

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
LSI CORPORATION	05/06/2011
RECEIVING PARTY DATA	
Name:	NETAPP, INC.
Street Address:	495 East Java Drive
City:	Sunnyvale
State/Country:	CALIFORNIA
Postal Code:	94089
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	13668896
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Date:	06/09/2013
Total Attachments: 14	

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PATENT ASSIGNMENT

THIS PATENT ASSIGNMENT is made as of May 6, 2011 by **LSI CORPORATION**, a Delaware corporation, hereinafter referred to as the **ASSIGNOR**, and **NETAPP, INC.**, a Delaware corporation, hereinafter referred to as the **ASSIGNEE**.

ASSIGNOR is the owner of certain patents and patent applications identified on Schedule "A" attached hereto (the "ASSIGNED PATENTS").

ASSIGNEE desires to acquire the entire right, title and interest of ASSIGNOR in and to said ASSIGNED PATENTS.

For good and valuable consideration paid by the ASSIGNEE, the receipt of which is hereby acknowledged, ASSIGNOR does hereby sell, assign and transfer to the ASSIGNEE, at ASSIGNEE's sole expense, ASSIGNOR's entire right, title and interest in and to the ASSIGNED PATENTS, in the U.S. and every foreign country, and all patent rights, including extensions or derivations thereof, both foreign and domestic, that exist and may issue on the ASSIGNED PATENTS. ASSIGNEE hereby authorizes and requests the Commissioner of Patents that all U.S. patents that issue on the ASSIGNED PATENTS shall issue to ASSIGNEE. This assignment includes assignment to ASSIGNEE of the right to make application in its own behalf for protection of the ASSIGNED PATENTS and any patents issued on the ASSIGNED PATENTS, in the U.S. and countries foreign to the U.S., and to claim under the Patent Cooperation Treaty, the International Convention and/or other international arrangement for any such application the date of any earlier U.S. application (or any other application on the invention) to gain priority with respect to other applications. The ASSIGNED PATENTS and all patents that issue on the ASSIGNED PATENTS shall be held and enjoyed by the ASSIGNEE, its successors and assigns as fully and entirely as the same would have been held and enjoyed by the ASSIGNOR had this assignment not been made.

ASSIGNOR covenants and agrees to execute such further and confirmatory assignments in recordable form as the ASSIGNEE may require to vest record title of said respective ASSIGNED PATENTS in ASSIGNEE.

IN WITNESS WHEREOF, the ASSIGNOR has caused this Assignment to be executed by a duly authorized officer.

LSI CORPORATION

By: Marie H. MacNichol
Name: Marie H. MacNichol
Title: Vice President – IP Law

SCHEDULE A

ASSIGNED PATENTS

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Method For Remote Data Back Up With De-Duplication And Recovery From Clustered Secondary Storage Arrays	US	12/211838	17-Sep-08		
Method For Handling Interrupted Writes Using Multiple Cores	US	12/354126	15-Jan-09		
Drive Blade Construction	US	12/100520	10-Apr-08		
Method And/Or Apparatus For Certifying An In-Band Management Application Of An External Storage Array	US	12/324224	26-Nov-08		
System For Automatically Configuring A Storage Array	US	12/143123	20-Jun-08		
Unified Enterprise Level Method And System For Enhancing Application And Storage Performance	US	12/492147	26-Jun-09		
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	US	11/545872	10-Oct-06		
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	CN	2007800340247.0	10-Oct-07		
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	DE	1120070022116.0	10-Oct-07		
System And Method For Connecting SAS RAID Controller Device	GB	9049974	10-Oct-07		

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Channels Across Redundant Storage Subsystems					
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	JP	2009532384	10-Oct-07		
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	KR	1020097009479.0	10-Oct-07		
System And Method For Connecting SAS RAID Controller Device Channels Across Redundant Storage Subsystems	PCT	PCTUS0721613	10-Oct-07		
Virtualized Data Storage In A Virtualized Server Environment	US	12/429519	24-Apr-09		
Virtualized Data Storage In A Virtualized Server Environment	WO	PCT/US2009/042311	30-Apr-09		
Virtualized Data Storage In A Virtualized Server Environment	TW	98116944	21-May-09		
Scheduling Proportional Storage Share For Storage Systems	US	12/221515	4-Aug-08		
System For Automating Storage Device Swaps And/Or Replacements	US	12/080217	1-Apr-08		
Integrated Cru Latch	US	10/143649	10-May-02	7796396	14-Sep-10
Magnetic Proximity Interface Control	US	10/161478	31-May-02	6969928	29-Nov-05
Apparatus For Providing Transparent Sharing Of Channel Resources By Multiple Host Machines, For Use With Mixed Mode Block And File	US	10/198684	18-Jul-02	7493404	17-Feb-09

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Protocols					
Method And Apparatus For Debugging Protocol Traffic Between Devices Inintegrated Subsystems	US	10/218726	14-Aug-02	7616631	10-Nov-09
Method And Apparatus For Debugging Protocol Traffic Between Devices In Integrated Subsystems	US	12/573238	5-Oct-09		
Method And Apparatus For Automatically Tracking And Communicating Data Storage Device Information Using RF Tags: Operating Condition, Configuration And Location	US	10/620778	15-Jul-03	7478758	20-Jan-09
Method And Apparatus For Automatically Tracking And Communicating Data Storage Device Information Using RF Tags: Operating Condition, Configuration And Location	US	12/317226	19-Dec-08	7766220	3-Aug-10
Systems And Methods For Allocating An Asset To Interconnected Devices	US	10/424408	28-Apr-03	7818461	19-Oct-10
Methods For Defining And Naming ISCSI Targets Using Volume Access And Security Policy	US	10/741559	19-Dec-03	7568216	28-Jul-09
Method And Apparatus For Identifying Ipsec Security Policy In Iscsi	US	10/741563	19-Dec-03	7461140	2-Dec-08

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Transmit Prioritizer Context Prioritization Scheme	US	10/671353	25-Sep-03	7573870	11-Aug-09
Failed Drive Locator For Removable Disk Array Modules	US	10/817344	2-Apr-04	7395460	1-Jul-08
Enclosure Slot Identification By Modules	US	10/783785	20-Feb-04	7783792	24-Aug-10
Electromagnetic Interference Shield For Data Storage Systems	US	11/130618	17-May-05	7492608	17-Feb-09
User Configurable Ultra320 SCSI Target Device Simulator And Error Injector	US	10/984287	8-Nov-04	7376546	20-May-08
Method And Apparatus For Fully Automated Iscsi Target Configuration	US	10/968495	19-Oct-04	7584272	1-Sep-09
Method For Detecting Changes In A Storage Area Network Without External Tools And Hardware	US	10/972809	25-Oct-04	7769849	3-Aug-10
Self Verifying Communications Testing	US	10/959619	6-Oct-04	7409618	5-Aug-08
Methods And Systems For Automatically Identifying A Modification To A Storage Array	US	11/136741	24-May-05	7840755	23-Nov-10
Method Of Validating Manufacturing Configurations During Hardware Assembly	US	10/966861	15-Oct-04	7441320	28-Oct-08
Online Testing Unification System With Remote Test Automation Technology	US	11/052434	7-Feb-05	7673179	2-Mar-10
Remote Status And Control Of Storage Devices	US	11/070361	2-Mar-05	7689586	30-Mar-10
Fibre Selective Control Switch System	US	11/057548	14-Feb-05	7620320	17-Nov-09

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
System And Method For Fabric Storage Utilizing Multicast With Distributed Intelligence	US	11/167379	27-Jun-05	7760727	20-Jul-10
Methods And Systems For Locking In Storage Controllers	US	11/253368	19-Oct-05	7529902	5-May-09
Methods And Structure For Detection And Handling Of Catastrophic SCSI Errors	US	10/986751	12-Nov-04	7428665	23-Sep-08
Methods And Structure For Detection And Handling Of Catastrophic SCSI Errors	US	11/924813	26-Oct-07	7853831	14-Dec-10
System For Providing An Alternative Communication Path In A SAS Cluster	US	11/064684	24-Feb-05	7552355	23-Jun-09
System For Providing An Alternative Communication Path In A SAS Cluster	US	12/387043	27-Apr-09	7836351	16-Nov-10
Application Programming Interface For Fusion Message Passing Technology	US	11/148395	7-Jun-05	7761630	20-Jul-10
System And Method To Synchronize And Coordinate Parallel, Automated Fault Injection Processes Against Storage Area Network Arrays	US	11/248544	12-Oct-05	7444267	28-Oct-08
Method Of Partitioning Storage In Systems With Both Single And Virtual Target Interfaces	US	11/283232	18-Nov-05	7765365	27-Jul-10
Method For Creating A Large-Scale Storage Array System Out Of Multiple Mid-Range Storage Arrays	US	11/192636	29-Jul-05	7568069	28-Jul-09
Peer-To-Peer License Tracking And Control	US	11/328700	10-Jan-06	7650642	19-Jan-10
Methods And Structure For Verifying Domain Functionality	US	11/224850	13-Sep-05	7412631	12-Aug-08

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Self-Aligning Electromagnetic Interference Gaskets For Customer Removable Modules	US	11/493260	25-Jul-06	7390975	24-Jun-08
Write Journaling Using Battery Backed Cache	US	11/220936	7-Sep-05	7533298	12-May-09
Devices And Methods For Matching Link Speeds Between Controllers And Controlled Devices	US	11/286633	23-Nov-05	7599392	6-Oct-09
Devices And Methods For Matching Link Speeds Between Controllers And Controlled Devices	US	12/559915	15-Sep-09		
Dynamic Peer Application Discovery	US	11/272920	14-Nov-05	7623472	24-Nov-09
Method For Reporting Redundant Controllers As Independent Storage Entities	US	11/540468	29-Sep-06	7847801	7-Dec-10
Methods For Reporting A Storage Array With Redundant Dual Active Controllers As Two Independent Storage Entries To The Hosts	PCT	PCT/US2007/020570	24-Sep-07		
Adjustable EMI Baffling Apparatus For Data Storage Systems	US	11/634064	5-Dec-06	7667984	23-Feb-10
Adjustable Emi Baffling Apparatus For Data Storage Systems	US	12/605056	23-Oct-09		
Multi-Fan Airflow Regulation For Fan Fail Conditions	US	11/673466	9-Feb-07	7515411	7-Apr-09
Storage Virtualization In A Storage Area Network	US	10/257426	10-Oct-02	6898670	24-May-05
Storage Virtualization In A SAN	CA	2405405	04-Apr-01		
Storage Virtualization In A SAN	EPO	19197417	04-Apr-01		
Storage Area Network (SAN) Security	US	10/469727	28-Aug-03	7437753	14-Oct-08
Storage Area Network (SAN) Security	CA	2439692	27-Feb-02		

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Storage Area Network (SAN) Security	EP	27005560	27-Feb-02	1374056	21-Jun-06
Storage Area Network (SAN) Security	GB	27005560	27-Feb-02	1374056	21-Jun-06
Storage Area Network (SAN) Security	IE	27005560	27-Feb-02	1374056	21-Jun-06
Horizontal Drive System And Method	US	12/082481	11-Apr-08	7864539	4-Jan-11
Improved Method Of Securing And Protecting Expansion Cards In Mating Slots	US	12/072145	25-Feb-08	7713066	11-May-10
Switching Serial Advanced Technology Attachment (Sata)	US	10/775521	9-Feb-04	7523236	21-Apr-09
Switching Serial Advanced Technology Attachment (Sata)	US	12/405128	16-Mar-09		
Route Aware Serial Advanced Technology Attachment (Sata) Switch	US	10/775523	9-Feb-04	7539797	26-May-09
Route Aware Serial Advanced Technology Attachment (Sata) Switch	US	12/406029	17-Mar-09		
Serial Ata Switch	US	10/775488	9-Feb-04	7523235	21-Apr-09
Serial Ata Switch	US	60/477857	11-Jun-03		
Serial Ata Switch	US	12/404257	13-Mar-09		
Serial Ata Switch	CN	2004100493109.0	10-Jun-04	ZL200410049310.9	12-Nov-08
Serial Ata Switch	DE	42530931	26-May-04	1486880	12-Jan-11
Serial Ata Switch	EP	42530931	26-May-04	1486880	12-Jan-11
Serial Ata Switch	JP	2004174862	11-Jun-04		
Serial Ata Switch	TW	93113828	17-May-04	I318738	21-Dec-09
Serial Ata Switch	GB	42530931	26-May-04	1486880	12-Jan-11
Drive Box	US	12/167472	3-Jul-08	7715182	11-May-10
Drive Box	CN	2009801224026.0	07-Jan-09		
Drive Box	EP	97739346	07-Jan-09		
Drive Box	KR	1020117002292	07-Jan-09		
Drive Box	PCT	PCT/US2009/030302	07-Jan-09		

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Drive Box	TW	98102345	21-Jan-09		
Articulating Cable Chain Assembly	US	12/208182	10-Sep-08	7552581	30-Jun-09
Configurable Storage Array Controller	US	12/419840	7-Apr-09	7913027	22-Mar-11
Methods And Apparatus For Issuing Updates To Multiple Management Entities	US	09/350742	9-Jul-99	7640325	29-Dec-09
Fuel Cell Based Battery Backup Apparatus For Storage Subsystems	US	11/863688	28-Sep-07		
Methods And Structures For A Caching To Router In Iscsi Storage Systems	US	10/714031	14-Nov-03		
Dynamic Command Capacity Allocation Across Multiple Sessions And Transports	US	11/002610	2-Dec-04		
Method And System For Efficient Write Journal Entry Management For A Distributed File System	US	10/973478	26-Oct-04		
Systems And Method For Simple Scale-Out Storage Clusters	US	11/289140	29-Nov-05		
Security-Enabled Storage Controller	US	11/516232	5-Sep-06		
Sending Voluminous Data Over The Internet	US	12/077804	20-Mar-08		
Utilizing Removable Virtual Volumes For Sharing Data On A Storage Area Network	US	12/070443	19-Feb-08		
Methods And Systems For Integrated Storage And Data Management Using A Hypervisor	US	12/200497	28-Aug-08		
Circuits, Systems, And Methods To Integrate Storage Virtualization In A Storage Controller	US	12/200643	28-Aug-08		
Control IO Offload In A Split Path-Storage Virtualization System	US	12/262248	31-Oct-08		

TITLE	COUNTRY / REGION	APPLICATION NUMBER	APPLICATION DATE	PATENT NUMBER	ISSUE DATE
Storage Array Boot And Configuration	US	12/201104	29-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	US	12/969892	21-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	US	61/080762	15-Jul-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	CN	2008801303220.0	21-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	EP	87954855	21-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	KR	20117001394	21-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	PCT	PCT/US2008/009944	21-Aug-08		
System To Connect A Serial SCSI Array Controller To A Storage Area Network	TW	97138858	21-Oct-08		
Low Power Consumption Storage Array	US	12/182325	30-Jul-08		
Optimized Cache Coherency In A Dual-Controller Storage Array	US	12/165181	30-Jun-08		
Active-Active Support Of Virtual Storage Management In A Storage Area Network ("San")	US	12/428703	23-Apr-09		

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Active-Active Presentation Of Volumes From Data Path Modules	PCT	PCT/US2009/043561	12-May-09		
Active-Active Support Of Virtual Storage Management In A Storage Area Network ("San")	TW	98118506	05-Jun-09		
System And Method For Providing Performance-Enhanced Rebuild Of A Solid-State Drive (Ssd) In A Solid-State Drive Hard Disk Drive (Ssd Hdd) Redundant Array Of Inexpensive Disks 1 (Raid 1) Pair	US	12/286591	30-Sep-08		
Methods And Systems For Recovering A Computer System Using A Storage Area Network	US	12/260324	29-Oct-08		
Methods And Systems For Recovering A Computer System Using A Storage Area Network	PCT	PCT/US2009/043468	11-May-09		
Methods And Systems For Recovering A Computer System Using A Storage Area Network	TW	98118808	05-Jun-09		
Storage System Snapshot Assisted By SSD Technology	US	12/316902	17-Dec-08		

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Flash SSD Assisted Snapshot	PCT	PCT/US2009/002008	30-Mar-09		
Flash SSD Assisted Snapshot	TW	98110790	01-Apr-09		
Priority Command Queues For Low Latency Solid State Drives	US	12/238438	26-Sep-08		
Small Computer System Interface Input Output (Scsi Io) Referral	US	12/316713	15-Dec-08		
Virtualized Data Storage In A Network Computing Environment	US	12/506143	20-Jul-09		
Multi-Pathing With SCSI I/O Referrals	US	12/316778	15-Dec-08		
Embedded Scale Out Aggregator For LSI Storage System Controllers	US	12/387610	5-May-09		
Embedded Scale Out Aggregator For LSI Storage System Controllers	US	61/106309	17-Oct-08		
Embedded Scale Out Aggregator For LSI Storage System Controllers	CN	2009101692649.0	25-Aug-09		
Embedded Scale Out Aggregator For LSI Storage System Controllers	EP	92517754	9-Jul-09		

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Embedded Scale Out Aggregator For LSI Storage System Controllers	JP	2009237920	15-Oct-09		
Embedded Scale Out Aggregator For LSI Storage System Controllers	KR	20090067089	23-Jul-09		
Embedded Scale Out Aggregator For LSI Storage System Controllers	TW	98125174	27-Jul-09		
ACCELERATING INTERNET SMALL COMPUTER SYSTEM INTERFACE (Iscsi) PROXY INPUT/OUTPUT (I/O)	US	12/317151	19-Dec-08		
Application Independent Storage Array Performance Optimizer	US	12/402675	12-Mar-09		
A Method To Handle Ios Between Two Arrays With Different Performance Capabilities	US	12/395786	2-Mar-09		
Non-Disruptive Methods For Updating A Controller Of A Storage Subsystem	US	12/507700	22-Jul-09		
Policy-Based Application Aware Storage Array Snapshot Backup And Restore Technique	US	12/474280	29-May-09		
Cable Chain Return System And Associated Methods	US	12/417510	2-Apr-09		
Embedded Private Scale Out Network	US	12/481389	9-Jun-09		
Embedded Private Scale Out Network	CN	2009101706675.0	01-Sep-09		
Embedded Private Scale Out Network	EP	91752550	06-Nov-09		
Embedded Private Scale Out Network	JP	20107804	18-Jan-10		

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Embedded Private Scale Out Network	KR	20090096172	09-Oct-09		
Embedded Private Scale Out Network	TW	98125374	28-Jul-09		
Storage Array Assist Architecture	US	12/481303	9-Jun-09		
Storage Array Assist Architecture	CN	200910170668X	01-Sep-09		
Storage Array Assist Architecture	EP	101563351	12-Mar-10		
Storage Array Assist Architecture	JP	20107803	18-Jan-10		
Storage Array Assist Architecture	KR	1020090096167.0	09-Oct-09		
Storage Array Assist Architecture	TW	98125377	28-Jul-09		
Enterprise Level Green Storage System Disk Drive Technique	US	12/407795	20-Mar-09		
Customer Replaceable Unit Drive Isolator	US	12/600877	19-Nov-09		
Customer Replaceable Unit Drive Isolator	WO	PCTUS2008075045	02-Sep-08		
Customer Replaceable Unit Drive Isolator	CN	2008800128099.0	02-Sep-08		
Customer Replaceable Unit Drive Isolator	EP	88210935	02-Sep-08		
Customer Replaceable Unit Drive Isolator	KR	1020107006822.0	02-Sep-08		
Customer Replaceable Unit Drive Isolator	TW	97143731	12-Nov-08		