec	Max LAG Size (ports/switch)	Rack Form Factor	Protocol Layer				DCB Ready?	iSCSI Session Monitoring	DCB Enhanced iSCSI (iSCSI TLV Support)	DCB/CEE Enhanced Transmission Selection	DCB/CEE Priority Flow Control	DCB/CEE DCBx Protocol
Stand-Alone Switches																										
Arista 7148SX	48	0	NA	0	NA	48	SFP+	0	NA		Y	N	0	0	16	1	3	Y	16+	EOS4.5.1	4	N	Y	N	Y	Y
Brocade 8000/8000e	24	24	SFP+	0	NA	0	NA	0	NA		Y	N	0	0	8	2	2	Y	9-10	6.3.0a	4	N	Y	Y	Y	Y
Brocade Turbolron 24X	24	24	SFP+	0	NA	0	NA	0	NA		Y	N	0	0	8	2	2	Y	9-10	04.2.00a	4	N	N	N	N	N
Brocade VDX 6720-60	60	0	NA	0	NA	60	SFP+	0	NA		Y	V	10	80	8	2	2	Y	16+	2.0.1a	2	N	Y	Y	Y	Y
Cisco Nexus 5010	26	4	SFP+	6	SFP+	16	SFP+	0	NA		Y	N	0	0	8	1	2	Y	9-10	v4.2(1)N1(1)	4	N	N	N	N	N
Cisco Nexus 5020	52	24	SFP+	12	SFP+	16	SFP+	0	NA		Y	N	0	0	8	2	2	Y	16+	v4.2(1)N1(1)	4	N	N	N	N	N
Dell Force10 s4810P	48	48	SFP+	0	NA	0	NA	0	NA	4	Y	V	80	160	8	1	3	N	16+	8.3.7.2	4	N	N	N	N	N
Dell PowerConnect J-Series EX4500	48	40	SFP+	8	SFP+	40	SFP+	8	SFP+		Y	Y	32	128	8	2	3	Y	16+	10.4R1.9	Stk:2 LAG:4	N	N	N	N	N
Dell PowerConnect 8024F	24	24	SFP+	0	NA	0	NA	0	NA		Y	V	0	0	8	1	3	N	9-10	3.1.4.5 4.2.0.4	4	Y	N	N	N	N
Dell PowerConnect-B8000/8000e	24	24	SFP+	0	NA	0	NA	0	NA		Y	N	0	0	8	2	2	Y	9-10	6.3.0a	4	N	Y	Y	Y	Y
Juniper EX4500	48	40	SFP+	8	SFP+	40	SFP+	8	SFP+		Y	Y	32	128	8	2	3	Y	16+	10.4R1.9	Stk:2 LAG:4	N	N	N	N	N
M1000e Blade I/O Modules***																										
Dell PowerConnect M8024/M8024k	24	0	NA	8	SFP+	16	XAUI/KR	0	NA		N	V	0	0	8	0	3	N	NA	3.1.2.5 or later	NA	Y	N	N	N	N

* Modular ports reflect optional hardware

** Total Ports reflects the maximum possible ports regardless of speed and includes optional modular ports

*** It is recommended that I/O Modules for M1000e Blade Chassis be used for host aggregation only. Use external, stand-alone switches for array connections.

**** iSCSI TLV Auto Configuration for iSCSI Support is required for EqualLogic integration into a DCB/CEE environment.

***** Scalability Reports are available in Appendix B

***** "S" stackable, "N" not stackable, "V" front-port virtual stacking

Validated and Supported Initiator

Software Initiators

Ethernet and IP services are provided by industry standard Network Interface Controllers. See “Network Interface Controllers” section later in this document for a list of validated software initiators.

Table 1

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
Microsoft Windows							
Windows 7	Ship	N	N	Y	N	3.2.8	Basic disks only; 32 and 64 bit support Suggest HIT V3.1.1 or later Dell DSM
Windows Vista	Ship	N	N	Y	N	3.2.8	Basic disks only; 32 and 64 bit support Suggest HIT V3.1.1 or later Dell DSM MPIO not supporte in this version of Windows
Windows 2003	2.08	Y	Y	Y	Y	3.2.8	Support Dynamic disks or Basic disks. 32/64 bit. MPIO: Suggest HIT V3.1.1 or later Boot from SAN requires NIC support or DoubleTake emBoot optional software.
Windows 2008 (All Server Versions)	Ship	Y	Y	Y	Y	3.2.8	Support Dynamic disks or Basic disks. 32/64 bit. MPIO: Suggest HIT V3.1.1 or later Boot from SAN requires NIC support or DoubleTake emBoot optional software.

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
Windows Storage Server 2003R2	2.08	Y	Y	Y	Y	3.2.8	Support Dynamic disks or Basic disks. 32/64 bit. MPIO: Suggest HIT V3.1.1 or later Boot from SAN requires NIC support or DoubleTake emBoot optional software.
Linux							
RedHat Enterprise Linux 5	5.2+	Y	Y	Y*	Y	3.2.8	Device Mapper required for MPIO; 32/64 bit. Open iSCSI included initiator 5.3 with Multipath tools device-mapper-multipath-0.4.7-30.el5.x86_64.rpm tested EQL MPIO / HIT requires RedHat 5.5 or later
RedHat Enterprise Linux 6	6.0	Y	Y	Y	Y*	5.0.2	32/64 bit. Open iSCSI included initiator EqualLogic MPIO not support for Cluster Solutions

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
Suse Linux Enterprise Server 10	2.0-870	Y	Y	N	Y	3.2.8	One way CHAP authentication; No chap during discovery; 32/64 bit. no > 2TB support; kernel versions prior to and including 2.6.16.60-0.37 require a patch from Novell - contact Novell and reference SuSE bug 499558
Suse Linux Enterprise Server 11	2.0-870	Y	Y	N	Y	3.2.8	One way CHAP authentication; No chap during discovery; 32/64 bit. no > 2TB support; kernel versions up to and including 2.6.27.21-0.1 require a patch from Novell - contact Novell and reference SuSE bug 499558
Vmware							
VMware ESX Server 3.x	3.5U5	N	N	N	Y	3.2.8	VMotion IS supported Cluster support via VMware HA and DRS

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
VMware vSphere 4.0.x	4.0U1	N	Y	N	Y	4.0.6	<p>VMotion IS supported</p> <p>VSphere supports up to 8 active ports for MPIO</p> <p>Cluster support via VMware HA and DRS</p> <p>Patch required to work: ESX: 1012232 ESXi: 1011856</p>
VMware vSphere 4.1	4.1	N	Y	Y	Y*	4.0.6	<p>VMotion IS supported</p> <p>VSphere supports up to 8 active ports for MPIO</p> <p>Cluster support via VMware HA and DRS</p> <p>Cluster support for native MPIO only.</p>
VMware ESXi 4.1	4.1	Y*	Y	Y	Y*	4.0.6	<p>VMotion IS supported</p> <p>VSphere supports up to 8 active ports for MPIO</p> <p>Cluster support via VMware HA and DRS</p> <p>Boot from SAN with Broadcom only.</p> <p>Cluster support for native MPIO only.</p>
VMware vSphere 5	5.0	N	Y	Y	Y	4.3.6	<p>VMotion, VAAI, and Thin Provisioning Stun is supported</p>
Other							

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
AIX 5.2	Ship	N	N	N	N	3.2.8	<p>Requires PTF U803038 with 5.2 ML7;</p> <p>Max of 16 targets</p> <p>Manual Discovery only</p> <p>Authentication through CHAP only</p> <p>No mutual authentication support</p> <p>May want to adjust nagle settings to improve performance</p> <p>32/64 bit.</p>
Apple OSX 10*	Atto 3.22	N	N	N	N	3.2.8	
Apple OSX 10*	globalSAN 3.3	N	N	N	N	3.2.8	
Citrix XenServer 4.x*	Ship	N	N	N	Y	3.2.8	Cluster support for XenServer Resource Pools
Citrix XenServer 5.x*	Ship	N	N	N	Y	3.2.8	<p>Cluster support for XenServer Resource Pools</p> <p>Trunking support for Active/Passive failover</p>
HP-UX 11i	03E	N	N	N	N	3.2.8	32/64 bit.

Initiator	Feature Support					Notes	
	Minimum Initiator Version	Boot From SAN	Multipath Support	EqualLogic HIT Integration	Cluster Support		Minimum PS Series Array FW Release
Novell Netware 6.5	1.06.05	N	N	N	Y	3.2.8	Patch required: http://download.novell.com/Download?buildid=8thME1vKcYA~
Solaris 10	Update 8	Y	Y	N	Y	3.2.8	MPIO provided by MPxIO package 32/64 bit.

* Vendor Tested.

Network Interface Controllers

iSCSI services are provided by software-based iSCSI initiators. See "Software Initiators" section earlier in this document for a list of validated software initiators.

NIC	Mode	Speed	Minimum Driver Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Windows 2003 / Windows Storage Server R2									
Broadcom 5708	NDIS	1	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	Host Integration Toolkit requires SP2
Broadcom 5708	iSOE	1	bxios: 5.2.11.0	Y	Y	Y	Y*	4.0.5	HIT Requires SP2 or above, Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 5709	NDIS	1	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	Host Integration Toolkit requires SP2
Broadcom 5709	iSOE	1	bxios: 5.2.11.0	Y	Y	Y	Y*	4.0.5	HIT Requires SP2 or above, Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 57710	NDIS	10	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	Host Integration Toolkit requires SP2
Broadcom 57710	iSOE	10	bxios: 5.2.11.0	Y	Y	Y	Y*	4.3.5	HIT Requires SP2 or above, Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 57711	NDIS	10	5.2.14.0	Y	Y	Y	Y	4.1.5	Host Integration Toolkit requires SP2
Broadcom 57711	iSOE	10	5.2.11.0	Y	Y	Y	Y*	4.3.5	HIT Requires SP2 or above, Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Intel Pro1000	NDIS	1	10.0.25.0	Y	Y	Y	Y	3.2.8	
Windows 2008 / Windows 2008R2									
Broadcom 5708	NDIS	1	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	
Broadcom 5708	iSOE	1	bxios: 5.2.11.0	Y	Y	Y	Y*	4.0.5	Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 5709	NDIS	1	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	
Broadcom 5709	iSOE	1	bxios: 5.2.11.0	Y	Y	Y	Y*	4.0.5	Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 57710	NDIS	10	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	

NIC	Mode	Speed	Minimum Driver Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Broadcom 57710	iSOE	10	bxios: 5.2.11.0	Y	Y	Y	Y*	4.3.5	Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Broadcom 57711	NDIS	10	ndis: 5.2.14.0	Y	Y	Y	Y	4.1.5	
Broadcom 57711	iSOE	10	bxios: 5.2.11.0	Y	Y	Y	Y*	4.3.5	Requires HIT 3.3 or later Jumbo Frames with IPv4 only
Brocade 1020/1741M-k	NDIS	10	2.3.0	Y	Y	Y	Y	5.0.2	
Emulex OCe101012-I	iSOE	10	2.102.200.20	Y	Y*	Y	Y	4.3.5	Windows 2008R2 No support for IPv6 EqualLogic MPIO DSM not supported
Intel Pro1000	NDIS	1	11.0.103.0	Y	Y	Y	Y	3.2.8	
Intel 10Gb x520	NDIS	10	2008: 2.2.30.0 2008R2: 2.5.48.0	Y	Y	Y	Y	4.3.5	
Vmware vSphere 4.1									
Broadcom 5708	NIC	1	1.9.36b.v45.5.1-1vmw	N	Y	Y	Y	4.3.6	
Broadcom 5709	NIC	1	1.9.36b.v45.5.1-1vmw	N	Y	Y	Y	4.3.6	
Broadcom 5709	iSOE	1	1.9.36b.v45.5.1-1vmw	N	Y	Y	N	4.3.6	JF????
Broadcom 57711	NIC	10	1.8.11t5rc2.8.1-3vmw	N	Y	Y	Y	4.3.6	
Broadcom 57711	iSOE	10	1.8.11t5rc2.8.1-3vmw	N	Y	Y	Y*	4.3.6	Jumbo Frames requires: -Broadcom FW 5.2.7 or greater -Version 1.60.50.v41.2 of the bnx2x driver
Intel Pro1000	NIC	1	1.3.19.12.2-1	N	Y	Y	Y	4.3.6	
Vmware ESXi 4.1									
Broadcom 5708	NIC	1	1.9.36b.v45.5.1-1vmw	Y*	Y	Y	Y	4.3.6	Need driver and FW ver for BfS
Broadcom 5709	NIC	1	1.9.36b.v45.5.1-1vmw	Y*	Y	Y	Y	4.3.6	Need driver and FW ver for BfS
Broadcom 5709	iSOE	1	1.9.36b.v45.5.1-1vmw	Y*	Y	Y	N	4.3.6	
Broadcom 57711	NIC	10	1.8.11t5rc2.8.1-3vmw	Y*	Y	Y	Y	4.3.6	Need driver and FW ver for BfS
Broadcom 57711	iSOE	10	Driver: 1.60.50.v41.2 FW 5.2.7 or greater	Y*	Y	Y	N	4.3.6	
Intel Pro1000	NIC	1	1.3.19.12.2-1	N	Y	Y	Y	4.3.6	
Vmware vSphere 5									
Broadcom 5709	NIC	1	5.0 (RTS included)	N	Y	Y	Y	4.3.6	VMotion, VAAI, and Thin Provisioning Stun is supported.
Broadcom 5709	iSOE	1	5.0 (RTS included)	N	Y	Y	N	4.3.6	VMotion, VAAI, and Thin Provisioning Stun is supported.

NIC	Mode	Speed	Minimum Driver Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Broadcom 57711	NIC	10	5.0 (RTS included)	N	Y	Y	Y	4.3.6	VMotion, VAAI, and Thin Provisioning Stun is supported.
Broadcom 57711	iSOE	10	5.0 (RTS included)	N	Y	Y	N	4.3.6	VMotion, VAAI, and Thin Provisioning Stun is supported.
RedHat Linux 5									
Broadcom 5708	NIC	1	2.0.2	Y	Y	Y	Y	4.3.6	
Broadcom 5709	NIC	1	2.0.2	Y	Y	Y	Y	4.3.6	
Broadcom 57710	NIC	10	5.0.5	N	Y	Y	Y	4.3.6	
Broadcom 57711	NIC	10	5.0.5	N	Y	Y	Y	4.3.6	
Brocade 1020/1741M-k	NIC	10	2.3.0	N	Y	Y	Y	5.0.2	
Intel Pro1000	NIC	1	Included	Y	Y	Y	Y	4.3.6	
RedHat Linux 5.7									
Broadcom 5708	iSOE	1	2.6.23	N	Y*	Y	Y	4.3.6	Device Mapper required for MPIO 32 and 64-bit support 5.3 with Multipath tools, device-mapper-multipath-0.4.7-46.el5.x86_64.rpm tested
Broadcom 5709	iSOE	1	2.6.23	N	Y*	Y	Y	4.3.6	Device Mapper required for MPIO 32 and 64-bit support 5.3 with Multipath tools, device-mapper-multipath-0.4.7-46.el5.x86_64.rpm tested
RedHat Linux 6									
Broadcom 5708	NIC	1	2.6.32	Y	Y	Y	Y	5.0.2	
Broadcom 5709	NIC	1	2.6.32	Y	Y	Y	Y	5.0.2	
Broadcom 5709	iSOE	1	2.0.8	N	Y	Y	Y	5.0.2	
Broadcom 57710	NIC	10	Included	Y	Y	Y	Y	5.0.2	
Broadcom 57711	NIC	10	Included	Y	Y	Y	Y	5.0.2	
Broadcom 57711	iSOE	10	Included	N	Y	Y	Y	5.0.2	
Brocade 1020/1741M-k	NIC	10	2.3.0	N	Y	Y	Y	5.0.2	
Intel Pro1000	NIC	1	2.1.0	Y	Y	Y	Y	5.0.2	
RedHat Linux 6.1									
Broadcom 5708	iSOE	1	6.2.13	N	Y	Y	Y	5.0.2	Device Mapper required for MPIO 32 and 64-bit support 5.3 with Multipath tools, device-mapper-multipath-0.4.7-46.el5.x86_64.rpm tested

NIC	Mode	Speed	Minimum Driver Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Broadcom 5709	iSOE	1	6.2.13	N	Y	Y	Y	5.0.2	Device Mapper required for MPIO 32 and 64-bit support 5.3 with Multipath tools, device-mapper-multipath-0.4.7-46.el5.x86_64.rpm tested
RedHat Linux 6.2									
Intel Pro1000	NIC	1	3.0.6-5	Y	Y	Y	Y	5.2.x	dm-multipath (device-mapper-multipath-0.4.9-46.el6.x86_64.rpm) Device Mapper required for MPIO; 32 and 64 bit support Open iSCSI 2.0.872-34;

HBAs

Host Bus Adapters are considered storage controllers and not network controllers, even though they use traditional Ethernet ports and networking to communicate with the storage arrays. For this reason, an HBA will only be visible as a storage controller by the operating system.

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
RedHat Linux (4.x)										
Qlogic QLA4050	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; 5.3 with Multipath tools device-mapper-multipath-0.4.7-30.el5.x86_64.rpm tested Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
Qlogic QLA4052	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; 5.3 with Multipath tools device-mapper-multipath-0.4.7-30.el5.x86_64.rpm tested Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLE4060	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; 5.3 with Multipath tools device-mapper-multipath-0.4.7-30.el5.x86_64.rpm tested Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
Qlogic QLE4062	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; 5.3 with Multipath tools device-mapper-multipath-0.4.7-30.el5.x86_64.rpm tested Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
SUSE Linux (9 and Later)										
Qlogic QLA4050	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLA4052	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
Qlogic QLE4060	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
Qlogic QLE4062	1	5.01.03.04	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	Device Mapper required for MPIO; 32 and 64 bit support; Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic QLogic Branded Only
Solaris (9 and Later) SPARC										
Qlogic QLA4050	1	5.00	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	MPIO requires Veritas VxVM DMP 5.0 or 5.1 32 and 64 bit support; Boot from SAN requires BIOS 1.09 or later Jumbo Frames Support requires special FW provided by Qlogic Cluster Support requires Veritas Cluster QLogic Branded Only

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLA4052	1	5.00	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>MPIO requires Veritas VxVM DMP 5.0 or 5.1</p> <p>32 and 64 bit support;</p> <p>Boot from SAN requires BIOS 1.09 or later</p> <p>Jumbo Frames Support requires special FW provided by Qlogic</p> <p>Cluster Support requires Veritas Cluster</p> <p>QLogic Branded Only</p>
Qlogic QLE4060	1	5.00	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>MPIO requires Veritas VxVM DMP 5.0 or 5.1</p> <p>32 and 64 bit support;</p> <p>Boot from SAN requires BIOS 1.09 or later</p> <p>Jumbo Frames Support requires special FW provided by Qlogic</p> <p>Cluster Support requires Veritas Cluster</p> <p>QLogic Branded Only</p>
Qlogic QLE4062	1	5.00	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>MPIO requires Veritas VxVM DMP 5.0 or 5.1</p> <p>32 and 64 bit support;</p> <p>Boot from SAN requires BIOS 1.09 or later</p> <p>Jumbo Frames Support requires special FW provided by Qlogic</p> <p>Cluster Support requires Veritas Cluster</p> <p>QLogic Branded Only</p>

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLA4050	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>Updated hotfix driver 3.40.03-256635;</p> <p>2 ports can be used active on separate volumes;</p> <p>VMotion is supported;</p> <p>Tested to 2 cards, ESX supports up to 2 active ports -</p> <p>Boot from SAN requires u3 or above</p> <p>MPIO Support for failover only</p> <p>Jumbo Frames requires special FW from QLogic</p> <p>QLogic Branded Only</p>
Qlogic QLA4052	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>Updated hotfix driver 3.40.03-256635;</p> <p>2 ports can be used active on separate volumes;</p> <p>VMotion is supported;</p> <p>Tested to 2 cards, ESX supports up to 2 active ports -</p> <p>Boot from SAN requires u3 or above</p> <p>MPIO Support for failover only</p> <p>Jumbo Frames requires special FW from QLogic</p> <p>QLogic Branded Only</p>

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLE4060	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>Updated hotfix driver 3.40.03-256635;</p> <p>2 ports can be used active on separate volumes;</p> <p>VMotion is supported;</p> <p>Tested to 2 cards, ESX supports up to 2 active ports -</p> <p>Boot from SAN requires u3 or above</p> <p>MPIO Support for failover only</p> <p>Jumbo Frames requires special FW from QLogic</p> <p>QLogic Branded Only</p>
Qlogic QLE4062	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	3.2.8	<p>Updated hotfix driver 3.40.03-256635;</p> <p>2 ports can be used active on separate volumes;</p> <p>VMotion is supported;</p> <p>Tested to 2 cards, ESX supports up to 2 active ports -</p> <p>Boot from SAN requires u3 or above</p> <p>MPIO Support for failover only</p> <p>Jumbo Frames requires special FW from QLogic</p> <p>QLogic Branded Only</p>
VMware ESX Server 4.0, 4.1										
Qlogic QLA4050	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	4.0.6	<p>VMotion is supported,</p> <p>vSphere supports up to 4 active ports</p> <p>QLogic Branded Only</p>

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLA4052	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	4.0.6	VMotion is supported, vSphere supports up to 4 active ports QLogic Branded Only
Qlogic QLE4060	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	4.0.6	VMotion is supported, vSphere supports up to 4 active ports QLogic Branded Only
Qlogic QLE4062	1	3.40.03-256635	3.0.1.53	1.09	Y	Y	Y	Y	4.0.6	VMotion is supported, vSphere supports up to 4 active ports QLogic Branded Only
Windows 2003 / Windows Storage Server R2										
Qlogic QLA4050	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	Boot From SAN requires BIOS v1.09 or later MPIO requires Microsoft initiator Service, 32/64 bit supported. See special instructions from QLogic for MPIO. No Host Integration Tools Support tfor driver versions 2.1.4.0 - 2.1.4.19 QLogic Branded Only
Qlogic QLA4052	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	Boot From SAN requires BIOS v1.09 or later MPIO requires Microsoft initiator Service, 32/64 bit supported. See special instructions from QLogic for MPIO. No Host Integration Tools Support tfor driver versions 2.1.4.0 - 2.1.4.19 QLogic Branded Only

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLE4060	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>Jumbo Frames requires FW v3.0.1.49 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>
Qlogic QLE4062	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>Jumbo Frames requires FW v3.0.1.49 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>

Windows 2008 / Windows 2008R2

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLA4050	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>
Qlogic QLA4052	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>
Qlogic QLE4060	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>Jumbo Frames requires FW v3.0.1.49 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>

NIC	Speed	Minimum Driver Version	Minimum FW Version	Minimum BIOS Version	Boot From SAN	Multipath Support	Flow Control	Jumbo Frames	Minimum PS Series Array FW Release	Notes
Qlogic QLE4062	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>Boot From SAN requires BIOS v1.09 or later</p> <p>Jumbo Frames requires FW v3.0.1.49 or later</p> <p>MPIO requires Microsoft initiator Service, 32/64 bit supported.</p> <p>See special instructions from QLogic for MPIO.</p> <p>No Host Integration Tools Support for driver versions 2.1.4.0 - 2.1.4.19</p> <p>QLogic Branded Only</p>
Windows Vista										
Qlogic QLA4050	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>32/64 bit supported.</p> <p>QLogic Branded Only</p>
Qlogic QLA4052	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>32/64 bit supported.</p> <p>QLogic Branded Only</p>
Qlogic QLE4060	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>32/64 bit supported.</p> <p>QLogic Branded Only</p>
Qlogic QLE4062	1	2.1.4.26	3.0.1.53	1.15	Y	Y	Y	Y	3.2.8	<p>32/64 bit supported.</p> <p>QLogic Branded Only</p>
Windows 2000										
Qlogic QLA4050	1	2.1.4.12	3.0.1.53	1.09	N	Y	Y	Y	3.2.8	<p>Requires Microsoft initiator Service.</p> <p>QLogic Branded Only</p>
Qlogic QLA4052	1	2.1.4.12	3.0.1.53	1.09	N	Y	Y	Y	3.2.8	<p>Requires Microsoft initiator Service.</p> <p>QLogic Branded Only</p>